

# Attention Deficit Hyperactivity Disorder: Diagnosis and Treatment in Children and Adolescents

Archived: This report is greater than 3 years old. Findings may be used for research purposes, but should not be considered current.



## **Attention Deficit Hyperactivity Disorder: Diagnosis and Treatment in Children and Adolescents**

**Prepared for:**

Agency for Healthcare Research and Quality  
U.S. Department of Health and Human Services  
5600 Fishers Lane  
Rockville, MD 20857  
[www.ahrq.gov](http://www.ahrq.gov)

**Contract No. 290-2015-00004-I**

**Prepared by:**

Duke Evidence-based Practice Center  
Durham, NC

**Investigators:**

Alex R. Kemper, M.D., M.P.H., M.S.  
Gary R. Maslow, M.D., M.P.H.  
Sherika Hill, M.H.A., Ph.D.  
Behrouz Namdari, M.D.  
Nancy M. Allen LaPointe, Pharm.D., M.H.S.  
Adam P. Goode, D.P.T., Ph.D.  
Remy R. Coeytaux, M.D., Ph.D.  
Deanna Befus, B.A., B.S.N.  
Andrzej S. Kosinski, Ph.D.  
Samantha E. Bowen, Ph.D.  
Amanda J. McBroom, Ph.D.  
Kathryn R. Lallinger, M.S.L.S.  
Gillian D. Sanders, Ph.D.

**AHRQ Publication No. 18-EHC005-EF**  
**January 2018**

## **Key Messages**

### **Purpose of Review**

To update a previous review by comparing strategies to diagnose, treat, and monitor children and adolescents with attention deficit hyperactivity disorder (ADHD).

### **Key Messages**

- Evidence was insufficient on imaging or electroencephalogram to diagnose ADHD in children 7–17 years of age.
- Little evidence adds to the 2011 report that found that methylphenidate is effective for children under age 6 with ADHD and that psychostimulants can be effective for children 6–12 years of age.
- Atomoxetine had slightly higher gastrointestinal effects than methylphenidate.
- Cognitive behavioral therapy may improve ADHD symptoms among children 7–17 years of age.
- Child or parent training improved ADHD symptoms among children 7–17 years of age but did not change academic performance.
- Omega-3/6 supplementation made no difference in ADHD symptoms.
- Future studies are needed to evaluate diagnosis, monitoring, and long-term outcomes for children and adolescents with ADHD managed in usual care settings.

This report is based on research conducted by the Duke Evidence-based Practice Center (EPC) under contract to the Agency for Healthcare Research and Quality (AHRQ), Rockville, MD (Contract No. 290-2015-00004-I). The findings and conclusions in this document are those of the authors, who are responsible for its contents; the findings and conclusions do not necessarily represent the views of AHRQ. Therefore, no statement in this report should be construed as an official position of AHRQ or of the U.S. Department of Health and Human Services.

**None of the investigators have any affiliations or financial involvement that conflicts with the material presented in this report.**

The information in this report is intended to help health care decisionmakers—patients and clinicians, health system leaders, and policymakers, among others—make well-informed decisions and thereby improve the quality of health care services. This report is not intended to be a substitute for the application of clinical judgment. Anyone who makes decisions concerning the provision of clinical care should consider this report in the same way as any medical reference and in conjunction with all other pertinent information, i.e., in the context of available resources and circumstances presented by individual patients.

This report is made available to the public under the terms of a licensing agreement between the author and the Agency for Healthcare Research and Quality. This report may be used and reprinted without permission except those copyrighted materials that are clearly noted in the report. Further reproduction of those copyrighted materials is prohibited without the express permission of copyright holders.

AHRQ or U.S. Department of Health and Human Services endorsement of any derivative products that may be developed from this report, such as clinical practice guidelines, other quality enhancement tools, or reimbursement or coverage policies, may not be stated or implied.

This report may periodically be assessed for the currency of conclusions. If an assessment is done, the resulting surveillance report describing the methodology and findings will be found on the Effective Health Care Program Web site at [www.effectivehealthcare.ahrq.gov](http://www.effectivehealthcare.ahrq.gov). Search on the title of the report.

Persons using assistive technology may not be able to fully access information in this report. For assistance contact [epc@ahrq.hhs.gov](mailto:epc@ahrq.hhs.gov).

**Suggested citation:** Kemper AR, Maslow GR, Hill S, Namdari B, Allen LaPointe NM, Goode AP, Coeytaux RR, Befus D, Kosinski AS, Bowen SE, McBroom AJ, Lallinger KR, Sanders GD. Attention Deficit Hyperactivity Disorder: Diagnosis and Treatment in Children and Adolescents. Comparative Effectiveness Review No. 203. (Prepared by the Duke University Evidence-based Practice Center under Contract No. 290-2015-00004-I.) AHRQ Publication No. 18-EHC005-EF. Rockville, MD: Agency for Healthcare Research and Quality; January 2018. Posted final reports are located on the Effective Health Care Program [search page](#). DOI: <https://doi.org/10.23970/AHRQEPCCER203>.

## Preface

The Agency for Healthcare Research and Quality (AHRQ), through its Evidence-based Practice Centers (EPCs), sponsors the development of systematic reviews to assist public- and private-sector organizations in their efforts to improve the quality of health care in the United States. These reviews provide comprehensive, science-based information on common, costly medical conditions, and new health care technologies and strategies.

Systematic reviews are the building blocks underlying evidence-based practice; they focus attention on the strength and limits of evidence from research studies about the effectiveness and safety of a clinical intervention. In the context of developing recommendations for practice, systematic reviews can help clarify whether assertions about the value of the intervention are based on strong evidence from clinical studies. For more information about AHRQ EPC systematic reviews, see [www.effectivehealthcare.ahrq.gov/reference/purpose.cfm](http://www.effectivehealthcare.ahrq.gov/reference/purpose.cfm).

AHRQ expects that these systematic reviews will be helpful to health plans, providers, purchasers, government programs, and the health care system as a whole. Transparency and stakeholder input are essential to the Effective Health Care Program. Please visit the Web site ([www.effectivehealthcare.ahrq.gov](http://www.effectivehealthcare.ahrq.gov)) to see draft research questions and reports or to join an email list to learn about new program products and opportunities for input.

If you have comments on this systematic review, they may be sent by mail to the Task Order Officer named below at: Agency for Healthcare Research and Quality, 5600 Fishers Lane, Rockville, MD 20857, or by email to [epc@ahrq.hhs.gov](mailto:epc@ahrq.hhs.gov).

Gopal Khanna, M.B.A.  
Director  
Agency for Healthcare Research and Quality

Arlene S. Bierman, M.D., M.S.  
Director  
Center for Evidence and Practice  
Improvement  
Agency for Healthcare Research and Quality

Stephanie Chang, M.D., M.P.H.  
Director  
Evidence-based Practice Center Program  
Center for Evidence and Practice Improvement  
Agency for Healthcare Research and Quality

Suchitra Iyer, Ph.D.  
Task Order Officer  
Center for Evidence and Practice  
Improvement  
Agency for Healthcare Research and Quality

## Acknowledgments

The authors thank Naomi Davis, Ph.D., for providing clinical expertise; Megan von Isenburg, M.S.L.S., for help with the literature search and retrieval; Robyn E. Schmidt, B.A., for assistance with project coordination; and Rebecca N. Gray, D.Phil., and Liz Wing, M.A., for editorial assistance.

## Key Informants

In designing the study questions, the EPC consulted several Key Informants who represent the end-users of research. The EPC sought the Key Informant input on the priority areas for research and synthesis. Key Informants are not involved in the analysis of the evidence or the writing of the report. Therefore, in the end, study questions, design, methodological approaches, and/or conclusions do not necessarily represent the views of individual Key Informants.

Key Informants must disclose any financial conflicts of interest greater than \$10,000 and any other relevant business or professional conflicts of interest. Because of their role as end-users, individuals with potential conflicts may be retained. The TOO and the EPC work to balance, manage, or mitigate any conflicts of interest.

The list of Key Informants who provided input to this report follows:

Barry Anton, Ph.D., A.B.P.P.  
Rainier Behavioral Health  
Tacoma, WA

William Barbaresi, M.D., FAAP  
Boston Children's Hospital  
Boston, MA

Coleen Boyle, Ph.D., M.S.Hyg.  
Centers for Disease Control and Prevention  
Atlanta, GA

Teka Dempson  
National Federation of Families for Children's  
Mental Health  
Durham, NC

Theodore Ganiats, M.D.  
University of Miami  
Miami, FL

Laurence Greenhill, M.D.  
Columbia University Medical Center  
New York, NY

Aaron Lopata, M.D., M.P.P.  
Health Resources and Services Administration  
Maternal and Child Health Bureau  
Rockville, MD

Doris Lotz, M.D., M.P.H.  
Chief Medical Officer  
New Hampshire Department of Health and  
Human Services  
Concord, NH

Mark Wolraich, M.D.  
University of Oklahoma Health Sciences  
Center  
Oklahoma City, OK

## Technical Expert Panel

In designing the study questions and methodology at the outset of this report, the EPC consulted several technical and content experts. Broad expertise and perspectives were sought. Divergent and conflicting opinions are common and perceived as healthy scientific discourse that results in a thoughtful, relevant systematic review. Therefore, in the end, study questions, design, methodologic approaches, and/or conclusions do not necessarily represent the views of individual technical and content experts.

Technical Experts must disclose any financial conflicts of interest greater than \$10,000 and any other relevant business or professional conflicts of interest. Because of their unique clinical or content expertise, individuals with potential conflicts may be retained. The TOO and the EPC work to balance, manage, or mitigate any potential conflicts of interest identified.

The list of Technical Experts who provided input to this report follows:

Coleen Boyle, Ph.D., M.S.Hyg.\*  
Centers for Disease Control and Prevention  
Atlanta, GA

Theodore Ganiats, M.D.  
University of Miami  
Miami, FL

Laurence Greenhill, M.D.\*  
Columbia University Medical Center  
New York, NY

William E. Pelham, Jr., Ph.D.\*  
Florida International University  
Miami, FL

Erin Schoenfelder Gonzalez, Ph.D.\*  
Seattle Children's Hospital  
Seattle, WA

Susanna Visser, M.S., Dr.Ph.\*  
Centers for Disease Control and Prevention  
Atlanta, GA

Mark Wolraich, M.D.\*  
University of Oklahoma Health Sciences  
Center  
Oklahoma City, OK

Julie Zito, Ph.D.\*  
University of Maryland  
Baltimore, MD

\*Provided input on Draft Report.

## Peer Reviewers

Prior to publication of the final evidence report, EPCs sought input from independent Peer Reviewers without financial conflicts of interest. However, the conclusions and synthesis of the scientific literature presented in this report do not necessarily represent the views of individual reviewers.

Peer Reviewers must disclose any financial conflicts of interest greater than \$10,000 and any other relevant business or professional conflicts of interest. Because of their unique clinical or content expertise, individuals with potential nonfinancial conflicts may be retained. The TOO and the EPC work to balance, manage, or mitigate any potential nonfinancial conflicts of interest identified.

The list of Peer Reviewers follows:

Charles J. Homer, M.D., M.P.H.  
Harvard TH Chan School of Public Health  
Boston, MA

Peter Jensen, M.D.  
Mayo Clinic  
Rochester, MN



# Attention Deficit Hyperactivity Disorder: Diagnosis and Treatment in Children and Adolescents

## Structured Abstract

**Objectives.** Attention deficit hyperactivity disorder (ADHD) is a common pediatric neurobehavioral disorder often treated in the primary care setting. This systematic review updates and extends two previous Agency for Healthcare Research and Quality (AHRQ) systematic evidence reviews and focuses on the comparative effectiveness of methods to establish the diagnosis of ADHD, updates the comparative effectiveness of pharmacologic and nonpharmacologic treatments, and evaluates different monitoring strategies in the primary care setting for individuals from birth through 17 years of age.

**Data sources.** We searched PubMed<sup>®</sup>, Embase<sup>®</sup>, PsycINFO<sup>®</sup>, and the Cochrane Database of Systematic Reviews for relevant English-language studies published from January 1, 2011, through November 7, 2016.

**Review methods.** Two investigators screened each abstract and full-text article for inclusion, abstracted the data, and performed quality ratings and evidence grading. Random-effects models were used to compute summary estimates of effects when sufficient data were available for meta-analysis.

**Results.** Evidence was contributed from 103 articles describing 90 unique studies. Twenty-one studies related to diagnosis, 69 studies related to treatment, and no studies were identified on monitoring. The Attention and Executive Function Rating Inventory and Childhood Executive Functioning Inventory performed better than the Cambridge Neuropsychological Test Automated Battery for the diagnosis of ADHD for ages 7–17 years (strength of evidence [SOE]=low). Evidence was insufficient on the use of electroencephalography (EEG) or neuroimaging to establish the diagnosis of ADHD for ages 7–17 years. No studies directly assessed the harms to children labeled as having ADHD. Limited additional evidence published since the original 2011 report was available on ADHD medications approved by the Food and Drug Administration (FDA) compared with placebo or compared to different FDA-approved ADHD medications (SOE=insufficient). For atomoxetine and methylphenidate, the most commonly reported adverse events were somnolence and mild gastrointestinal problems. Atomoxetine had slightly higher gastrointestinal effects than methylphenidate (SOE=low). Cognitive behavioral therapy improved ADHD symptoms (SOE=low). Child or parent training improved ADHD symptoms (SOE=moderate) but made no difference in academic performance (SOE=low). Omega-3/6 fatty acid supplementation made no difference in ADHD symptoms (SOE=moderate). Across all treatments, little evidence was reported on the risk of serious adverse events, including cardiovascular risk.

**Conclusions.** The 2011 AHRQ systematic review highlighted the benefit of psychostimulants for children 6–12 years of age with ADHD for up to 24 months and found that adding psychosocial/behavioral interventions to psychostimulants is more effective than psychosocial/behavioral interventions alone for children with ADHD and oppositional defiant disorder. This targeted update found insufficient evidence regarding new approaches to the

diagnosis (e.g., EEGs, neuroimaging). Little is known about the impact of being labeled as having ADHD. Although cognitive behavioral therapy or child or parent training may decrease symptoms of ADHD, more information is needed regarding the relative benefit of these approaches compared to, or combined with, medication treatment. Omega-3/6 supplementation does not appear to improve ADHD outcomes. No information was identified regarding the optimal strategy for monitoring after diagnosis.

# Contents

<b>Introduction.....</b>	<b>1</b>
Background.....	1
Population.....	1
Diagnosis.....	2
Treatment Strategies.....	2
Monitoring Strategies With Intermediate Outcomes.....	3
Long-Term Outcomes.....	3
Key Findings From 2011 Report.....	4
Scope and Key Questions.....	5
Scope of This Review.....	5
Key Questions.....	6
Organization of This Report.....	8
<b>Methods.....</b>	<b>9</b>
Topic Refinement and Review Protocol.....	9
Literature Search Strategy.....	9
Search Strategy.....	9
Inclusion and Exclusion Criteria.....	10
Study Selection.....	15
Data Extraction.....	16
Quality Assessment of Individual Studies.....	16
Data Synthesis.....	17
Strength of the Body of Evidence.....	18
Applicability.....	20
Peer Review and Public Commentary.....	20
<b>Results.....</b>	<b>21</b>
Results of Literature Searches.....	21
Description of Included Studies: Overview.....	23
Key Question 1: ADHD Diagnosis.....	26
Description of Included Studies.....	34
Key Points.....	34
Detailed Synthesis—Diagnosis.....	34
Strength of Evidence—Diagnosis.....	35
Key Question 2: ADHD Treatment.....	38
Description of Included Studies.....	38
Key Point for Pharmacologic Versus Placebo/Usual Care.....	38
Detailed Synthesis—Pharmacologic Versus Placebo/Usual Care.....	38
Findings in Relation to What Is Already Known—Pharmacologic Versus Placebo/Usual Care.....	41
Strength of Evidence—Pharmacologic Versus Placebo/Usual Care.....	42
Key Points for Pharmacologic Versus Pharmacologic.....	45
Detailed Synthesis—Pharmacologic Versus Pharmacologic.....	45
Findings in Relation to What Is Already Known—Pharmacologic Versus Pharmacologic.....	47
Strength of Evidence—Pharmacologic Versus Pharmacologic.....	48
Key Points for Pharmacologic Versus Nonpharmacologic.....	51

Detailed Synthesis—Pharmacologic Versus Nonpharmacologic .....	51
Findings in Relation to What Is Already Known—Pharmacologic Versus Nonpharmacologic .....	53
Strength of Evidence—Pharmacologic Versus Nonpharmacologic .....	53
Key Points for Nonpharmacologic Versus Nonpharmacologic/Placebo .....	56
Detailed Synthesis—Overview .....	57
Detailed Synthesis—Neurofeedback .....	57
Strength of Evidence—Neurofeedback .....	58
Detailed Synthesis—Cognitive Training .....	60
Findings in Relation to What Is Already Known—Cognitive Training .....	61
Strength of Evidence—Cognitive Training .....	61
Detailed Synthesis—Cognitive Behavioral Therapy .....	63
Strength of Evidence—Cognitive Behavioral Therapy .....	63
Detailed Synthesis—Child or Parent Training or Behavioral Interventions .....	65
Findings in Relation to What Is Already Known—Child or Parent Training or Behavioral Interventions .....	67
Strength of Evidence—Child or Parent Training or Behavioral Interventions.....	67
Detailed Synthesis—Omega-3/6 Fatty Acid Supplementation.....	69
Findings in Relation to What Is Already Known—Omega-3 Fatty Acid Supplementation.	71
Strength of Evidence—Omega-3 Supplementation.....	71
Detailed Synthesis—Herbal Interventions or Dietary Approaches .....	74
Strength of Evidence—Herbal Interventions or Dietary Approaches .....	75
Detailed Synthesis—Other Approaches .....	77
Findings in Relation to What Is Already Known—Other Approaches .....	77
Strength of Evidence—Other Approaches.....	77
Key Question 3: ADHD Monitoring .....	79
<b>Discussion.....</b>	<b>80</b>
Key Findings and Strength of Evidence .....	80
KQ 1: ADHD Diagnosis .....	80
KQ 2: ADHD Treatment.....	80
Findings in Relation to What Is Already Known.....	84
Applicability .....	89
Implications for Clinical and Policy Decisionmaking .....	90
Limitations of the Systematic Review Process .....	91
Research Recommendations .....	91
KQ 1: ADHD Diagnosis Research Gaps .....	92
KQ 2: ADHD Treatment Research Gaps.....	92
KQ 3: ADHD Monitoring Research Gaps .....	93
Conclusions.....	93
<b>References .....</b>	<b>94</b>
<b>Acronyms and Abbreviations .....</b>	<b>109</b>
<b>Tables</b>	
Table 1. Inclusion and exclusion criteria .....	10
Table 2. Definition of quality assessment ratings.....	16

Table 3. Required domains: Definitions and scores .....	18
Table 4. Definition of strength of evidence grades .....	20
Table 5. Ages of individuals represented in included ADHD studies .....	23
Table 6. Description of available tools for ADHD assessment .....	27
Table 7. Strength of evidence for major outcomes—diagnosis .....	36
Table 8. Strength of evidence for major outcomes—labeling/stigma .....	37
Table 9. Strength of evidence for major outcomes—comparisons between pharmacologic and placebo/usual care treatments .....	43
Table 10. Strength of evidence for major outcomes—comparisons of pharmacologic treatments .....	49
Table 11. Characteristics of included studies .....	51
Table 12. Strength of evidence for major outcomes—comparisons between pharmacologic and nonpharmacologic treatments .....	54
Table 13. Strength of evidence for major outcomes—neurofeedback .....	59
Table 14. Strength of evidence for major outcomes—cognitive training.....	62
Table 15. Strength of evidence for major outcomes—cognitive behavioral therapy .....	64
Table 16. Strength of evidence for major outcomes—child or parent training or behavioral interventions.....	68
Table 17. Strength of evidence for major outcomes—omega-3 fatty acid supplementation.....	72
Table 18. Strength of evidence for major outcomes—herbal interventions or dietary approaches .....	76
Table 19. Strength of evidence for major outcomes—other approaches.....	78
Table 20. Summary strength of evidence for major outcomes for KQ 2.....	82
Table 21. Differences in scope between the 2011 and current evidence reports.....	85
Table 22. Potential issues with applicability of included studies for Key Question 1.....	89
Table 23. Potential issues with applicability of included studies for Key Question 2.....	90

## Figures

Figure 1. Analytic framework for ADHD.....	7
Figure 2. Literature flow diagram.....	22
Figure 3. Meta-analysis for effects of omega-3/6 supplementation compared with placebo—parent ratings.....	70
Figure 4. Meta-analysis for effects of omega-3/6 supplementation compared with placebo—teacher ratings .....	70

## Appendixes

Appendix A. Exact Search Strings
Appendix B. Data Abstraction Elements
Appendix C. List of Included Studies
Appendix D. List of Excluded Studies
Appendix E. Key to Included Primary and Companion Articles
Appendix F. Characteristics of Included Studies
Appendix G. Overview of Included Studies
Appendix H. Data Tables

# Introduction

## Background

Attention deficit hyperactivity disorder (ADHD) is a common neurobehavioral disorder, with about 11 percent of children ages 4 through 17 having been diagnosed.<sup>1</sup> In the United States, there are significant geographical variations in the rate of diagnosis and treatment, and the prevalence has increased over time.<sup>1, 2</sup> The most recent Diagnostic and Statistical Manual of Mental Disorders (DSM-5)<sup>3</sup> has revised the diagnostic criteria for ADHD. To be diagnosed with ADHD, a child or younger adolescent needs to meet six out of nine possible inattentive symptoms (such as failing to give close attention to details or being easily distracted) and/or six out of nine possible hyperactivity/impulsivity symptoms (such as being “on the go” or difficulty waiting their turn). Also, symptoms need to be present for at least 6 months, occur in at least two different settings, be present before 12 years of age, and not be better explained by another disorder. For older adolescents and adults, the number of required symptoms per category is reduced to five out of nine. ADHD has three presentations: (1) predominantly inattentive, (2) predominantly hyperactive/impulsive, and (3) combined, based on how many symptoms in each diagnostic category an individual meets. ADHD that does not clearly fall into these categories can be referred to as ADHD-Not Otherwise Specified.

Psychostimulants can be effective in reducing distractibility, improving sustained attention, reducing impulsive behaviors, and improving activity level.<sup>4</sup> Nonpharmacologic therapies (e.g., behavioral therapy, psychotherapy, psychosocial interventions, and complementary and alternative medicine interventions), either alone or in combination with medication management, could potentially address core symptoms of ADHD or the long-term impairments that are associated with the disorder. Understanding the role of nonpharmacologic therapies can be challenging because they encompass a broad range of approaches to care, ranging from highly structured behavioral interventions to complementary medicines.

Despite growing research on treatment for ADHD and awareness of the condition’s course of illness, important questions remain about ADHD diagnosis and management. Ensuring appropriate diagnosis and avoidance of misdiagnosis is a key concern for clinical practice. For treatment, Key Questions include how to best tailor therapy to individuals based on their characteristics (e.g., age, sex, ADHD symptoms, comorbid conditions, prior and current therapy) and how to efficiently and effectively monitor individuals with ADHD over time.

## Population

This systematic review focuses on children through 17 years of age, categorized to reflect broad developmental stages (less than 4 years, 4 through 6 years, 7 through 12 years, and 13 through 17 years). We explored the impact of ADHD and its treatment and monitoring strategies in several subgroups of interest. These include sex because the clinical presentation can vary as can the response to therapy.<sup>5</sup>

Many risk factors have been associated with ADHD, including prenatal factors (e.g., tobacco use, alcohol use, substance abuse), perinatal factors (e.g., low birth weight, prematurity), and early postnatal factors (e.g., lead exposure, social environment).<sup>6</sup> Also, family history of ADHD and specific genetic conditions (e.g., Fragile X syndrome) can be associated with ADHD. We evaluated these subpopulations by stratifying outcomes based on common these risk factors when available.

## Diagnosis

ADHD diagnosis is based on clinician assessment to determine whether the criteria described in the DSM are met. For this review, studies based on the DSM-5 or DSM-IV criteria were included. Rating scales, which can be completed by parents, teachers, and/or patients, are used to evaluate the presence of each of the 18 symptoms as well as the degree of impairment that results from symptoms. Rating scale data are integrated with a clinical interview to determine the onset, course, duration, and impairment associated with symptoms. In addition, screening and clinical evaluation of potential comorbid psychiatric conditions is a key part of the diagnostic process. Important questions remain about the accuracy of this approach in primary care settings. A particular challenge in primary care has been the lack of adequate time and expertise to distinguish ADHD from other conditions that may appear similar (e.g., anxiety, conduct disorders, speech or language delay, other developmental disorders) and to determine whether another condition may better explain ADHD symptoms or is present as a comorbid diagnosis.<sup>7</sup>

Although most previous research has relied on interviews and rating scales for diagnosis, the U.S. Food and Drug Administration (FDA) has recently approved a new device “to aid in the diagnosis of ADHD.”<sup>8</sup> The Neuropsychiatric Electroencephalograph [EEG]-Based Assessment Aid (NEBA; NEBA Health, Augusta, GA) was approved to provide clinical support for an ADHD diagnosis in patients ages 6–17 years but is not intended to replace the clinical evaluation.<sup>8</sup> There is significant interest in the use of tests to either supplement or replace the standard methods of diagnosis used in the primary care setting.

## Adverse Effects of Diagnosis

Being diagnosed with ADHD can lead to “labeling harms,” which can lead to stigma, reduced self-esteem, or reduced future educational attainment or career opportunities.<sup>9-11</sup> Misdiagnosis can lead to overdiagnosis or underdiagnosis and can also miss conditions that can be similar in appearance to ADHD (e.g., anxiety, conduct disorders, speech or language delay, other medical disorders/diseases, or other developmental disorders) that may warrant a different course of treatment.

## Treatment Strategies

Treatment strategies for ADHD can be divided into pharmacologic and nonpharmacologic therapies. The main categories of pharmacologic therapies include stimulants, selective norepinephrine reuptake inhibitors, alpha-2 agonists, and antidepressants. Nonpharmacologic therapies include psychosocial interventions, behavioral interventions, school interventions, cognitive training therapies, learning training, biofeedback or neurofeedback, parent behavior training (i.e., training parents to reduce unwanted behaviors, foster desired behaviors and interactions, and improve family relationships), dietary supplements (e.g., omega-3 fatty acids, vitamins, herbal supplements, probiotics), elimination diets, vision training, and chiropractic treatment. For the first line of therapy, the American Academy of Pediatrics (AAP) recommends behavior therapy for children 4–5 years of age and preferably both behavior therapy and FDA-approved medications for children 6–18 years of age.<sup>12</sup>

## **Adverse Effects of Treatment**

Adverse effects associated with pharmacologic treatment can include changes in appetite, growth suppression,<sup>13</sup> weight decrease, sleep disturbance, gastrointestinal symptoms, elevated blood pressure, increased heart rate, risk of sudden cardiac death, cardiac arrhythmias, conduction abnormalities, tics or other movement disorders, behavior changes, hallucination, aggression, suicide (attempted or completed), and suicidal ideation. Importantly, suicide and suicidal ideation can be both an adverse effect of treatment and an ADHD-related health outcome. Treatment can also lead to personality changes or loss of spontaneity as perceived by the treated individual, family members, or other close acquaintances.

Individuals who are initially misdiagnosed may be overtreated, and those who have inadequate monitoring may be overtreated or undertreated. Overtreatment leads to risk of treatment with no or little potential benefit. Because many of the pharmacologic treatments are controlled substances, overtreatment could also lead to abuse of a drug to which the treated individual might not otherwise have access.<sup>14</sup> Although reduction of ADHD symptoms can improve family functioning, the need to provide treatments can potentially also lead to parental stress, and depending on the specific treatment, there may be significant time demands, opportunity, or financial costs.

## **Monitoring Strategies With Intermediate Outcomes**

After a child is diagnosed with ADHD and an initial treatment strategy is determined, a monitoring strategy is applied to ensure that outcomes are evaluated over time and modification to treatments are made when needed. Stimulant prescription refills are often required monthly, which can also support the need for frequent re-evaluations. Several instruments are available to monitor treatment response and adverse effects over time, including the Vanderbilt scales, the Conners scales, and the Swanson, Nolan, and Pelham Revision (SNAP-IV) rating scales.<sup>15-17</sup> Monitoring also includes assessment of any adverse effects of treatment. There are variations in the frequency of monitoring, often based on the age of the child, the specific treatment, duration of treatment, previous symptoms and comorbid conditions, and family and health care provider preferences. Rating scale results are intermediate monitoring outcomes associated with the outcomes described below.

## **Long-Term Outcomes**

Outcomes associated with ADHD in childhood are based on measures of performance and/or functional impairment. In childhood and adolescence, individuals with ADHD are at risk for lower academic performance (e.g., grades, scores on standardized tests), lower rates of graduation from high school, higher rates of grade retention, and higher rates of school suspension. In adulthood, outcomes may include limited workforce participation and/or difficulty maintaining a steady job. Throughout the lifespan, social outcomes associated with ADHD may include problematic peer and family relationships. Individuals with ADHD are also at risk for negative outcomes associated with risk-taking behaviors such as motor vehicle collisions or other accidents, substance use (e.g., higher rates of smoking, more difficulty quitting smoking), and unprotected sexual activity. Mental health outcomes that are associated with ADHD include higher rates of mood disorders, depression or anxiety, higher likelihood of having self-injurious nonsuicidal behavior, suicide (attempted or completed), suicidal ideation, and risk of mortality. Because these long-term outcomes can be associated with the known course of illness for



ADHD, with commonly occurring comorbid conditions or in some cases with ADHD treatment, it can be difficult to fully assess and predict long-term outcomes for individuals with ADHD.

## **Key Findings From 2011 Report**

This review updates previous Agency for Healthcare Research and Quality (AHRQ) reports focused on ADHD treatment. This most recent report from 2011 focused on (1) pharmacologic treatments for children under 6 years of age with ADHD and a disruptive behavior disorder; (2) long-term comparative safety and effectiveness of various treatment options for children 6 years of age or older with ADHD; and (3) prevalence of ADHD and rates of diagnosis and treatment for ADHD. The 2011 report concluded that high strength of evidence (SOE) supported parent behavior training and low SOE supported methylphenidate (MPH) for improving the behavior of children aged 6 years or younger. The 2011 report also concluded that there was sparse evidence at the time regarding long-term outcomes following interventions for ADHD, but that treatment for 12 to 24 months with MPH or atomoxetine appeared to be associated with improvements in symptomatic behavior. This current systematic review builds on the 2011 report and also examines evidence on the diagnosis of ADHD. This report was developed to synthesize information for clinicians, scientists, and families with children with ADHD or with children suspected to have ADHD about the accuracy of diagnostic strategies and the harms and benefits of establishing the diagnosis and treating the condition.

Although different in scope, the current report primarily builds on the foundation of the 2011 report.<sup>4</sup> Key findings of that report included:

- Parent behavioral interventions show benefit for ADHD symptoms for children younger than 6 years of age (high SOE).
- MPH is efficacious and generally safe for the treatment of ADHD symptoms for children younger than 6 years (low SOE). However, the studies are of short duration (lasting days to weeks).
- Psychostimulants provide control of ADHD symptoms and are well tolerated in children 6 years and older.
- Combined medication and behavioral treatment are effective in treating ADHD plus oppositional defiant disorder symptoms, primarily in boys 7–9 years of age with primarily combined type of ADHD.
- Sparse evidence at the time regarding long-term outcomes following interventions for ADHD, but treatment for 12 to 24 months with MPH or atomoxetine appeared to be associated with improvements in symptomatic behavior.

# Scope and Key Questions

## Scope of This Review

This review focuses on the diagnosis and management of ADHD within the primary care practice setting or other settings in which care can be coordinated by primary care providers (e.g., in partnership with community-based psychologists or psychiatrists). Although treatment of ADHD in childhood and adolescence is the focus, this review also evaluates outcomes in adulthood from treatment that occurs during childhood or adolescence.

Our review updates a 2011 review that focused on the effectiveness of ADHD treatment in at-risk preschoolers, the long-term effectiveness of ADHD treatment in all ages, and the variability in ADHD prevalence, diagnosis, and treatment.<sup>4</sup> The current review builds on this 2011 report and addresses important gaps in knowledge related to the diagnosis of ADHD, concerns about labeling with ADHD, and conflicting literature about the effectiveness of treatment.

## Rationale and Context

### DSM-5 Criteria for Diagnosis

The DSM-5 criteria are the gold standard for the diagnosis of ADHD. However, most of the previous studies were developed before the release of these criteria, which were released in 2013. Compared with the DSM-IV, the DSM-5 criteria allow some symptoms to appear prior to 12 years of age compared with 7 years of age, so more adolescents fulfill the criteria. In addition, DSM-5 permits the co-occurrence of autism spectrum disorder with the diagnosis of ADHD, whereas these disorders could not be co-diagnosed in DSM-IV. The DSM-5 criteria emphasize the life-long, chronic nature of ADHD and the need to monitor individuals over time.

### Patient Preferences

There are differences in patient and family preferences related to both pharmacologic and nonpharmacologic treatment<sup>18</sup> and potential outcomes. These treatment preferences have been shown to be associated with treatment initiation and choice. Findings from this systematic review are intended to help inform patient and family decisions based on the benefits and harms of specific treatments.

### Other Factors

Two previous AHRQ evidence reports have addressed ADHD.<sup>4,19</sup> Because of the number of studies related to ADHD, this report builds on these previous reports with specific attention to issues related to diagnosis, treatment, and management of children and adolescents. In the period since the 2011 publication of the AAP clinical practice guideline,<sup>12</sup> new medication formulations have become available (e.g., MPH transdermal system and suspension, lisdexamfetamine, amphetamine sulfate tablets, and dextroamphetamine sulfate tablets), and the DSM-5 has been released, increasing clinical and decisionmaking uncertainty. A separate report on disruptive behavior disorder is nearly complete and was therefore not targeted in this systematic review. However, we do include disruptive behavior specifically related to ADHD.

### Cost

Cost assessment was not included in this review.

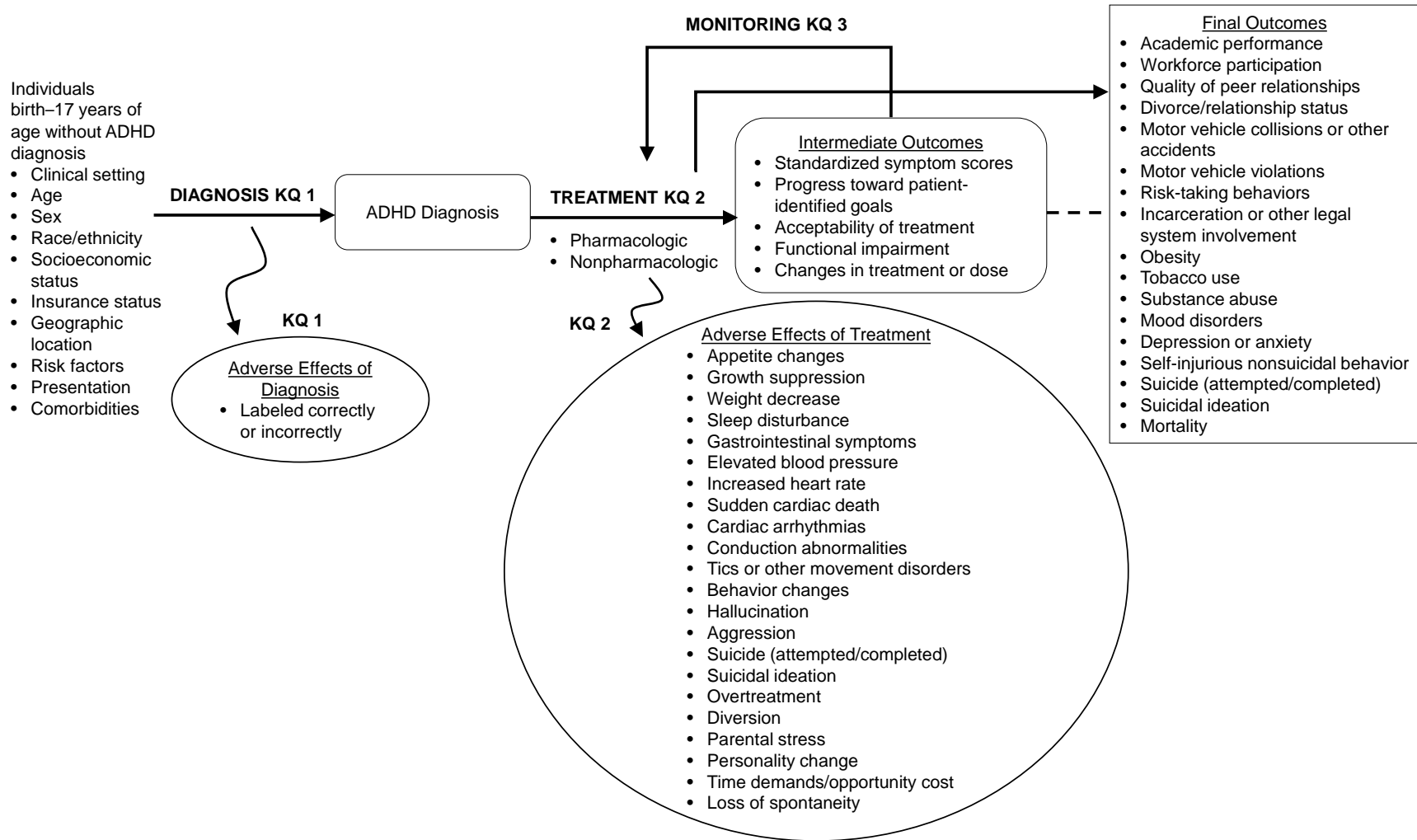
## Key Questions

The specific Key Questions (KQs) addressed in this review are listed below, and Figure 1 displays the analytic framework that guided our work.

- KQ 1: For the diagnosis of ADHD:
  - a. What is the comparative diagnostic accuracy of approaches that can be used in the primary care practice setting or by specialists to diagnose ADHD among individuals younger than 7 years of age?
  - b. What is the comparative diagnostic accuracy of EEG, imaging, or approaches assessing executive function that can be used in the primary care practice setting or by specialists to diagnose ADHD among individuals aged 7 through 17?
  - c. For both populations, how does the comparative diagnostic accuracy of these approaches vary by clinical setting, including primary care or specialty clinic, or patient subgroup, including age, sex, or other risk factors associated with ADHD?
  - d. What are the adverse effects associated with being labeled correctly or incorrectly as having ADHD?
- KQ 2: What are the comparative safety and effectiveness of pharmacologic and/or nonpharmacologic treatments of ADHD in improving outcomes associated with ADHD? How do these outcomes vary by presentation (inattentive, hyperactive/impulsive, and combined) or other comorbid conditions? What is the risk of diversion of pharmacologic treatment?
- KQ 3: What are the comparative safety and effectiveness of different monitoring strategies to evaluate the effectiveness of treatment or changes in ADHD status (e.g., worsening or resolving symptoms)?

The analytic framework presented in Figure 1 illustrates the population, interventions, outcomes, and adverse effects that guided the literature search and synthesis. This figure shows how individuals through 17 years of age without ADHD may be diagnosed and treated for ADHD, and how treatment is associated with a range of potential adverse effects and outcomes.<sup>4</sup> KQ 1 evaluates the comparative accuracy of approaches used to diagnose ADHD, including how the diagnostic accuracy varies by setting, patient subgroup, or other risk factors. For children younger than 7 years, we included any method available to primary care clinicians (KQ 1a). However, for children 7 through 17 years, we focused on novel approaches only because other reports have assessed the standard screening instruments used for older children. Although the studies were not restricted to primary care settings, the methods have to be ones available directly or easily upon referral to primary care clinicians based on feedback from the Technical Expert Panel and internal clinical experts. KQ 1 also addresses adverse effects of ADHD diagnosis. KQ 2 considers the comparative safety and effectiveness of pharmacologic and nonpharmacologic treatments for ADHD and how the outcomes vary by presentation or other comorbid conditions. KQ 2 also addresses adverse effects of ADHD treatment. KQ 3 considers the comparative safety and effectiveness of different monitoring strategies to evaluate the effectiveness of treatment or changes in ADHD status over time.

**Figure 1. Analytic framework for ADHD**



## Organization of This Report

The remainder of the review first presents our methods followed by an overview of the results of the updated systematic review. Each results section also describes “Findings in Relation to What Is Known” to provide appropriate context for the reader. We then synthesize the literature and provide summary tables and SOE grades for the outcomes. The discussion section offers our conclusions, summarizes our findings, and provides other information relevant to interpreting this work for clinical practice and future research. Within the discussion we also include a summary table of how this updated systematic review compares and contrast to the 2011 AHRQ report in terms of the KQs addressed, populations and outcomes of interest, and the findings of the review.

Appendix A contains the exact search strings for the literature searches. Appendix B presents the data elements abstracted from the included studies. Appendix C lists the included studies. Appendix D lists the excluded studies and the reason for exclusion. Appendix E provides a key to the primary and companion articles. Appendix F presents details on the study characteristics of included studies. Appendix G presents an overview of included studies. Appendix H presents detailed data tables for the different outcomes and comparisons of interest.

A list of acronyms and abbreviations is at the end of this report.

## Methods

For this comparative effectiveness review, we followed the methods from the Agency for Healthcare Research and Quality (AHRQ)'s *Methods Guide for Effectiveness and Comparative Effectiveness Reviews* (hereafter referred to as the Methods Guide) for the Evidence-based Practice Center (EPC) program.<sup>20</sup> We sought feedback regarding the conduct of the work (such as development of search strategies and identifying outcomes of key importance) from the Task Order Officer and the Technical Expert Panel. Our methods map to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist.<sup>21</sup> All methods and analyses were determined *a priori*.

### Topic Refinement and Review Protocol

During topic refinement, we engaged in a public process to develop a draft and final protocol for the review. We generated an analytic framework, preliminary Key Questions (KQs), and preliminary inclusion/exclusion criteria in the form of PICOTS (populations, interventions, comparators, outcomes, timing, settings). Initially a panel of 9 key informants representing medical professionals with expertise in areas of family medicine, child and adolescent psychiatry, psychology, and pediatrics; payers; Federal agencies; and patients/caregivers gave input on the KQs to be examined; these KQs were posted on AHRQ's Effective Health Care (EHC) Web site for public comment from June 17, 2015, to July 8, 2015, and were revised to refine the scoping for KQ 1 and KQ 2, clarify the exclusion of pre-post studies, and update the grey literature to be searched. These revisions were made prior to seeing the results of any studies.

We then drafted a protocol for the systematic review and recruited a panel of technical experts to provide clinical content and methodological expertise throughout the development of the review. This panel included medical professional and Federal agency representation similar to that of the key informant group. The finalized protocol is posted on the EHC Web site ([www.effectivehealthcare.ahrq.gov](http://www.effectivehealthcare.ahrq.gov)). The PROSPERO registration is CRD42016029134.

### Literature Search Strategy

#### Search Strategy

To identify relevant published literature, we searched MEDLINE<sup>®</sup> (via PubMed), Embase<sup>®</sup>, PsycINFO<sup>®</sup>, and the Cochrane Database of Systematic Reviews (CDSR), limiting the search to studies conducted in children 17 years of age and younger and published from January 1, 2009, to November 7, 2016. These databases were selected based on internal expert opinion that they would identify most of the relevant literature on this topic and following prior related systematic reviews. We believe that the evidence published from 2009 forward both represents the current standard of care for the population of interest in this review and allows this report to build on the previous systematic review published in 2011 (which included literature through May 31, 2010).<sup>4</sup>

We used a combination of medical subject headings and title and abstract keywords, focusing on terms to describe the relevant population and interventions of interest. Exact search strings used for each KQ are in Appendix A. Where possible, we used existing validated search filters. An experienced search librarian guided all searches. We supplemented the electronic searches with a manual search of citations from a set of key primary and review articles.<sup>22-79</sup> The reference list for identified pivotal articles was hand-searched and cross-referenced against our

database, and additional relevant manuscripts were retrieved. All citations were imported into an electronic bibliographical database (EndNote® Version X7; Thomson Reuters, Philadelphia, PA).

To identify relevant gray literature, the EPC Scientific Resource Center made requests to drug and device manufacturers for scientific information packets solicited through the AHRQ EHC Web site. We also searched study registries for relevant articles from completed studies. Gray literature databases included ClinicalTrials.gov, the World Health Organization International Clinical Trials Registry Platform search portal, and the National Guidelines Clearinghouse.

As an additional step in identifying adverse effects of interest, we reviewed the known adverse effects of attention deficit hyperactivity disorder (ADHD) medications monitored by the Food and Drug Administration (FDA).<sup>80</sup> As a result of that assessment, we added two additional outcomes to consideration for this review: chemical leukoderma and priapism.

## Inclusion and Exclusion Criteria

We specified our inclusion and exclusion criteria based on the PICOTS (Populations, Interventions, Comparators, Outcomes, Timing, Settings) identified in topic refinement. Table 1 specifies inclusion and exclusion criteria.

**Table 1. Inclusion and exclusion criteria**

PICOTS Element	Inclusion Criteria	Exclusion Criteria
Populations	<p>KQ 1: Individuals birth through 17 years of age without the diagnosis of ADHD, divided by subquestion as follows:</p> <ul style="list-style-type: none"> <li>• KQ 1a considers the initial diagnosis of individuals under 7 years of age.</li> <li>• KQ 1b considers the initial diagnosis of individuals through 17 years of age using EEG, imaging, or executive function approaches.</li> <li>• KQs 1c and 1d considers both populations.</li> </ul> <p>KQ 2: Individuals birth through 17 years of age with a diagnosis of ADHD</p> <p>KQ 3: Individuals birth through 17 years of age who have previously begun treatment for ADHD</p> <p>Subgroups of interest for KQs 1-3:</p> <ul style="list-style-type: none"> <li>• The general population of children and adolescents: ages less than 4, 4–6, 7–12, and 13–17 years</li> <li>• When data are available, findings are separately evaluated by sex or specific risk factors (prenatal tobacco, alcohol, or substance abuse; prematurity or low birth weight; and family history); ADHD presentation; comorbidity; race/ethnicity; socioeconomic status; insurance status; geographic location</li> </ul>	<p>Individuals 18 years of age or older. Note that studies with individuals greater than 18 years of age are included as long as findings are reported separately for individuals 18 years and under, or if the mean patient age plus the standard deviation is not greater than 21 years of age. Also note that for long-term studies, the age of the individuals may be greater than 18, but these studies are only considered for inclusion if the age at enrollment in the study was 18 years or younger.</p> <p>Administrative claims data used for diagnosis of ADHD</p>

Interventions	<p>KQ 1: Any standard ADHD diagnostic strategy, including clinician interview or standardized instrument (e.g., Vanderbilt scales, the Conner scales, and the SNAP-IV rating score) for individuals under 7 years of age. The use of EEG-based systems, imaging, or assessment of executive function were evaluated in the diagnosis of ADHD in individuals through 17 years of age.</p> <p>KQ 2: Any pharmacologic or nonpharmacologic treatment of ADHD, alone or in combination:</p> <ul style="list-style-type: none"> <li>• Pharmacologic treatments considered are brand name and generic formulations of the following medications<sup>a</sup>: <ul style="list-style-type: none"> <li>○ Psychostimulants <ul style="list-style-type: none"> <li>▪ Methylphenidate (MPH)</li> <li>▪ Dexmethylphenidate (D-TMP)</li> <li>▪ Dextroamphetamine (DEX)</li> <li>▪ Lisdexamfetamine (LDX)</li> <li>▪ Mixed amphetamine salts (MAS)</li> <li>▪ Amphetamine</li> </ul> </li> <li>○ Tricyclic antidepressants <ul style="list-style-type: none"> <li>▪ *Desipramine</li> <li>▪ *Nortriptyline</li> </ul> </li> <li>○ Selective norepinephrine reuptake inhibitors <ul style="list-style-type: none"> <li>▪ Atomoxetine (ATX)</li> </ul> </li> <li>○ Alpha-2 agonists <ul style="list-style-type: none"> <li>▪ Clonidine</li> <li>▪ Guanfacine extended release (GXR)</li> <li>▪ *Guanfacine immediate release (GIR)</li> </ul> </li> <li>○ Dopamine reuptake inhibitors <ul style="list-style-type: none"> <li>▪ *Modafinil</li> <li>▪ *Armodafinil</li> </ul> </li> <li>○ Norepinephrine-dopamine reuptake inhibitors <ul style="list-style-type: none"> <li>▪ *Bupropion</li> </ul> </li> <li>○ Serotonin-norepinephrine reuptake inhibitors <ul style="list-style-type: none"> <li>▪ *Duloxetine</li> </ul> </li> <li>○ Serotonin-norepinephrine-dopamine reuptake inhibitors <ul style="list-style-type: none"> <li>▪ *Venlafaxine</li> </ul> </li> <li>○ Monoamine oxidase type B inhibitors <ul style="list-style-type: none"> <li>▪ *Selegiline</li> </ul> </li> <li>○ N-methyl-D-aspartate receptor antagonists <ul style="list-style-type: none"> <li>▪ *Amantadine</li> <li>▪ *Memantine</li> </ul> </li> </ul> </li> <li>• Nonpharmacologic therapies considered include psychosocial interventions, behavioral interventions, cognitive behavioral therapy, play therapy, mindfulness-based therapies, school interventions, cognitive training therapies, biofeedback or neurofeedback, parent behavior training, dietary supplements (e.g., omega-3 fatty acids, vitamins, herbal supplements, probiotics), homeopathy, acupuncture, elimination diets, vision training, exercise, and chiropractic treatment.</li> </ul> <p>KQ 3: Follow-up visits in primary care with various methods and within times (monthly to annually) for repeat monitoring, independent of treatment.</p>	<p>KQ 1: Validation studies or diagnosis conducted using a nonvalidated instrument</p> <p>KQ 2: Studies comparing pharmacologic agents approved by the FDA for the treatment of ADHD that have enrollment of fewer than 100 patients with ADHD, or less than 6 months of follow-up</p>
---------------	--	--



PICOTS Element	Inclusion Criteria	Exclusion Criteria
Comparators	<p>KQ 1: Confirmation of diagnosis by a specialist (gold standard), including psychologist or psychiatrist or other care provider using a well-validated and reliable process of confirming the diagnosis of ADHD according to the DSM-4 or DSM-5.</p> <p>KQ 2: Specific treatments compared with other treatments as described above or to no treatment.</p> <p>KQ 3: Follow-up compared with differing durations of follow-up or differing settings of follow-up.</p>	KQ 1: Comparison to diagnosis with a nonvalidated instrument

Outcomes	<p>KQ 1:</p> <ul style="list-style-type: none"> <li>• Accuracy of diagnostic strategy, as measured by: <ul style="list-style-type: none"> <li>○ Diagnostic concordance of primary care provider with specialist</li> <li>○ Inter-rater reliability</li> <li>○ Internal consistency</li> <li>○ Test-retest</li> <li>○ Sensitivity</li> <li>○ Specificity</li> <li>○ Positive predictive value</li> <li>○ Negative predictive value</li> <li>○ False positives</li> <li>○ False negatives</li> <li>○ Risk of missed condition that can appear as ADHD (i.e., misdiagnosis)</li> </ul> </li> <li>• Labeling is any measure of stigma following diagnosis comparing those with and without ADHD.</li> </ul> <p>KQ 2:</p> <ul style="list-style-type: none"> <li>• Intermediate outcomes: <ul style="list-style-type: none"> <li>○ Changes on standardized symptom scores or progress toward patient-identified goals. Standardized symptom scores include narrow-band focused instruments (Vanderbilt rating scales, ADHD Rating Scale) and broad-band scales (Child Behavior Checklist and Teacher Report Form, Behavior Assessment System for Children, Conners' Rating Scales-Revised, Conners' 3 Parent, Conners' 3 Teacher)</li> <li>○ Acceptability of treatment</li> <li>○ Functional impairment (assessed using the Clinical Global Impressions [CGI] scale or the Impairment Rating Scale [IRS])</li> </ul> </li> <li>• Final outcomes include: <ul style="list-style-type: none"> <li>○ Academic performance <ul style="list-style-type: none"> <li>▪ Academic Performance Rating Scale</li> <li>▪ Academic Competency Evaluation Scale (ACES)</li> <li>▪ (Actual) School grades</li> <li>▪ Grade Retention/Not being promoted</li> <li>▪ Vanderbilt Teacher Form Academic Performance Subscale</li> <li>▪ Standardized achievement tests (WIAT, WJ, WRAT)</li> </ul> </li> <li>○ Workforce participation</li> <li>○ Quality of peer relationships</li> <li>○ Divorce/relationship status</li> <li>○ Motor vehicle collisions or other accidents</li> <li>○ Motor vehicle violations</li> <li>○ Risk-taking behaviors</li> <li>○ Incarceration or other interactions with the legal system (juvenile detention, probation, court-mandated interventions, need for residential placement)</li> <li>○ Obesity</li> <li>○ Tobacco use</li> <li>○ Substance abuse</li> <li>○ Mood disorders</li> <li>○ Depression or anxiety</li> </ul> </li> </ul>	
----------	---	--

PICOTS Element	Inclusion Criteria	Exclusion Criteria
	<ul style="list-style-type: none"> <li>○ Self-injurious nonsuicidal behavior</li> <li>○ Suicide (attempted or completed)</li> <li>○ Suicidal ideation</li> <li>○ Mortality</li> <li>● Adverse effects of treatment, including: <ul style="list-style-type: none"> <li>○ Changes in appetite</li> <li>○ Growth suppression</li> <li>○ Weight decrease</li> <li>○ Sleep disturbance</li> <li>○ Gastrointestinal symptoms</li> <li>○ Elevated blood pressure</li> <li>○ Increased heart rate</li> <li>○ Risk of sudden cardiac death</li> <li>○ Cardiac arrhythmias</li> <li>○ Conduction abnormalities</li> <li>○ Tics or other movement disorders</li> <li>○ Behavior changes</li> <li>○ Hallucination</li> <li>○ Aggression</li> <li>○ Suicide (attempted or completed)</li> <li>○ Suicidal ideation</li> <li>○ Overtreatment</li> <li>○ Diversion of pharmacotherapy</li> <li>○ Parental stress</li> <li>○ Personality change</li> <li>○ Time demands/opportunity cost</li> <li>○ Loss of spontaneity</li> <li>○ Chemical leukoderma</li> <li>○ Priapism</li> </ul> </li> </ul> <p>KQ 3:</p> <ul style="list-style-type: none"> <li>● Changes in treatment or dose</li> <li>● Adverse effects of treatment as described under KQ 2</li> <li>● Changes in intermediate outcomes (e.g., standardized symptom scores, progress toward patient-identified goals, functional impairment) as described under KQ 2</li> </ul>	
Timing	<p>KQ 1:</p> <ul style="list-style-type: none"> <li>● For assessment of diagnostic accuracy: diagnostic follow-up must be within 4 months of the initial evaluation and must be completed before treatment is initiated</li> <li>● For labeling: any time after the ADHD diagnosis</li> </ul> <p>KQs 2 and 3: Any</p>	
Settings	<p>KQ 1: Primary or specialty care settings</p> <p>KQs 2 and 3: Any</p>	None

PICOTS Element	Inclusion Criteria	Exclusion Criteria
Study design	<ul style="list-style-type: none"> <li>• Original data</li> <li>• Randomized trials, prospective and retrospective observational studies with comparator; for diagnostic accuracy, cross-sectional studies are acceptable if they include patients with diagnostic uncertainty and direct comparison of diagnosis in primary care to diagnosis by a specialist</li> <li>• Randomized controlled trials with sample size: <ul style="list-style-type: none"> <li>○ ≥20 subjects for KQs 1 and 3</li> <li>○ ≥50 subjects for KQ 2 (or 100 subjects for studies comparing two or more pharmacologic treatments approved by the FDA for the treatment of ADHD)</li> </ul> </li> <li>• Observational studies with sample size: <ul style="list-style-type: none"> <li>○ ≥20 subjects for KQs 1 and 3</li> <li>○ ≥50 subjects for KQ 2 (or 100 subjects for studies comparing two or more pharmacologic treatments approved by the FDA for the treatment of ADHD)</li> </ul> </li> </ul>	<p>Editorials, nonsystematic reviews, letters, case series, case reports, abstract-only, pre-post studies</p> <p>Because studies with fewer than 20 subjects are often pilot studies or studies of lower quality, we excluded them from our review. Given the large evidence base for comparative pharmacologic treatment studies in KQ2 we increased this sample size limit to 50 subjects for KQ2 and to 100 subjects for studies comparing two or more pharmacologic treatments approved by the FDA for the treatment of ADHD. These sample size limits were seen as representing population study sizes that would be needed to substantially impact the assessment of the existing evidence base.</p>
Publications	<ul style="list-style-type: none"> <li>• English-language publications only</li> <li>• Published on or after January 1, 2009</li> <li>• Relevant systematic reviews, meta-analyses, or methods articles (used for background only)<sup>b</sup></li> </ul>	Non-English language articles <sup>c</sup>

<sup>a</sup>Pharmacologic treatments listed are FDA-approved for an indication of ADHD with the exception of those marked with an asterisk, which are available within the United States and are FDA-approved but not specifically approved for ADHD.

<sup>b</sup>Systematic reviews and meta-analyses were excluded from direct abstraction; those representing key sources were hand-searched as potential sources of additional citations to consider in the review.

<sup>c</sup>Non-English language articles were excluded due to: (1) the high volume of literature available in English language publications, (2) the focus of our review on applicability to populations in the United States, and (3) the scope of our KQs. Abbreviations: ADHD=attention deficit hyperactivity disorder; ATX=atomoxetine; DEX=dextroamphetamine; CGI=Clinical Global Impressions scale; DSM=*Diagnostic and Statistical Manual of Mental Disorders*; D-TMP=dexamethylphenidate; EEG=electroencephalograph; GIR=Guanfacine immediate release; GXR=guanfacine extended release; IRS=Impairment Rating Scale; KQ=Key Question; LDX=lisdexamfetamine; MAS=mixed amphetamine salts; MPH=methylphenidate; PICOTS=Populations, Interventions, Comparators, Outcomes, Timing, Settings; RCT=randomized controlled trial; WIAT=Wechsler Individual Achievement Test; WJ=Woodcock-Johnson; WRAT=Wide Range Achievement Test

## Study Selection

For citations retrieved from MEDLINE, Embase, PsycINFO, and CDSR, two reviewers used the prespecified inclusion/exclusion criteria to review titles and abstracts for potential relevance to the research questions. Articles included by either reviewer underwent full-text screening. At the full-text screening stage, two independent reviewers were required to agree on a final inclusion/exclusion decision. Disagreements were resolved by a third expert member of the team. Articles meeting eligibility criteria were included for data abstraction. At random intervals during screening, quality checks by senior team members were made to ensure that screening and abstraction were consistent with inclusion/exclusion criteria and abstraction guidelines. All results were tracked using the DistillerSR data synthesis software program (Evidence Partners Inc., Manotick, ON, Canada).

Appendix C provides a list of all articles included for data abstraction. Appendix D provides a list of articles excluded at the full-text screening stage, with reasons for exclusion.

## Data Extraction

The research team created abstraction forms that were programmed into DistillerSR software to collect the data required to evaluate the specified eligibility criteria for inclusion in this review, as well as demographic and other data needed for determining outcomes (intermediate, final, and adverse events outcomes). Particular attention was given to describing the details of the treatment (e.g., pharmacotherapy dosing, methods of behavioral interventions), patient characteristics (e.g., ADHD presentation, comorbidities, age), and study design (e.g., randomized controlled trial [RCT] versus observational) that may be related to outcomes. Comparators were described carefully because treatment standards may have changed during the period covered by the review. The safety outcomes were framed to help identify adverse events, including those from drug therapies and those resulting from misdiagnosis and labeling.

All data abstraction form templates were pilot-tested with a sample of included articles to ensure that all relevant data elements (Appendix B) were captured and that there was consistency and reproducibility between abstractors. Forms were revised as necessary before full abstraction of all included articles. Final abstracted data will be uploaded to AHRQ's Systematic Review Data Repository.<sup>81</sup>

Based on clinical and methodological expertise, a pair of researchers abstracted data from each of the eligible articles, with one researcher abstracting the data and the second over-reading the article and the accompanying abstraction to check for accuracy and completeness. Disagreements were resolved by consensus or by obtaining a third reviewer's opinion if consensus was not reached. To avoid duplication of patient cohorts, we linked related studies.

## Quality Assessment of Individual Studies

We assessed the methodological quality, or risk of bias, for each individual study based on the Cochrane Risk of Bias<sup>82</sup> tool for randomized studies and the Newcastle-Ottawa Scale<sup>83</sup> for observational studies. We supplemented these tools with additional assessment questions, such as use of appropriate analysis, based on recommendations in the AHRQ's Methods Guide.<sup>20</sup> We rated each study as being of good, fair, or poor quality based on its adherence to well-accepted standard methodologies. Table 2 defines these quality ratings, which are presented in the results tables in the Results section as well as the strength of evidence (SOE) tables in the Discussion section of the report.

**Table 2. Definition of quality assessment ratings**

Rating	Definition
<b>Good (low risk of bias)</b>	These studies had the least bias, and the results were considered valid. These studies adhered to the commonly held concepts of high quality, including the following: a clear description of the population, setting, approaches, and comparison groups; appropriate measurement of outcomes; appropriate statistical and analytical methods and reporting; no reporting errors; a low dropout rate; and clear reporting of dropouts.
<b>Fair</b>	These studies were susceptible to some bias, but not enough to invalidate the results. They did not meet all the criteria required for a rating of good quality because they had some deficiencies, but no flaw was likely to cause major bias. The study may have been missing information, making it difficult to assess limitations and potential problems.
<b>Poor (high risk of bias)</b>	These studies had significant flaws that might have invalidated the results. They had serious errors in design, analysis, or reporting; large amounts of missing information; or discrepancies in reporting.

The grading was outcome-specific such that a given study that analyzed its primary outcome well but did an incomplete analysis of a secondary outcome was assigned a different quality grade for each of the two outcomes. Studies of different designs were graded within the context of their respective design. Thus, RCTs were graded as good, fair, or poor, and observational studies were separately graded as good, fair, or poor.

## Data Synthesis

We began by summarizing key features of the included studies for each KQ. To the degree that data were available, we abstracted information on study design; patient characteristics; clinical settings; interventions; and intermediate, final, and adverse event outcomes. We ordered our findings by treatment or diagnostic comparison and then within these comparisons by outcome with long-term final outcomes emphasized. Existing systematic reviews were used to identify potentially eligible studies. Individual studies from previous systematic reviews were not directly synthesized with the included studies if they did not meet our inclusion criteria. We did however compare the findings from our included studies with findings from key systematic reviews.

We reviewed and highlighted studies using a hierarchy-of-evidence approach. The best evidence available was the focus of our synthesis for each KQ. If high quality evidence was not available, we described any lower quality evidence we were able to identify, but we underscored the issues that made it lower quality and the uncertainties in our findings. We assessed and stated whether the inclusion of lower quality studies would change any of our conclusions and performed sensitivity analyses excluding this evidence where appropriate.

We then determined the feasibility of completing quantitative syntheses (i.e., meta-analyses). Feasibility was dependent on the volume of relevant literature (we required 3 appropriate studies to consider meta-analysis), conceptual homogeneity of the studies, and completeness of the reporting of results. When a meta-analysis was appropriate, we used random-effects models to synthesize the available evidence quantitatively. We tested for heterogeneity using graphical displays and test statistics (Q and  $I^2$  statistics), while recognizing that the ability of statistical methods to detect heterogeneity may be limited. We presented summary estimates, standard errors, and confidence intervals. We anticipated that intervention effects may be heterogeneous. We hypothesized that the methodological quality of individual studies, study type, the characteristics of the comparator, and patients' underlying clinical presentation were associated with the intervention effects. When there were sufficient studies, we performed subgroup analyses and/or meta-regression analyses to examine these hypotheses. We performed quantitative and qualitative syntheses separately by study type and discussed their consistency qualitatively. When only qualitative synthesis was possible, this was done through a narrative description of the findings based on reasoned judgement rather than based on statistical inference.

## Strength of the Body of Evidence

We assessed the SOE using the approach described in AHRQ’s Methods Guide.<sup>20, 84</sup> We graded the SOE for each outcome assessed; thus, the SOE for two separate outcomes in a given study may be graded differently. These grades are presented in the SOE tables in the Discussion section of the report. The approach requires assessment of five domains: study limitations (previously named risk of bias), consistency, directness, precision, and reporting bias, which includes publication bias, outcome reporting, and analysis reporting bias (Table 3).<sup>84</sup>

**Table 3. Required domains: Definitions and scores**

Domain	Definition and Elements	Score and Application
Study Limitations	<p>Study limitations is the degree to which the included studies for a given outcome have a high likelihood of adequate protection against bias (i.e., good internal validity), assessed through two main elements:</p> <ul style="list-style-type: none"> <li>• Study design: Whether RCTs or other designs such as nonexperimental or observational studies.</li> <li>• Study conduct. Aggregation of ratings of risk of bias of the individual studies under consideration.</li> </ul>	<p>Score as one of three levels, separately by type of study design:</p> <ul style="list-style-type: none"> <li>• <b>Low</b> level of study limitations</li> <li>• <b>Medium</b> level of study limitations</li> <li>• <b>High</b> level of study limitations</li> </ul>
Directness	<p>Directness relates to (a) whether evidence links interventions directly to a health outcome of specific importance for the review, and (b) for comparative studies, whether the comparisons are based on head-to-head studies. The EPC should specify the comparison and outcome for which the SOE grade applies.</p> <p>Evidence may be indirect in several situations such as:</p> <ul style="list-style-type: none"> <li>• The outcome being graded is considered intermediate (such as laboratory tests) in a review that is focused on clinical health outcomes (such as morbidity, mortality).</li> <li>• Data do not come from head-to-head comparisons but rather from two or more bodies of evidence to compare interventions A and B—e.g., studies of A vs. placebo and B vs. placebo, or studies of A vs. C and B vs. C but not direct comparisons of A vs. B.</li> <li>• Data are available only for proxy respondents (e.g., obtained from family members or nurses) instead of directly from patients for situations in which patients are capable of self-reporting and self-report is more reliable.</li> </ul> <p>Indirectness always implies that more than one body of evidence is required to link interventions to the most important health outcome.</p>	<p>Score as one of two levels:</p> <ul style="list-style-type: none"> <li>• <b>Direct</b></li> <li>• <b>Indirect</b></li> </ul> <p>If the domain score is indirect, EPCs should specify what type of indirectness accounts for the rating.</p>
Consistency	<p>Consistency is the degree to which included studies find either the same direction or similar magnitude of effect. EPCs can assess this through two main elements:</p> <ul style="list-style-type: none"> <li>• Direction of effect: Effect sizes have the same sign (that is, are on the same side of no effect or a minimally important difference [MID])</li> <li>• Magnitude of effect: The range of effect sizes is similar. EPCs may consider the overlap of CIs when making this evaluation.</li> </ul> <p>The importance of direction vs. magnitude of effect will depend on the Key Question and EPC judgments.</p>	<p>Score as one of three levels:</p> <ul style="list-style-type: none"> <li>• <b>Consistent</b></li> <li>• <b>Inconsistent</b></li> <li>• <b>Unknown</b> (e.g., single study)</li> </ul> <p>Single-study evidence bases (including mega-trials) cannot be judged with respect to consistency. In that instance, use “Consistency unknown (single study).”</p>

Domain	Definition and Elements	Score and Application
Precision	<p>Precision is the degree of certainty surrounding an effect estimate with respect to a given outcome, based on the sufficiency of sample size and number of events.</p> <ul style="list-style-type: none"> <li>• A body of evidence will generally be imprecise if the optimal information size (OIS) is not met. OIS refers to the minimum number of patients (and events when assessing dichotomous outcomes) needed for an evidence base to be considered adequately powered.</li> <li>• If EPCs performed a meta-analysis, then EPCs may also consider whether the CI crossed a threshold for an MID.</li> <li>• If a meta-analysis is infeasible or inappropriate, EPCs may consider the narrowness of the range of CIs or the significance level of p values in the individual studies in the evidence base.</li> </ul>	<p>Score as one of two levels:</p> <ul style="list-style-type: none"> <li>• <b>Precise</b></li> <li>• <b>Imprecise</b></li> </ul> <p>A precise estimate is one that would allow users to reach a clinically useful conclusion (e.g., treatment A is more effective than treatment B).</p>
Reporting Bias	<p>Reporting bias results from selectively publishing or reporting research findings based on the favorability of direction or magnitude of effect. It includes:</p> <ul style="list-style-type: none"> <li>• Study publication bias; i.e., nonreporting of the full study.</li> <li>• Selective outcome reporting bias; i.e., nonreporting (or incomplete reporting) of planned outcomes or reporting of unplanned outcomes.</li> <li>• Selective analysis reporting bias, i.e., reporting of one or more favorable analyses for a given outcome while not reporting other, less favorable analyses.</li> </ul> <p>Assessment of reporting bias for individual studies depends on many factors—e.g. availability of study protocols, unpublished study documents, and patient-level data. Detecting such bias is likely with access to all relevant documentation and data pertaining to a journal publication, but such access is rarely available.</p> <p>Because methods to detect reporting bias in observational studies are less certain, this guidance does not require EPCs to assess it for such studies.</p>	<p>Score as one of two levels:</p> <ul style="list-style-type: none"> <li>• <b>Suspected</b></li> <li>• <b>Undetected</b></li> </ul> <p>Reporting bias is suspected when:</p> <ul style="list-style-type: none"> <li>• Testing for funnel plot asymmetry demonstrates a substantial likelihood of bias,</li> </ul> <p>And/or</p> <ul style="list-style-type: none"> <li>• A qualitative assessment suggests the likelihood of missing studies, analyses, or outcomes data that may alter the conclusions from the reported evidence.</li> </ul> <p>Undetected reporting bias includes all alternative scenarios.</p>

CI=confidence interval; EPC=Evidence-based Practice Center; MID=minimally important difference; OIS=optimal information size; RCT=randomized controlled trial

Additional domains were used when appropriate (most relevant to observational studies) and included coherence, dose-response association, impact of plausible residual confounders, and strength of association (magnitude of effect). These domains were considered qualitatively, and a summary rating of high, moderate, or low SOE was assigned for each outcome after discussion by two reviewers. In some cases, high, moderate, or low ratings were impossible or imprudent to make, for example, when no evidence is available or when evidence on the outcome was too weak, sparse, or inconsistent to permit any conclusion to be drawn. In these situations, a grade of “insufficient” was assigned. Table 4 defines the four-level grading scale.



**Table 4. Definition of strength of evidence grades**

<b>Rating</b>	<b>Definition</b>
<b>High</b>	We are very confident that the estimate of effect lies close to the true effect for this outcome. The body of evidence has few or no deficiencies. We believe that the findings are stable, i.e., another study would not change the conclusions.
<b>Moderate</b>	We are moderately confident that the estimate of effect lies close to the true effect for this outcome. The body of evidence has some deficiencies. We believe that the findings are likely to be stable, but some doubt remains.
<b>Low</b>	We have limited confidence that the estimate of effect lies close to the true effect for this outcome. The body of evidence has major or numerous deficiencies (or both). We believe that additional evidence is needed before concluding either that the findings are stable or that the estimate of effect is close to the true effect.
<b>Insufficient</b>	We have no evidence, we are unable to estimate an effect, or we have no confidence in the estimate of effect for this outcome. No evidence is available or the body of evidence has unacceptable deficiencies, precluding reaching a conclusion.

## **Applicability**

We assessed applicability across our KQs using the method described in AHRQ’s Methods Guide.<sup>20, 85</sup> In brief, this method uses the PICOTS format as a way to organize information relevant to applicability. The most important issue with respect to applicability is whether the outcomes are different across studies that recruit different populations (e.g., age groups, ADHD presentations, exclusions for comorbidities) or use different methods to implement the interventions of interest; that is, important characteristics are those that affect baseline (control group) rates of events, intervention group rates of events, or both. We used a checklist to guide assessment of the applicability to clinical practice, paying special attention to study eligibility criteria, demographic features of the enrolled population in comparison with the target population, characteristics of the intervention used in comparison with care models currently in use, the possibility of diagnostic tool or treatment intervention learning curves, and clinical relevance and timing of the outcome measures (Appendix B). We summarized issues of applicability qualitatively.

## **Peer Review and Public Commentary**

Experts in the fields of pediatrics and child development, child psychiatry and psychology, pharmacology, and public health were invited to provide external peer review of the draft report. AHRQ, an associate editor, and members of the Technical Expert Panel were also given the opportunity to provide comments. In addition, the draft report was posted on the AHRQ EHC Web site for public comment from October 17, 2016, to November 14, 2016. We have addressed all reviewer comments, revising the text as appropriate, and have documented our responses in a disposition of comments report that will be made available 3 months after the Agency posts the final systematic review on the EHC Web site. A list of peer reviewers submitting comments on the draft report is provided in the front matter of this report.

# Results

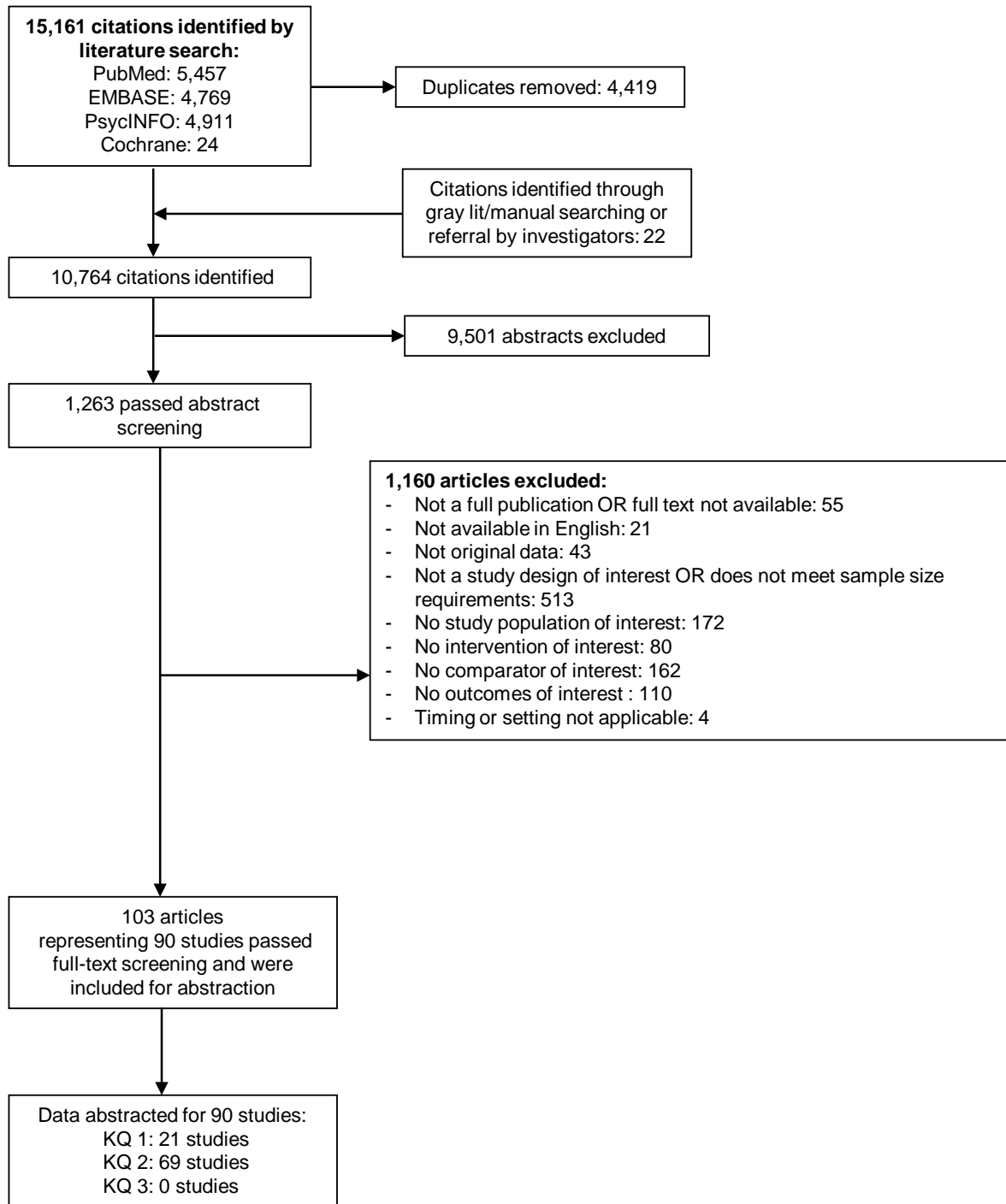
In what follows, we begin by describing the results of our literature searches. We then provide a brief overview description of the included studies. The remainder of the chapter is organized by Key Question (KQ). Under each of the three KQs, we begin by listing the key points of the findings, followed by a brief description of included studies, a detailed synthesis of the evidence, and a final discussion of the results in sections on “Findings in Relation to What Is Known” to provide context for the reader. Within KQ 2, the detailed syntheses are organized first by treatment comparison and then by outcome. We conducted quantitative syntheses where possible, as described in the Methods chapter. For a list of the abbreviations, please refer to the end of the report.

## Results of Literature Searches

Figure 2 depicts the flow of articles through the literature search and screening process. Searches of PubMed<sup>®</sup>, Embase<sup>®</sup>, PsycINFO<sup>®</sup>, and the Cochrane Database of Systematic Reviews yielded 10,742 unique citations. Manual searching of gray literature databases and bibliographies of key articles or referral by investigators identified 21 additional citations, for a total of 10,763 citations. After applying inclusion/exclusion criteria at the title-and-abstract level, 1,263 full-text articles were retrieved and screened. Of these, 1,160 were excluded at the full-text screening stage, leaving 103 articles for data abstraction. These 103 articles described 90 unique studies. The relationship of studies to the review questions is as follows: 21 studies relevant to KQ 1, 69 studies relevant to KQ 2, 0 studies relevant to KQ 3.

Appendix C provides a detailed listing of included articles. Appendix D provides a complete list of articles excluded at the full-text screening stage, with reasons for exclusion. Appendix E provides a “study key” table listing the primary and companion publications for the 90 included studies.

**Figure 2. Literature flow diagram**



KQ=Key Question

## Description of Included Studies: Overview

Overall, we included 103 articles representing 90 studies: 21 studies were relevant to KQ 1, 69 studies to KQ 2, and 0 studies to KQ 3. Studies were conducted wholly or partly in continental Europe or the United Kingdom (UK) (35 studies, 38%), the United States or Canada (23 studies, 25%), the Middle East (13 studies, 14%), Asia (12 studies, 13%), Latin America (3 studies, 3%), Australia/New Zealand (NZ) (3 studies, 3%), both in the United States and UK/Europe (2 studies, 2%), both in UK/Europe and Australia/NZ (1 study, 1%), and location not reported (1 study, 1%). Further details on the studies included for each KQ are provided in the relevant results sections below and in Appendixes F and G.

Note that our 90 included studies focused on individuals of varying age. To help the reader, we have categorized the included articles as (1) those that targeted children 6 years of age and under, (2) those that targeted children aged 7 through 17, and (3) those that included children of all ages through 17 years. Table 5 lists all included studies by these categorizations, and then throughout the results tables we indicate which age categories the specific studies addressed.

**Table 5. Ages of individuals represented in included ADHD studies**

KQ	Age Category of Included Participants	Studies
KQ 1	Ages 6 and under	Bunte, 2013 <sup>86</sup> Thorell, 2010 <sup>87</sup>
	Ages 7 through 17	Berger, 2010 <sup>88</sup> Bloch, 2012 <sup>89</sup> dosReis, 2010 <sup>90</sup> Ferrin, 2012 <sup>91</sup> Kim, 2015 <sup>92</sup> Kim, 2015 <sup>93</sup> Klenberg, 2010 <sup>94</sup> Liechti, 2013 <sup>95</sup> Markovska-Simoska, 2016 <sup>96</sup> Martin-Martinez, 2012 <sup>97</sup> Ogrim, 2012 <sup>98</sup> Ohan, 2011 <sup>99</sup> Park, 2016 <sup>100</sup> Soliva, 2010 <sup>101</sup> Zelnik, 2012 <sup>102</sup>
	All ages through 17	Carballo, 2014 <sup>103</sup> Castro-Cabrera, 2010 <sup>104</sup> Caudal, 2011 <sup>105</sup> Gonzalez, 2013 <sup>106</sup>
KQ 2	Ages 6 and under	Abikoff, 2015 <sup>107</sup>

KQ	Age Category of Included Participants	Studies
	Ages 7 through 17	Abikoff, 2013 <sup>108</sup> Anand, 2016 <sup>109</sup> Arcieri, 2012 <sup>110</sup> Arnold, 2011 <sup>111</sup> Bai, 2015 <sup>112</sup> Banaschewski, 2014 <sup>113</sup> Barragan, 2014 <sup>114</sup> Beck, 2010 <sup>115</sup> Bink, 2015 <sup>116</sup> Boyer, 2015 <sup>117</sup> Cetin, 2015 <sup>118</sup> Chacko, 2014 <sup>119</sup> Clemow, 2015 <sup>120</sup> Cortese, 2015 <sup>121</sup> DAVIS, 2015 <sup>122</sup> Didoni, 2011 <sup>123</sup> Duric, 2012 <sup>124</sup> Dutta, 2012 <sup>125</sup> Egeland, 2013 <sup>126</sup> Ercan, 2014 <sup>127</sup> Evans, 2016 <sup>128</sup> Ferrin, 2016 <sup>129</sup> Findling, 2010 <sup>130</sup> Gelade, 2016 <sup>131</sup> Gevensleben, 2009 <sup>132</sup> Gustafsson, 2010 <sup>133</sup> Hahn-Markowitz, 2016 <sup>134</sup> Hammerness, 2012 <sup>135</sup> Hariri, 2012 <sup>136</sup> Hong, 2015 <sup>137</sup> Huang, 2015 <sup>138</sup> Johnson, 2009 <sup>139</sup> Katz, 2010 <sup>140</sup> Li, 2011 <sup>141</sup> Manor, 2012 <sup>142</sup> Milte, 2012 <sup>143</sup> Mohammadpour, 2016 <sup>144</sup> Mohammadi, 2012 <sup>145</sup> Molina, 2009 <sup>146</sup> Moreno-Garcia, 2015 <sup>147</sup> Newcorn, 2016 <sup>148</sup> Oberai, 2013 <sup>149</sup> Ostberg, 2012 <sup>150</sup> Panei, 2010 <sup>151</sup> Pfiffner, 2014 <sup>152</sup> Power, 2012 <sup>153</sup> Raz, 2009 <sup>154</sup> Salehi, 2010 <sup>155</sup> Sallee, 2009 <sup>156</sup> Sayer, 2016 <sup>157</sup> Shakibaei, 2015 <sup>158</sup> Sibley, 2016 <sup>159</sup> Steiner, 2014 <sup>160</sup> Storebo, 2012 <sup>161</sup> Trzepacz, 2011 <sup>162</sup> van der Donk, 2015 <sup>163</sup> Vidal, 2015 <sup>164</sup> Widenhorn-Muller, 2014 <sup>165</sup> Zhang, 2010 <sup>166</sup>

KQ	Age Category of Included Participants	Studies
	All ages through 17	Chacko, 2009 <sup>167</sup> Ferrin, 2014 <sup>168</sup> Hiscock, 2015 <sup>169</sup> Mautone, 2012 <sup>170</sup> Myers, 2015 <sup>171</sup> Pelsser, 2011 <sup>172</sup> Tobaiqy, 2011 <sup>173</sup> van Dongen-Boomsma, 2014 <sup>174</sup> Webster-Stratton, 2011 <sup>175</sup>

ADHD=attention deficit hyperactivity disorder; KQ=Key Question

We searched the ClinicalTrials.gov study registry as a mechanism for ascertaining publication bias by identifying studies that have been completed but are as yet unpublished. We acknowledge that this is not an exhaustive strategy, as several other registries also exist with differing geographical focus and varying degrees of overlap in their trial listings; however, in the opinion of the investigators, the widely used, U.S.-based ClinicalTrials.gov registry provided the most relevant information to the populations and interventions of interest in this review. Our search yielded 348 records of completed trials in the ClinicalTrials.gov registry. Manual review identified 51 of the records from ClinicalTrials.gov as potentially relevant to this review. Of those 51 records, we were not able to identify publications for 7 studies that had expected completion dates 3 years or more prior to our search. Of the 43 studies for which we could identify publications, all were considered potentially relevant to KQ 2. However, all publications had been previously identified in our PubMed, Embase, PsycINFO, and the Cochrane Database of Systematic Reviews searches. No novel publications were identified from our clinical trial registry searches.

Comparisons assessed in the 7 studies that did not have publications were pharmacologic versus pharmacologic (3 studies<sup>176-178</sup>), pharmacologic versus placebo (4 studies<sup>176, 179-181</sup>), and nonpharmacologic versus placebo (1 study<sup>182</sup>). One study contained three different arms evaluating both pharmacologic versus pharmacologic and pharmacologic versus placebo comparisons. We did identify trial results posted online for one study comparing lisdexamfetamine dimesylate versus methylphenidate hydrochloride versus placebo, and we also identified a press release for another study comparing a d-amphetamine transdermal system versus a placebo patch, but no corresponding peer-reviewed articles were found. These 7 studies if completed would add 1,357 patients to our analysis. The included studies in KQ 2 represent evidence from 14,737 patients and so although this is a substantial evidence base the inclusion of an additional 1,357 patients would increase by approximately 9 percent. Given the range of interventions studied and that 4 of them included placebo as a comparator of interest, we do not believe that the 7 “missing” trials are likely to have had a meaningful impact on our review’s results. Because of the relatively low proportion of unpublished studies identified through our ClinicalTrials.gov registry analysis, we do not believe these findings indicate significant publication bias in the evidence base that would impact our overall conclusions.

## **Key Question 1: ADHD Diagnosis**

KQ 1 examined the comparative diagnostic accuracy of approaches that can be used in the primary care practice setting or specialty clinic to initially diagnose attention deficit hyperactivity disorder (ADHD). KQ 1a focuses on the comparative diagnostic accuracy of approaches for diagnosing ADHD among individuals younger than 7 years of age. KQ 1b examines the comparative diagnostic accuracy of electroencephalography (EEG), imaging, or assessment of executive function that can be used to diagnose ADHD among individuals aged 7 through 17. KQ 1c focuses on how the comparative diagnostic accuracy of these approaches varies by clinical setting or patient subgroup including age, sex, or other risk factors associated with ADHD. KQ 1d examines the adverse effects associated with being labeled correctly or incorrectly as having ADHD. This KQ was not addressed in the prior reports.

To help the reader, Table 6 summarizes the available tools for individuals across the age spectrum and provides details on the domains assessed, the methods used for assessment, scoring methods, and interpretation. Tools are listed within categories of interviews, rating scales, and continuous performance tests.

**Table 6. Description of available tools for ADHD assessment**

<b>Category</b>	<b>Tool</b>	<b>Domains Assessed</b>	<b>Method</b>	<b>Scoring</b>	<b>Interpretation</b>
<b>Interviews</b>					
	Standard clinical interview	ADHD diagnosis according to DSM-IV or DSM-5 criteria	Parent and/or child interview	NA	Diagnostic interview that determines whether an individual has ADHD.
	K-SADS (Kiddie SADS)	ADHD diagnosis according to DSM-IV or DSM-5 criteria	Semi-structured diagnostic interview with parent and child	Items rated on a 3-point scale for severity (not present, subthreshold, and threshold—which combines both moderate and severe presentations). Parent, child, and summary ratings are made.	A diagnostic algorithm that includes all DSM criteria for ADHD. Results of the semi-structured interview indicate whether the individual has ADHD.
	DISC/DISC IV (Diagnostic Interview Schedule for Children)	ADHD diagnosis according to DSM-IV criteria	Structured diagnostic interview with parent and/or child	Items rated as yes, no, somewhat or sometimes	A diagnostic algorithm that includes the DSM criteria for ADHD. Results of the diagnostic interview indicate whether the individual has ADHD.
<b>Rating Scales</b>					



Category	Tool	Domains Assessed	Method	Scoring	Interpretation
	NICHQ (National Institute for Children's Health Quality) Vanderbilt Assessment Scale	<ul style="list-style-type: none"> <li>• ADHD Predominantly Inattentive</li> <li>• ADHD Predominantly Hyperactive/Impulsive</li> <li>• ADHD Combined</li> <li>• Oppositional Defiant Disorder</li> <li>• Conduct Disorder</li> <li>• Anxiety/Depression</li> </ul>	<ul style="list-style-type: none"> <li>• Parent questionnaire</li> <li>• Teacher questionnaire</li> </ul>	<p><i>Symptom Questions</i></p> <ul style="list-style-type: none"> <li>• Rated based on frequency</li> <li>• 0–3 scale (never, occasionally, often, very often)</li> <li>• Number of symptoms endorsed at a 2 (often) or 3 (very often) is summed for each domain</li> </ul> <p><i>Performance Questions</i></p> <ul style="list-style-type: none"> <li>• Rated based on problem severity</li> <li>• 0–5 scale (excellent, above average, average, somewhat of a problem, problematic)</li> </ul>	<ul style="list-style-type: none"> <li>• A positive screen indicates the need for further evaluation</li> <li>• The screening measure is positive if both of the following are met for a given domain:               <ul style="list-style-type: none"> <li>- Specific number of Symptom Questions are rated 2 or 3</li> <li>- At least one Performance Question is rated 4 or 5</li> </ul> </li> </ul>

Category	Tool	Domains Assessed	Method	Scoring	Interpretation
	Conners Rating Scales <ul style="list-style-type: none"> <li>• CPRS</li> <li>• CTRS</li> <li>• CRS</li> <li>• Conners 3</li> </ul>	Note: Subscale names vary slightly between versions of the Conners Rating Scales, but include:  <i>ADHD-related scales</i> <ul style="list-style-type: none"> <li>• Inattention</li> <li>• Hyperactivity/Impulsivity</li> <li>• Learning Problems</li> <li>• Executive Functioning</li> <li>• DSM Symptoms Scales</li> <li>• ADHD Index</li> <li>• Conners Global Index</li> </ul> <i>Behavioral/emotional scales</i> <ul style="list-style-type: none"> <li>• Defiance/Aggression</li> <li>• Peer Relations/Social Problems</li> <li>• Family Relations</li> <li>• Oppositional Defiant Disorder</li> <li>• Conduct Disorder</li> <li>• Cognitive Problems</li> <li>• Anxious-Shy</li> <li>• Perfectionism</li> <li>• Psychosomatic</li> </ul>	<ul style="list-style-type: none"> <li>• Parent questionnaire</li> <li>• Teacher questionnaire</li> <li>• Adolescent questionnaire</li> </ul>	<ul style="list-style-type: none"> <li>• Rated based on how true the question is for the child</li> <li>• 0–3 (not true at all, just a little true, pretty much true, very much true).</li> </ul>	<ul style="list-style-type: none"> <li>• Raw scores for each scale are converted to T scores (mean=50, SD=10) based on a normative sample</li> <li>• Higher scores indicated increased clinical concern</li> <li>• Interpretation guidelines indicate that scores <math>\geq 60</math> are above average</li> </ul>

Category	Tool	Domains Assessed	Method	Scoring	Interpretation
	SNAP-IV (Swanson, Nolan and Pelham Revision)	<ul style="list-style-type: none"> <li>ADHD Predominantly Inattentive</li> <li>ADHD Predominantly Hyperactive/Impulsive</li> <li>ADHD Combined</li> </ul>	<ul style="list-style-type: none"> <li>Parent questionnaire</li> <li>Teacher questionnaire</li> </ul>	<ul style="list-style-type: none"> <li>Rated based on frequency</li> <li>0–3 scale (not at all, just a little, quite a bit, very much)</li> </ul>	<ul style="list-style-type: none"> <li>Scores can be interpreted in two different ways:               <ol style="list-style-type: none"> <li>Sum of items for each of the three subscales, with high score indicating more symptoms.</li> <li>Average rating per item for each of the three subscales. This rating is compared to the parent/teacher 5% cut off and a higher score indicates more symptoms.</li> </ol> </li> </ul>
	DBDRS (Disruptive Behavior Disorder Rating Scale )	<ul style="list-style-type: none"> <li>ADHD Predominantly Inattentive</li> <li>ADHD Predominantly Hyperactive/Impulsive</li> <li>ADHD Combined</li> <li>Oppositional Defiant Disorder</li> <li>Conduct Disorder</li> </ul>	<ul style="list-style-type: none"> <li>Parent questionnaire</li> <li>Teacher questionnaire</li> </ul>	<ul style="list-style-type: none"> <li>Rated based on frequency</li> <li>4 point scale (not at all, just a little, pretty much, and very much)</li> </ul>	<ul style="list-style-type: none"> <li>Scales scores are computed by summing the items in each domain.</li> <li>Scores were considered to be in the clinical range for ADHD if they are between the 95th to 100th percentile.</li> </ul>
	ADHD-RS (ADHD Rating Scale)	<ul style="list-style-type: none"> <li>ADHD Predominantly Inattentive</li> <li>ADHD Predominantly Hyperactive/Impulsive</li> <li>ADHD Combined</li> </ul>	<ul style="list-style-type: none"> <li>Parent questionnaire</li> <li>Teacher questionnaire</li> </ul>	<ul style="list-style-type: none"> <li>Rated based on frequency</li> <li>0–3 (does not experience the symptom at all ... symptom very often)</li> </ul>	<ul style="list-style-type: none"> <li>Scores are calculated by summing the items in each domain and the total items.</li> </ul>

Category	Tool	Domains Assessed	Method	Scoring	Interpretation
	SDQ (Strengths and Difficulties Questionnaire)	<ul style="list-style-type: none"> <li>Emotional symptoms</li> <li>Conduct problems</li> <li>Hyperactivity/inattention</li> <li>Peer relationship problems</li> <li>Prosocial behavior</li> <li>Total difficulties</li> </ul>	<ul style="list-style-type: none"> <li>Parent questionnaire</li> <li>Teacher questionnaire</li> </ul>	<ul style="list-style-type: none"> <li>Rated based on how true the question is for the child</li> <li>0–2 (not true, somewhat true, certainly true)</li> <li>Some items are reverse coded.</li> </ul>	<ul style="list-style-type: none"> <li>Higher scores indicate more concerns in a given area.</li> <li>Raw scores can be compared to cut-points derived from a typical population.</li> </ul>
	BRIEF (Behavior Rating Inventory of Executive Function)	<ul style="list-style-type: none"> <li>Behavioral Regulation Index (three scales)</li> <li>Metacognition Index (five scales)</li> <li>Global Executive Composite</li> </ul>	<ul style="list-style-type: none"> <li>Parent questionnaire</li> <li>Teacher questionnaire</li> </ul>	<ul style="list-style-type: none"> <li>Rated based on frequency</li> <li>3-point scale (never, sometimes often)</li> </ul>	<ul style="list-style-type: none"> <li>Raw scores are converted to T scores (mean=50; SD=10) and percentiles based on a normative sample.</li> <li>Higher scores indicate more problems relative age-matched peers.</li> </ul>
	CHEXI (Childhood Executive Functioning Inventory)	<ul style="list-style-type: none"> <li>Inhibition (inhibition and regulation)</li> <li>Working Memory (working memory and planning)</li> </ul>	<ul style="list-style-type: none"> <li>Parent questionnaire</li> <li>Teacher questionnaire</li> </ul>	<ul style="list-style-type: none"> <li>Rated based on how true the question is for the child</li> <li>0-5 point (definitely not true, not true, partially true, true, definitely true)</li> </ul>	<ul style="list-style-type: none"> <li>Subscale scores are calculated by computing the mean score for items in each scale.</li> <li>Higher scores are indicative of more severe symptoms.</li> </ul>
	ATTEX (Attention and Executive Function Rating Inventory)	<ul style="list-style-type: none"> <li>Distractibility</li> <li>Impulsivity</li> <li>Motor hyperactivity</li> <li>Directing attention</li> <li>Sustaining attention</li> <li>Shifting attention</li> <li>Initiative</li> <li>Planning</li> <li>Execution of action</li> <li>Evaluation</li> <li>Total score</li> </ul>	<ul style="list-style-type: none"> <li>Teacher questionnaire</li> </ul>	<ul style="list-style-type: none"> <li>Rated based on severity</li> <li>3-point scale (not a problem, sometimes a problem, often a problem)</li> </ul>	<ul style="list-style-type: none"> <li>Subscale scores are calculated by computing the mean score for items in each scale.</li> <li>A Total Score is calculated by summing all of the scale scores.</li> <li>Higher scores indicate greater severity (i.e., the behavior is more often a problem).</li> </ul>
<b>Continuous Performance Tests</b>					

Category	Tool	Domains Assessed	Method	Scoring	Interpretation
	Conners CPT (Continuous Performance Test)	<ul style="list-style-type: none"> <li>• Attention</li> <li>• Impulsivity</li> <li>• Sustained Attention</li> <li>• Vigilance</li> </ul>	<ul style="list-style-type: none"> <li>• Computerized test</li> </ul>	<ul style="list-style-type: none"> <li>• Responses to a target and nontarget</li> </ul>	<ul style="list-style-type: none"> <li>• Raw and standardized scores are calculated using an algorithm for each domain.</li> <li>• T scores and percentiles are provided, with higher scores indicating more problems in a given area.</li> </ul>
	IVA CPT (Integrated Visual and Auditory Continuous Performance Test)	<ul style="list-style-type: none"> <li>• Auditory Response Control</li> <li>• Visual Response Control</li> <li>• Auditory Attention</li> <li>• Visual Attention</li> <li>• Auditory Sustained Attention</li> <li>• Visual sustained Attention</li> </ul>	<ul style="list-style-type: none"> <li>• Computerized test</li> </ul>	<ul style="list-style-type: none"> <li>• Responses to the target (visual or auditory) and to the nontarget (visual or auditory)</li> </ul>	<ul style="list-style-type: none"> <li>• Visual and Auditory domain scores are calculated for a total of 12 quotients.</li> <li>• Omission and commission scores are generated, with more omission errors indicating greater distraction and more commission errors indicating greater impulsivity.</li> <li>• Hyperactivity-impulsiveness and attention deficit scales are calculated from the omission and commission errors, each comprising 3 visual and 3 auditory quotients.</li> </ul>
	TOVA (Test of Variables of Attention)	<ul style="list-style-type: none"> <li>• Attention</li> <li>• Inhibitory control</li> </ul>	<ul style="list-style-type: none"> <li>• Computerized test</li> </ul>	<ul style="list-style-type: none"> <li>• Responses to the target (correct) and responses to the nontarget (incorrect)</li> </ul>	<ul style="list-style-type: none"> <li>• Errors of omission (not responding to the target) yield a measure of inattention.</li> <li>• Errors of commission (responding to a nontarget) yield a measure of impulsivity.</li> </ul>

Category	Tool	Domains Assessed	Method	Scoring	Interpretation
	CANTAB (Cambridge Neuro-psychological Test Automated Battery) <sup>a</sup>	<ul style="list-style-type: none"> <li>• General memory and learning, with subtests including:               <ul style="list-style-type: none"> <li>- Working memory</li> <li>- Executive functioning</li> <li>- Visual memory</li> <li>- Attention</li> <li>- Reaction time</li> <li>- Decision making</li> <li>- Response control</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Computerized test</li> </ul>	<ul style="list-style-type: none"> <li>• Scoring varies by domain and includes scores such as percent correct, number of errors, time to complete, response latency</li> </ul>	<ul style="list-style-type: none"> <li>• Interpretation varies depending on the outcome measures (e.g., higher number of errors indicates more impairment; lower response latency indicates less impairment).</li> </ul>

<sup>a</sup> CANTAB description from personal communication with Cambridge Cognition Ltd. (January 2017).

Abbreviations: ADHD=attention deficit hyperactivity disorder; CPRS=Conners Parent Rating Scale; CTRS=Conners Teacher Rating Scale; DSM=Diagnostic and Statistical Manual of Mental Disorders

## Description of Included Studies

For KQ 1, we identified 22 articles<sup>86-106, 183</sup> representing 21 studies, 19 of which examined the comparative diagnostic accuracy of approaches used to diagnose ADHD, and 2 of which evaluated adverse effects of being labeled with ADHD. One study was described in more than one publication; Appendix E provides a key to primary and companion articles. Primary and companion papers are cited together in the text and tables that follow.

All 19 studies examining diagnostic accuracy were observational in design and represented a total of 4,339 enrolled patients. The 2 studies examining the adverse effects of ADHD labeling were observational in design and represented a total of 104 enrolled patients. Details of the study characteristics of the included studies are in Appendix F. Appendix G provides an overview of the included studies.

## Key Points

- Among executive function tests, Attention and Executive Function Rating Inventory (ATTEX) and Childhood Executive Function Inventory (CHEXI) performed better than Cambridge Neuropsychological Testing Automated Battery (CANTAB) for individuals aged 7–17 (strength of evidence [SOE]=low).
- This systematic evidence review identified limited studies with variable and inconsistent findings for diagnostic accuracy for all other diagnostics tools evaluated, including imagining and EEG-based tests (SOE=insufficient).
- Insufficient evidence was found regarding labeling or stigma of children with ADHD.

## Detailed Synthesis—Diagnosis

### Diagnostic Comparative Studies

Across the 19 diagnostic comparative studies, 14 different assessment tools were evaluated, including electroencephalography (EEG), integrated visual and auditory computerized performance test (IVA-CPT), continuous performance function tests (CPFT), event-related potentials (ERP), magnetic resonance imaging (MRI) of caudate body volume, Test of Variables of Attention (TOVA), CANTAB, ATTEX, CHEXI, electro interstitial scans (EIS), Disruptive Behavior-Diagnostic Observation Schedule (DB-DOS), neurological subtle signs (NSS), Kiddie-Disruptive Behavior Disorder Schedule (K-DBDS), and Strengths and Difficulties Questionnaire (SDQ). The diagnostic accuracy of the tools was measured primarily by receiver operator characteristics (ROC) for overall accuracy and area under the curve (AUC), from which sensitivity, specificity, false positives, and false negatives could be derived as shown in Table H-1, which summarizes findings from studies with subjects aged 6 years and younger, and Table H-2, which summarizes findings from studies with older children and adolescents, in Appendix H. The heterogeneity in methods and outcomes of these studies prevented quantitative meta-analysis.

Among the imaging studies, EEG was variable in its accuracy, ranging from 46 percent to 87 percent in five studies.<sup>92, 93, 96, 98, 106</sup> ERP evaluations yielded consistently higher accuracy scores when conducted independently (91%, the highest imaging accuracy<sup>104</sup>) and in combination with EEG (73%<sup>95</sup>). MRI scans of caudate body volume also had accuracy scores of 84%.<sup>101</sup> IVA-CPT had 75 percent to 82 percent based on outcomes assessed with omission errors and 68 percent to

85 percent based on outcomes assessed with omission errors.<sup>92, 93, 98</sup> Other CPTs, such as the TOVA, demonstrated limitations in their ability to correctly identify non-ADHD patients<sup>88, 89, 102</sup> and subtypes such as inattentive and hyperactive/impulsive.<sup>100</sup> Among the executive function tests, ATTEX<sup>94</sup> and CHEXI<sup>87</sup> performed better with overall accuracy rates of 91 percent to 93 percent, respectively, than the CANTAB,<sup>89</sup> which had low specificity (low SOE). Biometric devices such as EIS and Actigraphy had high sensitivity (80% to 97%) and specificity (84% to 98%).<sup>97, 105</sup> Additional approaches to diagnosing ADHD with promising clinical utility included neurological examinations for subtle signs of abnormal functioning (overall accuracy 84%), observational assessments of disruptive behaviors (92% AUC, 87% sensitivity, 79% specificity), and interviews using the K-DBDS (98% AUC, 77% sensitivity, 98% specificity).<sup>86, 91, 183</sup>

Few studies examined whether there are differences in accuracy based on age,<sup>91</sup> sex,<sup>94</sup> and ADHD presentation.<sup>86, 94, 100, 103, 183</sup> Also, there were no studies that compared how approaches to diagnosing ADHD differed by clinical settings. Collectively, a variety of approaches were tested in primary care and specialty clinics. Approaches in primary care clinics (five studies) included imaging, computerized function tests, executive function tests, and standardized questionnaires. Similarly, studies conducted in specialty clinics (13 studies) investigated these same approaches as well as biometric tools and observational assessments.

### **ADHD Labeling/Stigma Studies**

Only two studies evaluated the adverse effects associated with being labeled correctly or incorrectly as having ADHD.<sup>90, 99</sup> These good-quality studies did not address the negative experiences or outcomes of the children with ADHD but rather teachers' reactions and parents' concerns regarding ADHD labels for affected youth. Insufficient evidence was found regarding labeling or stigma. This KQ was not addressed with the 2011 review.

### **Strength of Evidence—Diagnosis**

Tables 7 and 8 summarize the SOE for the KQ 1 findings based on this report's included studies. The studies evaluated diverse tools and the heterogeneity in their findings and precision led to insufficient SOE for most tools.



**Table 7. Strength of evidence for major outcomes—diagnosis**

<b>Diagnostic Tool</b>	<b>No. Studies/ Design (N Patients)</b>	<b>Study Limitations</b>	<b>Directness</b>	<b>Consistency</b>	<b>Precision</b>	<b>Reporting Bias</b>	<b>Findings</b>
EEG and Imaging	5 Obs (259)	Medium	Direct	Inconsistent	Imprecise	None	EEG demonstrated variability in five studies. <sup>95, 101, 104, 106 96</sup>
Insufficient	7–17, all through 17						
EEG, Imaging, and CPT	3 Obs (355)	Medium	Direct	Inconsistent	Imprecise	None	EEG demonstrated variability in four studies.. <sup>92, 93, 98</sup>
Insufficient	7–17						
CPT	3 Obs (402)	Medium	Direct	Inconsistent	Imprecise	None	CPT demonstrated variability in 3 observational studies. <sup>88, 100, 102</sup>
Insufficient	7–17						
CPT and executive function	1 Obs (34)	Medium	Direct	NA	Imprecise	None	SOE was insufficient because of the sample size of the single observational study available. <sup>89</sup>
Insufficient	7–17						
Executive function	2 Obs (961)	Medium	Direct	Consistent	Precise	None	Among executive function tests, ATTEX and CHEXI performed better than the CANTAB. <sup>87, 94</sup>
Low	6 and under, 7–17						
Biometric Devices	2 Obs (175)	Medium	Direct	Inconsistent	Imprecise	None	Biometric devices for EIS and actigraphy demonstrated variability in the 2 studies. <sup>97, 105</sup>
Insufficient	7–17, all through 17						
Observational assessment	2 Obs (1,436)	Medium	Direct	Inconsistent	Imprecise	None	SOE was insufficient because of variations across the 2 available observational studies. <sup>91, 183</sup>
Insufficient	6 and under, 7–17						
Standardized questionnaire	2 Obs (774)	Medium	Direct	Inconsistent	Imprecise	None	SOE was insufficient because of variations across the 2 available observational studies. <sup>86, 103</sup>
Insufficient	6 and under, all through 17						

Abbreviations: ATTEX=Attention and Executive Function Rating Inventory; CANTAB=Cambridge Neuropsychological Testing Automated Battery; CHEXI=Childhood Executive Function Inventory; CPT=continuous performance test; EEG=electroencephalography; NA=not applicable; Obs=observational; SOE=strength of evidence

**Table 8. Strength of evidence for major outcomes—labeling/stigma**

<b>Outcome</b>	<b>No. Studies/ Design (N Patients)</b>	<b>Study Age Categories</b>	<b>Study Limitations</b>	<b>Directness</b>	<b>Consistency</b>	<b>Precision</b>	<b>Reporting Bias</b>	<b>Findings</b>
Labeling/Stigma	2 Obs (104)	7–17	Low	Indirect	Consistent	Imprecise	None	SOE was insufficient because the studies did not address the negative experiences or outcomes of the children with ADHD but rather teachers' reactions and parents' concerns regarding ADHD labels for affected youth. <sup>90, 99</sup>

Abbreviations: ADHD=attention deficit hyperactivity disorder; Obs=Observational; SOE=strength of evidence

## Key Question 2: ADHD Treatment

KQ 2 examined the comparative safety and effectiveness of pharmacologic and nonpharmacologic treatments for improving outcomes associated with ADHD. KQ 2 also evaluates how these outcomes vary by presentation (inattentive, hyperactive/impulsive, and combined) or other comorbid conditions, and assesses the risk of diversion of pharmacologic treatment. For the purposes of this review, supplements were classified as nonpharmacologic treatments because they are not regulated by the FDA.

### Description of Included Studies

For KQ 2, we identified 81 articles<sup>107-175, 184-195</sup> representing 69 studies that examined the comparative safety and effectiveness of pharmacologic and nonpharmacologic treatments for the treatment of ADHD. Eleven studies were described in more than one publication; Appendix E provides a key to primary and companion articles. Primary and companion papers are cited together in the text and tables that follow.

Of the 69 included studies, 10 were observational, representing a total of 6,523 enrolled patients.<sup>110, 115, 120, 121, 123, 127, 135, 151, 166, 173</sup> The 59 remaining studies were randomized controlled trials (RCTs), representing a total of 8,346 enrolled patients. Details of the study characteristics of the included studies are in Appendix F. Appendix G provides an overview of the included studies.

The next sections are organized by treatment comparisons as follows:

1. Pharmacologic versus placebo/usual care
2. Pharmacologic versus pharmacologic
3. Pharmacologic versus nonpharmacologic
4. Nonpharmacologic versus nonpharmacologic/placebo

### Key Point for Pharmacologic Versus Placebo/Usual Care

- There was limited additional evidence concerning FDA-approved ADHD medications compared with placebo or usual care across all outcomes in this updated systematic evidence review (SOE=insufficient).

### Detailed Synthesis—Pharmacologic Versus Placebo/Usual Care

For this comparison, we identified eight articles<sup>113, 130, 135, 146, 148, 162, 166, 192</sup> representing seven studies that compared an FDA-approved medication for ADHD with placebo or usual care. The study with two publications was the National Institute of Mental Health (NIMH) Collaborative Multisite Multimodal Treatment Study of Children with ADHD (MTA) in which one publication reported academic performance, psychiatric outcomes, and antisocial behavior between treatment arms at 8 years following the 14 months of active treatment,<sup>146</sup> and the other reported blood pressure and heart rate by initial treatment group assignments over 10 years.<sup>192</sup> Three of the six studies were conducted exclusively in the United States,<sup>130, 135, 146</sup> two were conducted in the United States and Europe,<sup>113, 148</sup> one study was conducted in Asia,<sup>166</sup> and one was conducted in Europe, Australia, New Zealand, Israel, and South Africa.<sup>162</sup>

Two studies were rated poor quality<sup>113, 166</sup> and the remaining rated fair quality. Both studies rated as poor quality had incomplete reporting of methods and results along with a high dropout rate. All but two<sup>135, 166</sup> were multicenter studies, and all of the multicenter studies were classified

as RCTs; however, one study randomized subjects to treatment following an initial RCT (withdrawal) to either continue lisdexamfetamine or placebo and assessed effects in the “withdrawal period,”<sup>113</sup> one study randomized treatment following an open-label study to either extended release guanfacine or placebo and assessed effects in the “withdrawal period,”<sup>148</sup> and one study (two articles) reported results long after the RCT treatment periods.<sup>146, 192</sup>

Placebo was the comparator in all of the studies except the two observational studies<sup>135, 166</sup> and the MTA study.<sup>146</sup> For the findings from the MTA study discussed in this section, only the comparison between the medication arm and community care arm are reported. There were only two treatment arms in all of the RCTs with placebo comparators except for one study in which there were three doses of lisdexamfetamine compared with placebo.<sup>130</sup> In the MTA study, there were also 4 treatment arms—medication management, behavioral management, combination of medications and behavior management, and community care (usual care). Medication management in MTA included 1-month double-blind titration with methylphenidate for best dose, progressing to an open titration with other drugs, such as d-amphetamine, pemoline, or imipramine if methylphenidate was unsatisfactory.

The two observational studies evaluated longer term outcomes. Methylphenidate (MPH) was the pharmaceutical in both studies, with doses of 0.3 to 0.6 mg/kg per day<sup>166</sup> and up to 1.5 mg/kg per day.<sup>135</sup> One study<sup>135</sup> compared study participants in the treatment group with a naturalistic sample as a control. The goal of that study was to determine if the 24-month use of MPH affected the risk of alcohol and illicit drug outcomes. The other study<sup>166</sup> also examined long-term (2–4 years) use of MPH and the risk of height and weight gaps or growth deficits.

## Changes in Standardized Symptom Scores

One fair-quality study presented results of ADHD symptom scores in children with active pharmacologic treatment versus placebo.<sup>130</sup> Three doses of lisdexamfetamine were compared with placebo. Although no statistical comparisons were made, there was a much smaller proportion of patients receiving placebo when compared with any dose of lisdexamfetamine that had achieved symptomatic remission at 1 month, defined as an ADHD-RS-IV score  $\leq 18$  (23.6% placebo, 62.3% lisdexamfetamine 30 mg/day, 67.6% lisdexamfetamine 50 mg/day, and 71.2% lisdexamfetamine 70 mg/day).

A second fair-quality study presented results of ADHD symptom scores in children initially stabilized on extended release guanfacine and then randomized to either continuation of the extended release guanfacine or placebo during a 26-week “withdrawal period.”<sup>148</sup> The difference in the LS mean of the ADHD-RS-IV total score at the end of the “withdrawal period” for those continuing extended release guanfacine was statistically significantly lower than those who received placebo indicating that the effect of the treatment was better maintained with continuation of extended release guanfacine as compared to placebo (-6.24; 95% confidence interval [CI] -9.01 to -3.48; ES=0.51,  $p < 0.001$ ). These inconsistent and imprecise findings resulted in insufficient SOE.

## Functional Impairment

One fair-quality study presented results of the Clinical Global Impression-Severity scores in children initially stabilized on extended release guanfacine and then randomized to either continuation of the extended release guanfacine or placebo during a 26 week “withdrawal period.”<sup>148</sup> The proportion of children with low severity score (score 1 or 2) at the end of the “withdrawal period” was statistically significantly lower in those who continued extended

release guanfacine versus placebo in the “withdrawal period” (50% vs. 32.5%,  $p = 0.001$ ). The SOE was insufficient given findings from this one study with imprecise findings and medium risk of bias.

## **Alcohol Use**

One fair-quality study focused on assessing youth self-reported alcohol use using the Drug Use Screen Inventory in children aged 12 to 17 who were mostly male.<sup>135</sup> The study groups for this observational study conducted in the United States were clinical trial participants receiving open label MPH, nonclinical trial youth receiving MPH or amphetamine per their primary care provider, nonclinical trial youth not receiving any ADHD medications, and youth without ADHD. A lower proportion of clinical trial participants reported alcohol use in the preceding year (10%) than nonclinical trial youth receiving MPH or amphetamine (33%,  $p = 0.008$  compared with clinical trial participants) or nonclinical trial youth not receiving any ADHD medications (35%,  $p = 0.002$  compared with clinical trial participants). However, it is not clear whether the clinical trial participation or the more rigorous screening for the clinical trial created a selection bias (insufficient SOE).

## **Sexual Development**

One fair-quality study focused on sexual development in children initially aged 6 to 15 years who were randomized to atomoxetine versus placebo.<sup>162</sup> Among 394 patients who were mostly male, no statistically significant differences were seen in median age of puberty (12.6 in atomoxetine [ATX] group and 12.3 in placebo group,  $p = 0.88$ ) or frequency of onset of puberty (26% in ATX group and 26.9% in placebo group  $p = 0.88$ ). However, the mean height change was higher in the placebo group (3.2 inches in ATX group and 4.22 in placebo group,  $p = 0.01$ ). The SOE was insufficient given imprecise evidence from this one study.

## **Peer Relationships**

One poor-quality study reported results of the quality of peer relationships on the CHIP-CE PRF subdomain for peer relationships at the end of a 6-week period in which one group had their lisdexamfetamine continued and the other group was switched to placebo.<sup>113</sup> The effect size was 0.434 ( $p < 0.001$ ) for the lisdexamfetamine group versus placebo, indicating better peer relationships in the lisdexamfetamine group than placebo. The SOE was insufficient given evidence from this one study with incomplete reporting of both methods and outcomes, along with high dropout rates.

## **Risk Avoidance**

One poor-quality study reported results of risk avoidance on the Child and Health Illness Profile Child Edition, Parent Report Form (CHIP-CE PRF) subdomain risk avoidance at the end of a 6-week period in which one group had their lisdexamfetamine continued and the other group was switched to placebo.<sup>113</sup> The effect size was 0.613 ( $p < 0.01$ ) for the lisdexamfetamine group versus placebo, indicating greater risk avoidance in the lisdexamfetamine group than placebo. Again limitations of the study, combined with imprecise findings led to an insufficient SOE.

## **Academic Performance**

The four-arm MTA study reported results of academic performance at 8 years, finding no statistically significant treatment effects identified for reading, math, or GPA at 8 years.<sup>146, 192</sup>

Insufficient evidence is available to know whether this is due to a lack of long-term treatment benefit or reflects the need for more intensive care for the subjects after completion of the MTA study.

## **Antisocial Behavior, Accidents, and Psychiatric Illness**

The four-arm MTA study found no statistically significant treatment effects on incarceration, aggression, or motor vehicle accidents at 8 years.<sup>146, 192</sup> There was a statistically significant treatment effect with anxiety at 8 years (14.9% medication management, 16.7% behavioral management, 18.3% combination, and 19.7% placebo; p value for treatment effect=0.0217). The SOE was insufficient as these findings were based on a stepped approach and it was unclear which specific medications subjects received.

## **Adverse Effects**

In one study, selected adverse effects of ATX versus placebo were reported.<sup>162</sup> There was a higher rate of increased appetite (7.1% vs 1.4%, p=0.006) and gastrointestinal symptoms (8.2% vs. 2.7%, p=0.046) in patients receiving ATX versus placebo (insufficient SOE for both others). Findings from this same study and the one poor-quality observational study<sup>166</sup> indicate small significant reductions in height and weight among the MPH groups and higher rates of alcohol or drug use during the past year. Both studies compared ADHD participants with non-ADHD participants. The SOE was insufficient given the findings were the large loss to followup and potential risk of bias.

## **Findings in Relation to What Is Already Known—Pharmacologic Versus Placebo/Usual Care**

In the 2011 report,<sup>4</sup> 13 short-term studies compared MPH with placebo (one also compared mixed amphetamine salts [MAS] with placebo) in children under 6 years of age; 9 longer term studies compared pharmacologic agents (4 MPH, 2 ATX, 1 amphetamine or MAS, and 2 any stimulant) with placebo. The studies in children under 6 years of age were relatively small and thus most of the conclusions are based on a single larger RCT of good quality, the Preschool ADHD Treatment Study (PATS),<sup>196</sup> indicating that for children without comorbidities, MPH was very effective (SOE=low).

In people 6 years of age and older, the 2011 report did not focus on comparative efficacy or safety of pharmacologic drugs compared with placebo. Therefore, no definitive conclusions were made in that report for any ADHD drug compared with placebo.

Our update evaluates one additional poor-quality study, observational in design, by Zhang et al.<sup>166</sup> that specifically looked at the long-term outcomes of height and weight from MPH use. Findings from that study indicate small but significant reductions in height and weight among the MPH groups compared with non-ADHD participants. Given the large rate of loss to follow up within this study and inadequate reporting of methods and results the SOE was insufficient.

This updated systematic review—although focused on assessing the comparative efficacy and safety of FDA approved ADHD medications versus placebo—was likewise unable to make definitive conclusions given the small number of studies during the current time period and the limited quality of those studies. There is insufficient overlap in study design and outcomes between the findings in this updated systematic review and the 2011 report to qualitatively improve the certainty regarding the benefits and harms of treatment beyond the individual reviews' findings.

## **Strength of Evidence—Pharmacologic Versus Placebo/Usual Care**

Table 9 summarizes the SOE for comparisons between pharmacologic and placebo/usual care treatments based on this report's included studies. For most outcomes there was only one either low- or fair-quality study exploring the outcome of interest with imprecise findings and so the evidence was given an insufficient SOE grade.

**Table 9. Strength of evidence for major outcomes—comparisons between pharmacologic and placebo/usual care treatments**

<b>Outcome</b>	<b>No. Studies/ Design (N Patients)</b>	<b>Study Limitations</b>	<b>Directness</b>	<b>Consistency</b>	<b>Precision</b>	<b>Reporting Bias</b>	<b>Findings</b>
<b>SOE Grade</b>	<b>Age Category</b>						
<b>Major outcomes</b>							
Changes in standardized symptom scores	2 RCTs (359) 7–17	Medium	Direct	Inconsistent	Imprecise	Unclear	SOE was insufficient because of inconsistent and imprecise findings within 2 studies with medium risk of bias. <sup>130, 148</sup>
Insufficient							
Functional Impairment	1 RCT (219) 7–17	Medium	Direct	NA	Imprecise	Unclear	SOE was insufficient because of only one study was included with medium risk of bias and imprecise findings. <sup>148</sup>
Insufficient							
Substance abuse	1 Obs (211) 7–17	Medium	Direct	NA	Imprecise	None	SOE was insufficient given medium risk of bias within one observational study. <sup>135</sup>
Insufficient							
Sexual Development	1 RCT (394) 7–17	Medium	Direct	NA	Imprecise	None	SOE was insufficient because only one study was included with medium risk of bias and imprecise findings. <sup>162</sup>
Insufficient							
Quality of peer relationships	1 RCT (Unclear) 7–17	High	Direct	NA	Imprecise	Unclear	SOE was insufficient given evidence from one low-quality study with imprecise findings. <sup>113</sup>
Insufficient							
Risk-taking behaviors	1 RCT (Unclear) 7–17	High	Direct	NA	Imprecise	Unclear	SOE was insufficient given evidence from one low-quality study with imprecise findings. <sup>113</sup>
Insufficient							
Academic performance	1 RCT (436) 7–17	Medium	Direct	NA	Imprecise	Unclear	SOE was insufficient because medication management was based on a stepped approach and it was unclear which specific medications subjects received. <sup>146, 192</sup>
Insufficient							
Aggression	1 RCT (436) 7–17	Medium	Direct	NA	Imprecise	Unclear	SOE was insufficient because medication management was based on a stepped approach and it was unclear which specific medications subjects received. <sup>146, 192</sup>
Insufficient							
Incarceration	1 RCT (436) 7–17	Medium	Direct	NA	Imprecise	Unclear	SOE was insufficient because medication management was based on a stepped approach and it was unclear which specific medications subjects received. <sup>146, 192</sup>
Insufficient							



<b>Outcome</b>	<b>No. Studies/ Design (N Patients)</b>	<b>Study Limitations</b>	<b>Directness</b>	<b>Consistency</b>	<b>Precision</b>	<b>Reporting Bias</b>	<b>Findings</b>
Motor vehicle collisions	1 RCT (436) 7–17	Medium	Direct	NA	Imprecise	Unclear	SOE was insufficient because medication management was based on a stepped approach and it was unclear which specific medications subjects received. <sup>146, 192</sup>
Insufficient							
Depression or anxiety	1 RCT (436) 7–17	Medium	Direct	NA	Imprecise	Unclear	SOE was insufficient because medication management was based on a stepped approach and it was unclear which specific medications subjects received. <sup>146, 192</sup>
Insufficient							
Changes in appetite	1 RCT (394) 7–17	Medium	Direct	NA	Imprecise	None	SOE was insufficient because only one study was included with medium risk of bias and imprecise findings. <sup>162</sup>
Insufficient							
Elevated blood pressure	1 RCT (493) 7–17	Medium	Direct	NA	Imprecise	Unclear	SOE was insufficient because medication management was based on a stepped approach and it was unclear which specific medications subjects received. <sup>146, 192</sup>
Insufficient							
Gastrointestinal symptoms	1 RCT (394) 7–17	Medium	Direct	NA	Imprecise	None	SOE was insufficient because of only one study was included with medium risk of bias and imprecise findings. <sup>162</sup>
Insufficient							
Growth suppression	1 RCT, 1 Obs (569) 7–17	High	Direct	NA	Imprecise	None	SOE was insufficient because of high risk of bias given high loss to follow up combined with imprecise findings. <sup>162, 166</sup>
Insufficient							
Increased heart rate	1 RCT (507) 7–17	Medium	Direct	NA	Imprecise	Unclear	SOE was insufficient because medication management was based on a stepped approach and it was unclear which specific medications subjects received. <sup>146, 192</sup>
Insufficient							

Abbreviations: NA=not applicable; Obs=observational; RCT=randomized controlled trial; SOE=strength of evidence

## Key Points for Pharmacologic Versus Pharmacologic

- Based on evidence from 3 observational studies identified in this systematic evidence review, the proportion of patients reporting gastrointestinal (GI) effects was slightly higher for ATX than MPH (SOE=low).
- Since the 2011 report which described the benefit of psychostimulant therapy for up to 24 months, little additional evidence has been generated for comparing safety and efficacy of select FDA-approved medications for treatment of ADHD and SOE was insufficient for all other outcomes.

## Detailed Synthesis—Pharmacologic Versus Pharmacologic

For this comparison, we identified nine studies.<sup>110, 118, 120, 121, 123, 151, 156, 157, 173</sup> Of these, seven were multisite studies,<sup>110, 120, 121, 123, 151, 156, 173</sup> and two were a single site.<sup>118, 157</sup> Two studies were RCTs.<sup>118, 157</sup> Among the seven observational studies, four analyzed data from the Italian National ADHD Registry—three from a whole region<sup>110, 121, 151</sup> and one from selected sites in a specific region.<sup>123</sup> Government funding was reported for five studies,<sup>110, 123, 151, 157, 173</sup> industry funding for two studies,<sup>120, 156</sup> and unknown funding for two studies.<sup>118, 121</sup>

Treatments compared in five of the studies were ATX versus MPH.<sup>110, 118, 121, 123, 151</sup> One study compared extended-release guanfacine monotherapy with extended release guanfacine plus either amphetamine or MPH,<sup>156</sup> one assessed ATX monotherapy compared with ATX combined with any other ADHD medication,<sup>120</sup> one was a survey collecting patient-reported adverse events from any ADHD medication,<sup>173</sup> and one study compared cardiovascular effects of immediate release guanfacine, extended release dexamethylphenidate, or their combination.<sup>157</sup>

Of the nine studies, two reported results using one of the selected ADHD symptom scores, the Conner Rating Scale-Parent<sup>118</sup> and the ADHD Rating Scale.<sup>156</sup> One study reported results from one of the selected functional impairment tests, the Clinical Global Impression.<sup>120</sup> Of the nine studies, seven only reported adverse events of interest for this systematic review.<sup>110, 121, 123, 151, 156, 157, 173</sup>

## Changes in Standardized Symptom Scores

Two studies reported results of ADHD symptom scores.<sup>118, 156</sup> One study was an RCT conducted in a single site in Turkey in which children between the ages of 7 and 16 were randomly assigned to receive ATX (59 evaluable) or osmotic release oral system MPH (OROS-MPH) (61 evaluable).<sup>118</sup> The Conners Comprehensive Behavior Rating Scale-Teacher was used to assess and compare changes on the hyperactive, inattentive, and behavior subscales from baseline to 6 months and to compare the proportion of children achieving at least a 40-percent reduction in the hyperactive, inattentive, and behavior subscales at 6 months. There were no statistically significant differences between the children taking ATX and those taking OROS-MPH in any of these measures. This study was rated as fair quality.

The second study was an observational study enrolling children from two prior RCTs conducted in the United States evaluating extended-release guanfacine (one of which permitted use of amphetamine or MPH with the extended-release guanfacine).<sup>156</sup> In this observational extension study, children aged 6 to 17 at initiation received one of four doses of extended-release guanfacine monotherapy (n=206) or any dose of extended-release guanfacine in combination with amphetamine or MPH as the combination group (n=53). The ADHD Rating Scale was used

to assess ADHD symptoms at various time points. The change in score within each treatment arm (monotherapy or combination therapy) from baseline to last assessment (time varied up to 24 months) was determined, but treatment arms were not compared. There was a statistically significant decrease in mean score in each arm; -20.1 ( $\pm$  13.5) for monotherapy and -16.1 ( $\pm$  11) for combination therapy (both  $p < 0.001$ ). This study was rated as poor quality given several potential risks of bias including lack of allocation concealment and blinding. In addition participants were subjects from prior studies who were titrated to tolerated dose of guanfacine then assessed for changes in ADHD symptoms increasing potential bias.

The SOE was insufficient given the heterogeneity between the symptom scores, inconsistency in findings, and the potential high risk of bias.

## Functional Impairment Scores

Only one study presented results using a selected functional impairment tool.<sup>120</sup> This study was an industry-funded, observational study conducted in two U.S. sites. Chart-abstracted data were used to compare least-square means of the Clinical Global Impression scale assessed at least 50 days after the start of pharmacologic therapy in children aged 6 to 17 receiving ATX monotherapy ( $n=37$ ) compared with children receiving ATX combination therapy (combined with any other ADHD medication) ( $n=34$ ). The statistical model was adjusted using propensity scores. No statistically significant difference in least-square mean Clinical Global Impressions Score was found between the treatment groups ( $p=0.4072$ ). This study was rated as poor quality given its retrospective nature, lack of power, and issues with reporting of its methods and outcomes (SOE=insufficient).

## Adverse Events

Seven studies presented adverse events from ADHD pharmacologic therapies.<sup>110, 121, 123, 151, 156, 157, 173</sup> One fair-quality study presented results from a single survey of the parents of 578 children aged 3 to 16 conducted in the UK to ascertain recalled adverse drug reactions to any ADHD medication.<sup>173</sup> Among 200 completed surveys, 80 percent were from children taking MPH alone or in combination. Because the number of patients exposed to each drug or drug combination was not reported, it is difficult to draw any conclusions from these results.

Four studies reporting adverse effects were observational studies comparing ATX with MPH.<sup>110, 121, 123, 151</sup> All of these used data from the Italian National ADHD Registry—three in whole<sup>110, 121, 151</sup> and one from selected sites in a specific region.<sup>123</sup> Thus, it is not possible to determine the total number of unique patients, as patients may have been included in more than one study. Of these four studies, one poor-quality study focused on electrocardiogram (ECG), blood pressure, and heart rate changes only.<sup>110</sup> In this study, there was a higher risk of having at least one altered ECG (right bundle branch block [RBBB], sinus bradycardia, sinus tachycardia, increased QTc, and/or atrioventricular [AV] block) at 6 months (relative risk [RR] 1.29; 95% CI 0.52 to 3.21) and 12 months (RR 2.41; 95% CI 1.04 to 5.60) in patients receiving MPH versus ATX, although the increased risk at 6 months was not statistically significant. Systolic blood pressure, diastolic blood pressure, and heart rate were not compared by treatment arms but rather by changes at 6, 12, and 24 months. The only statistically significant change in patients taking MPH was an increase in heart rate at 6 months. The only statistically significant changes in patients taking ATX were an increase in heart rate as measured at 6 and 12 months and an increase in diastolic blood pressure as measured at 6 months. Given the short time frame for this

study and therefore lack of patients with events, there is concern that this study was not representative.

The other three studies using the Italian National ADHD Registry and comparing ATX with MPH reported on numerous adverse events (Table H-3 in Appendix H). Overall, gastrointestinal side effects or decreased appetite were the most commonly reported problems. In one of these studies after controlling for presence of comorbid psychiatric conditions, there was a statistically higher incidence rate ratio for gastrointestinal side effects (4.56; 95% CI 2 to 10.43), cardiovascular side effects (3.43; 95% CI 1.21 to 9.76), and neuropsychiatric side effects (2.54; 95% CI 1.34 to 4.74) for ATX versus MPH.<sup>121</sup> In another, there was a statistically significant greater risk of adverse reactions to ATX versus MPH (RR 3.57; 95% CI 1.92 to 6.64).<sup>151</sup> These studies were rated as fair to good quality.

A sixth study reporting adverse effects was a poor-quality RCT comparing extended-release guanfacine monotherapy versus combination therapy with amphetamine or MPH.<sup>156</sup> The rates of selected adverse events are presented in Table H-4 in Appendix H. Among the adverse events listed, somnolence and headache were the most common but were similar between the different groups.

The last study reporting only side effects of interest was a single-center RCT of good quality in which heart rate, systolic blood pressure, and diastolic blood pressure were reported over a 12 month open label follow-up period to a three armed RCT of immediate release guanfacine, extended release dexamethylphenidate, or the combination.<sup>157</sup> The number of patients who continued in the follow-up period was not reported. There was no statistically significant difference in heart rate over the 12 months between groups ( $p=0.09$ ), but there were statistically significant differences between groups in systolic and diastolic blood pressure ( $p=0.0005$  and  $p=0.01$ , respectively) with both systolic and diastolic blood pressure being higher for those who received extended release dexamethylphenidate as compared to the other two treatment arms.

The SOE for a slight increase in gastrointestinal symptoms for patients on ATX compared with MPH was low. For all other adverse effects the SOE was insufficient.

## **Findings in Relation to What Is Already Known—Pharmacologic Versus Pharmacologic**

The 2011 report<sup>4</sup> included comparisons of pharmacologic agents (MPH, DEX, MAS, ATX, and extended release guanfacine) in children under 6 years of age with ADHD or disruptive behavior disorder as part of KQ 1 and in people 6 years of age and older (including adults) with ADHD in KQ 2. In that systematic review, there were relatively few studies that directly compared pharmacologic agents relative to the number of studies that compared medications to placebo, nonpharmacologic assessment, and noncomparative studies. In children under 6 years of age, no studies directly compared pharmacologic agents. Our review did not specifically focus on this population of patients; however, children as young as 3 years of age were included in studies reported on adverse events associated with pharmacologic agents in comparative assessments.

In people aged 6 years and older, there were nine comparative studies of pharmacologic agents in the 2011 report; however, that report was focused on ascertaining only longer-term efficacy and safety. Because of the small number of comparative studies of pharmacologic agents, no specific conclusions were made regarding the comparative efficacy or safety of the included pharmacologic agents. The included studies spanned the following comparisons: one study compared efficacy in people receiving MPH compared with pemoline,<sup>197</sup> but pemoline is

not a pharmacologic agent of interest in this updated review as it has been removed from the US market. One other study compared extended-release guanfacine monotherapy with extended release guanfacine plus either amphetamine or MPH.<sup>156</sup> That study is also included in this updated review. Two studies assessed adverse events between ATX and unspecified stimulants,<sup>198</sup> and between MPH and DEX.<sup>199</sup> The remaining four studies compared growth in patients receiving MPH versus MAS,<sup>200</sup> DEX versus MPH,<sup>201</sup> amphetamine versus MPH,<sup>202</sup> and MPH versus DEX.<sup>203</sup>

This updated systematic review provides results from a larger number of studies comparing FDA-approved pharmacologic agents, especially comparisons of ATX and MPH; however, the SOE for efficacy or safety remains insufficient for most outcomes. There were no new conclusions regarding the effectiveness of pharmacologic treatments as compared to one another other than slightly higher gastrointestinal side effects for patients taking ATX as compared to MPH (SOE low).

### **Strength of Evidence—Pharmacologic Versus Pharmacologic**

Table 10 summarizes the SOE for comparisons of pharmacologic therapies based on this report's included studies. Small numbers of studies with variable quality demonstrating inconsistent and imprecise findings caused insufficient SOE grades for all outcomes other than GI symptoms.

**Table 10. Strength of evidence for major outcomes—comparisons of pharmacologic treatments**

<b>Outcome</b>	<b>No. Studies/ Design (N Patients)</b>	<b>Study Limitations</b>	<b>Directness</b>	<b>Consistency</b>	<b>Precision</b>	<b>Reporting Bias</b>	<b>Findings</b>
Changes in standardized symptom scores	1 RCT and 1 Obs (379) 7–17	High	Direct	Inconsistent	Imprecise	Unclear	SOE was insufficient across these 2 studies because of heterogeneity in outcome measures, inconsistency in findings, and high risk of bias. <sup>118, 156</sup>
Insufficient							
Acceptability of treatment-Discontinuation Rate	1 Obs (130) 7–17	Medium	Direct	NA	Imprecise	None	SOE was insufficient because of the sample size and risk of bias related to the assessment of adherence. <sup>123</sup>
Insufficient							
Behavior changes	1 Obs (130) 7–17	Medium	Direct	NA	Imprecise	None	SOE was insufficient because of the study design and limitations in the pre-post assessment of behavior changes. <sup>123</sup>
Insufficient							
Cardiac arrhythmias	1 Obs (750) 7–17	High	Direct	Consistent	Imprecise	None	SOE was insufficient because of the risk of bias in the one observational study identified. <sup>110</sup>
Insufficient							
Changes in appetite	3 Obs (1,966) 7–17	Medium	Direct	Inconsistent	Imprecise	None	SOE was insufficient because of the risk of bias and lack of consistency in the observational studies. <sup>121, 123, 151</sup>
Insufficient							
Conduction abnormalities	1 Obs (1,424) 7–17	Medium	Direct	NA	Imprecise	None	SOE was insufficient because only one observational study was available and there was a risk that the outcome would not be identified. <sup>151</sup>
Insufficient							
Elevated blood pressure	2 Obs and 1 RCT (2,382) 7–17	High	Direct	Inconsistent	Imprecise	Unclear	SOE was insufficient because of the risk of bias in the 3 studies. <sup>110, 151 157</sup>
Insufficient							
Gastrointestinal symptoms	3 Obs (1,966) 7–17	Medium	Direct	Consistent	Imprecise	None	The proportion of patients reporting gastrointestinal effects or disease was small in all 3 studies and slightly higher for ATX than MPH. <sup>121, 123, 151</sup>
Low							

<b>Outcome</b>	<b>No. Studies/ Design (N Patients)</b>	<b>Study Limitations</b>	<b>Directness</b>	<b>Consistency</b>	<b>Precision</b>	<b>Reporting Bias</b>	<b>Findings</b>
Increased heart rate	3 Obs and 1 RCT (1137) 7-17	Low	Direct	Consistent	Imprecise	Unclear	SOE was insufficient because of the risk of bias and lack of consistent outcome assessment. <sup>110, 121, 123, 157</sup>
Insufficient							
Sleep disturbance	1 Obs (130) 7-17	Medium	Direct	NA	Imprecise	None	SOE was insufficient because only one small observational study was identified, and because of the risk of bias in the assessment of the outcome measure. <sup>123</sup>
Insufficient							
Suicide ideation	1 Obs (1424) 1 Obs (NR) 7-17	Medium	Direct	Consistent	Imprecise	None	SOE was insufficient because of study heterogeneity and risk that the outcome measure was not detected. <sup>121, 151</sup>
Insufficient							
Tics or other movement disorders	2 Obs (1554) 7-17	Medium	Direct	Consistent	Imprecise	None	SOE was insufficient because of study heterogeneity and risk that the outcome measure was not detected. <sup>123, 151</sup>
Insufficient							

Abbreviations: ATX=atomoxetine; ECG=electrocardiogram; MPH=methylphenidate; NA=not applicable; Obs=observational; RCT=randomized controlled trial; SOE=strength of evidence; XR=extended release

## Key Points for Pharmacologic Versus Nonpharmacologic

- MPH decreases appetite and causes more sleep disturbance than supplements including ginkgo biloba, ningdong granule, or omega-3/6 fatty acids (SOE=low).
- Evidence identified in this systematic review was insufficient for all other outcomes.

## Detailed Synthesis—Pharmacologic Versus Nonpharmacologic

For this KQ 2 comparison, we identified nine articles<sup>114, 124, 131, 141, 146, 147, 155, 189, 192</sup> representing seven RCT studies published between 2009 and 2016 that met our inclusion criteria. There was a total of 1,072 participants with a mean age ranging from 8.11 to 16.8, and the majority were male (65% to 85.3%). Country sites varied, with the majority conducted in the UK or Europe (n=3). More than half the studies (n=5) were government-sponsored research, most were single site (n=5), and the majority of studies recruited participants from specialty clinics (n=5). Study characteristics are in Table 11.

Of the 7 RCTs, MPH was the primary pharmaceutical intervention. Four trials were 3-arm studies comparing MPH alone or in combination with a nonpharmacologic intervention. The dosage of MPH was clinically adjusted according to tolerability and efficacy, ranging from 0.3 mg/kg per day to 1.5 mg/kg per day. Comparators in the trials included supplements (n=3; ginkgo biloba, omega-3/6, and ningdong), neurofeedback (n=3), behavioral therapy (n=1), or a combination of behavioral therapy, education, and physical activity (n=2). The duration of studies ranged from 6 weeks to 8 years.

## Outcome Measures

The selected outcome measures varied considerably across the 7 included studies (Table 11). Change in the ADHD rating scale for parent (n=3) and teacher (n=2) was the most commonly used outcome measure. Behavioral changes and academic performance were also commonly measured outcomes.

**Table 11. Characteristics of included studies**

Characteristic	Value
Study design, number of studies RCTs	7
Combined number of patients; range of % males	1,072; 65.0% to 85.3%
Range of mean ages, years	8.11 to 16.8
Study years	2009-2016
Length of intervention / follow-up period	6 weeks to 8 years
Countries, number of studies	
Asia	1
UK or Europe	3
Middle East	1
South America	1
USA	1
Funding source, number of studies	
Government	5
Industry	1
Nongovernment, nonindustry	1
Study Sites, number of studies	
Single site	5
Multisite	2



Characteristic	Value
Setting, number of studies	
Specialty clinic	5
Primary clinic	1
Academic setting	1
Interventions, number of studies	
Supplements	3
Neurofeedback	3
Behavioral therapy	1
Physical exercise, education, behavioral modification	2
Pharmaceutical intervention and dosage, number of studies	
Methylphenidate	7
0.3-1 mg/kg/day	6
1.5 mg/kg/day	1
Timing of last outcome assessment, number of studies	
Short-term: ≤3 months	5
Long-term: 6+ months	2
Change in standardized scale outcomes, number of studies	
ADHD Rating Scale–Parent	3
ADHD Rating Scale–Teacher	2
Barkley Rating Scale	1
Clinician Global Impression–Clinician	1
Clinician Global Impression–Parent	1
Visual and Auditory Continuous Performance	1
Other outcomes, number of studies	
Behavior changes (sadness, aggression, irritability, anxiety, depression)	7
Academic performance	3
Incarceration	2
Motor vehicle collision	1
Sleep	1
Adverse effects of treatment, number of studies	
Height and weight change	1
Gastrointestinal symptoms (nausea, dyspepsia, stomach pain)	2
Sleep disturbances (insomnia, hypersomnia, trouble falling asleep)	4
Changes in appetite (suppression, decreased, increased)	3

Abbreviations: ADHD=attention deficit hyperactivity disorder; RCT=randomized controlled trial

We identified three RCTs (2 good quality, 1 poor quality) comparing MPH with a supplement of ginkgo biloba,<sup>155</sup> ningdong granule,<sup>141</sup> or omega-3/6 fatty acid.<sup>114</sup> The poor-quality study<sup>114</sup> was unblinded and had high withdrawals (which differed between arms). Sample sizes were small, consisting of 50 to 90 participants, with one 3-arm trial comparing the combination of MPH plus omega-3/6. Changes in the ADHD Rating Scale were the primary outcome for all three trials. Individual study findings suggest that ginkgo biloba was less effective while ningdong granule and omega-3/6 had effects similar to MPH although the SOE was insufficient given the small overall sample size, short-term outcomes (6-8 weeks for the two good-quality RCTs), and lack of consistency and precision in the outcome measure.

Four RCTs (1 good quality, 2 fair quality, 1 poor quality) compared MPH with neurofeedback or<sup>131, 147</sup> behavioral therapy,<sup>146, 147, 192</sup> and a 3-arm trial combined MPH with neurofeedback.<sup>124, 189</sup> Sample sizes were small in two of the trials (n=57 and 91) and large (n=579) in the 8-year follow-up study.<sup>146, 147, 192</sup> The primary outcome measures varied among the trials. Study quality was reduced because of lack of blinding and variation in outcome measurement.

Table H-5 in Appendix H summarizes these findings across the 7 studies.

## **Adverse Effects of Supplementation**

Adverse effects were identified in four of the included studies.<sup>114, 131, 141, 155</sup> Changes in gastrointestinal symptoms (nausea, dyspepsia, stomach pain), sleep disturbances (insomnia, hypersomnia, trouble falling asleep), and changes in appetite (suppression, decreased, increased) were measured. A higher proportion of participants experienced adverse effects on sleep (low SOE) or appetite (low SOE) when assigned to the MPH or combined group with MPH as compared to the nonpharmacologic interventions in three studies.<sup>114, 141, 155</sup> In the fourth study, sleep quality was not affected by any of the received interventions.<sup>131</sup> Table H-6 in Appendix H summarizes the proportion of participants with adverse effects.

## **Findings in Relation to What Is Already Known—Pharmacologic Versus Nonpharmacologic**

Previous reviews have examined the relationship between pharmacologic and nonpharmacologic treatments comparing omega-3/6 with placebo.<sup>204, 205</sup> Previous reviews have not included neurofeedback as an intervention of interest. Our summary findings directly comparing MPH with the supplements of ginkgo biloba, ningdong granule, or omega-3/6 fatty acids have not been reported in previous reviews. We found insufficient SOE that ginkgo biloba, ningdong granule, or omega-3/6 supplements produced greater improvements in changes in standardized symptom scores (ADHD Rating Scale) compared to MPH. Several limitations existed among this literature including small sample sizes, and measuring only short-term outcomes in the good-quality studies.

The 2011 report<sup>4</sup> found that the evidence on long-term outcomes of MPH treatment was sparse and inconclusive. One exception to this was the study by Molina et al.<sup>146, 192</sup> (also included in this updated review) that showed reduced ADHD symptoms in a mostly male sample with ADHD combined type following 14 to 24 months of MPH treatment.

The 2011 report<sup>4</sup> also reported on adverse effects of pharmacologic interventions. The findings from that report were determined to be inconclusive due to information from observational studies and uncontrolled extensions to clinical trials. However, that review did not examine adverse effects of pharmacologic treatments when compared with supplements (i.e., ginkgo biloba, ningdong granule, and omega-3/6). Generally, a higher proportion of adverse effects was reported with MPH or combination of supplements and MPH compared with supplement (low SOE for both sleep disturbances and decreased appetite). Our SOE comparing MPH with these supplements are limited due to small sample sizes, overall quality of the studies, and assessment of short-term outcomes.

## **Strength of Evidence—Pharmacologic Versus Nonpharmacologic**

Table 12 summarizes the SOE for pharmacologic versus nonpharmacologic treatments based on this report's included studies. Small numbers of studies with potential limitations and inconsistent and imprecise findings caused insufficient SOE grades for all outcomes other than sleep disturbance and changes in appetite.

**Table 12. Strength of evidence for major outcomes—comparisons between pharmacologic and nonpharmacologic treatments**

<b>Outcome</b>	<b>No. Studies/ Design (N Patients)</b>	<b>Study Limitations</b>	<b>Directness</b>	<b>Consistency</b>	<b>Precision</b>	<b>Reporting Bias</b>	<b>Findings</b>
Changes in standardized symptom scores	5 RCTs (356) 7–17	Medium	Direct	Inconsistent	Imprecise	Unclear	SOE was insufficient because of the small overall sample size and lack of consistency and precision in the outcome measure. <sup>114, 124, 141, 147, 155, 189</sup>
Insufficient							
Behavior changes	3 RCTs (274) 7–17	Medium	Direct	Inconsistent	Imprecise	None	SOE was insufficient because of the small overall sample size and lack of consistency and precision in the outcome measure. <sup>114, 131, 141</sup>
Insufficient							
Aggression	1 RCT (436) 7–17	Medium	Direct	NA	Imprecise	Unclear	SOE was insufficient because of the risk of bias in the single RCT identified. <sup>146, 192</sup>
Insufficient							
Depression or anxiety	2 RCTs (486) 7–17	Medium	Direct	Consistent	Imprecise	Unclear	SOE was insufficient because of the small overall sample size and lack of consistency and precision in the outcome measure. <sup>146, 155, 192</sup>
Insufficient							
Academic performance	1 RCT (436) 7–17	Medium	Direct	NA	Imprecise	Unclear	SOE was insufficient because of the risk of bias in the single RCT identified. <sup>146, 192</sup>
Insufficient							
Incarceration	1 RCT (436) 7–17	Medium	Direct	NA	Imprecise	Unclear	SOE was insufficient because of the small overall sample size and lack of consistency and precision in the outcome measure. <sup>146, 192</sup>
Insufficient							
Motor vehicle collisions	1 RCT (436) 7–17	Medium	Direct	NA	Imprecise	Unclear	SOE was rated insufficient because of the small overall sample size and lack of consistency and precision in the outcome measure. <sup>146, 192</sup>
Insufficient							
Changes in appetite	3 RCT (212) 7–17	Medium	Direct	Consistent	Imprecise	None	All three studies found the MPH medication group to have a significantly greater number of participants with decreased appetite when compared to supplementation by ningsong, omega-3/6 or ginkgo biloba. <sup>114, 141, 155</sup>
Low							
Elevated blood pressure	1 RCT (493) 7–17	Medium	Direct	NA	Imprecise	Unclear	SOE was insufficient because of the small overall sample size and lack of consistency and precision in the outcome measure. <sup>146, 192</sup>
Insufficient							
Gastrointestinal symptoms	2 RCTs (162) 7–17	Medium	Direct	Inconsistent	Imprecise	None	SOE was insufficient because of the small overall sample size and lack of consistency and precision in the outcome measure. <sup>114, 141</sup>
Insufficient							

Increased heart rate	1 RCT (507) 7-17	Medium	Direct	NA	Imprecise	Unclear	SOE was rated insufficient because of the small overall sample size and lack of consistency and precision in the outcome measure. <sup>146, 192</sup>
Insufficient							
Sleep disturbance	4 RCTs (324) 7-17	Medium	Direct	Inconsistent	Imprecise	None	There was a greater proportion of sleep disturbance outcomes in the MPH medication group compared to supplementation by ningdong granule, ginkgo biloba, or neurofeedback. <sup>114, 141, 155</sup> A fourth study found no significant difference in sleep scores between interventions <sup>131</sup>
Low							
Weight decrease	1 RCT (50) 7-17	Medium	Direct	NA	Imprecise	None	SOE was insufficient because of the sample size in the single study and risk of bias measuring the outcome. <sup>155</sup>
Insufficient							
Abbreviations: MPH=methylphenidate NA=not applicable; Obs=observational; RCT=randomized controlled trial; SOE=strength of evidence							

## Key Points for Nonpharmacologic Versus Nonpharmacologic/Placebo

- There is insufficient evidence based on the studies identified in this systematic evidence review to evaluate the effectiveness of neurofeedback in reducing ADHD symptoms.
- There is some evidence that cognitive training strategies such as the computer-based Cogmed cognitive training program may reduce ADHD symptoms in the short term but not the long term (SOE=low).
- Cognitive behavioral therapy resulted in improvement in ADHD symptoms (SOE=low).
- Child or parent training did not demonstrate differences in academic performance (SOE=low).
- Child or parent training improves ADHD symptoms (SOE=moderate).
- Omega-3 fatty acid supplementation was no different than placebo on ADHD symptoms (SOE=moderate).

## Categories of Interventions for This Comparison

We organized the comparison of nonpharmacologic versus nonpharmacologic/placebo treatments into the following seven intervention categories:

1. Neurofeedback
2. Cognitive training
3. Cognitive behavioral therapy (CBT), focusing on the development of specific skills for patients to be aware of their symptoms of ADHD and developing strategies to minimize the effects of these symptoms
4. Child or parent training or behavioral intervention
5. Dietary supplementation with omega-3/6 fatty acids
6. Herbal or dietary approaches
7. Other approaches

Other approaches included community programs and programs that addressed mentoring and parent support, multisystemic intervention at school and with parents, in-home family training intervention, a general parenting program, using melatonin as an adjunct treatment, acupuncture, and a homeopathic intervention). Studies were included in these comparisons that had subjects in all study arms that received other ADHD treatment, including psychostimulants.

As previously described, there is insufficient evidence to directly compare omega-3/6 fatty acid supplementation to MPH or other psychostimulants. The effectiveness of omega-3/6 for the treatment of ADHD symptoms was not included in the 2011 report. This current review identified a single previous systematic review and meta-analysis (Bloch and Qawasmi<sup>204</sup>) comparing omega-3 fatty acid supplementation with placebo and found a small but statistically significant benefit on ADHD symptoms. The Bloch and Qawasmi systematic review included ten trials of 699 children. Only two trials found a benefit and the overall effect size from the meta-analysis was small (0.31). The meta-analysis conducted within this report found no benefit for omega-3 fatty acid supplementation. In summary, omega-3/6 supplementation is unlikely to have benefit.

Of the 7 intervention categories, only 2 had data from the previous systematic review thereby allowing us to discuss our new findings in relation to what is already known: (1) child or parent

training or behavioral interventions and (2) other approaches. These findings are described in their corresponding sections below.

## Detailed Synthesis—Overview

For this KQ 2 comparison, we identified 61 articles<sup>107-109, 111, 112, 115-117, 119, 122, 125-129, 131-134, 136-140, 142-147, 149, 150, 152-154, 158-161, 163-165, 167-172, 174, 175, 184-188, 190-195</sup> representing 50 studies that met our inclusion criteria. All but two studies were RCTs.<sup>115, 127</sup> Of the 47 RCTs, 28 were rated as good quality,<sup>107-109, 112, 116, 119, 122, 125, 126, 129, 131-134, 139, 142, 143, 150, 152, 158, 160, 161, 164, 167-169, 172, 174</sup> 19 as fair quality,<sup>111, 117, 128, 137, 138, 140, 144-147, 149, 153, 154, 159, 163, 165, 170, 171, 175</sup> and 1 as poor quality.<sup>136</sup> The two observational studies were was rated as fair quality.<sup>115, 127</sup> Of these, 20 were multisite studies, 29 were single-site studies, and one did not report the number of sites. Fifteen studies included patients in the United States, 19 were conducted in Europe, and 16 included patients from the Middle East, Asia, Australia, or New Zealand. Government funding supported 26 studies, industry supported 3 studies, nongovernment and nonindustry funding supported 11 studies. External funding was either not provided or not reported for 15 studies.

The 50 studies reported 54 comparisons of a nonpharmacologic therapy with either another nonpharmacologic therapy or no therapy (e.g., a placebo intervention, usual care, or a waitlist control). Of the 7 intervention categories, 5 evaluated neurofeedback; 10, cognitive training; 2, CBT; 13, child or parent training or behavioral intervention; 8, dietary supplementation with omega-3/6 fatty acids; 6, herbal or dietary approaches; and 9, other approaches. Details of these comparisons are reported below, organized by intervention category.

## Detailed Synthesis—Neurofeedback

Neurofeedback is a computer-aided type of nonpharmacologic treatment for ADHD that is based on biofeedback principles. Treatment typically involves patients using a computer monitor that shows brainwave activity through EEG. In the neurofeedback process, patients are trained to adjust their attention and thereby their brainwave activity. Four good-quality<sup>116, 131, 132, 160, 186, 193, 194</sup> and 1 fair-quality<sup>147</sup> studies representing 353 patients evaluated neurofeedback. Findings are summarized by outcome and described in Table H-7 in Appendix H. These studies had short periods of intervention, with only one study<sup>116</sup> describing findings to 6 months. Therefore, the overall SOE was insufficient.

## Acceptability of Treatment

Only one study examined parent-rated motivation of children to participate in treatment and the effectiveness of treatment, finding no difference between neurofeedback and the attention skills control condition.<sup>132, 193, 194</sup> The SOE was insufficient given that the evidence was from only one study which might have been underpowered.

## Behavior Changes

Only one small but good-quality study assessed behavior changes associated with a 12-week course of neurofeedback sessions. This study found no statistically significant differences in postintervention mean scores for the Inattention and Hyperactivity/Impulsiveness subscales of the Strengths and Weaknesses of ADHD and Normal Behavior (SWAN) questionnaire. The single small study resulted in an insufficient SOE.<sup>131</sup>

## **Changes in Standardized Symptom Scores**

One study found a statistically significant decrease in ADHD symptoms using a standard scale comparing neurofeedback with an attention skills control condition.<sup>132, 193, 194</sup> A second study found no difference between neurofeedback and cognitive training, but did find significant improvements in ADHD symptoms according to parent and teacher reporting for neurofeedback compared with control.<sup>160, 186</sup> A third study compared neurofeedback with standard pharmacologic treatment and a behavioral treatment and found that the group treated with neurofeedback showed greater improvement in a continuous performance test score when compared with each of the other groups.<sup>147</sup> Finally, a fourth study did not find any significant changes between children receiving neurofeedback versus those receiving treatment as usual.<sup>116</sup> The SOE was insufficient given the small sample sizes of all studies and the variation in outcomes reported.

## **Sleep Disturbance**

Only one study assessed sleep disturbance associated with a 12-week course of neurofeedback sessions. This study found no significant difference in postintervention mean scores in the Sleep Disturbance Scale for Children (SDSC) between neurofeedback and physical activity. The single small study resulted in an insufficient SOE.<sup>131</sup>

## **Adverse Effects of Neurofeedback**

No adverse effects from neurofeedback were reported.

## **Strength of Evidence—Neurofeedback**

Table 13 summarizes the SOE for neurofeedback based on this report's included studies. Inconsistent findings and heterogeneous interventions caused the insufficient SOE grades.

**Table 13. Strength of evidence for major outcomes—neurofeedback**

<b>Outcome</b>	<b>No. Studies/ Design (N Patients)</b>	<b>Study Limitations</b>	<b>Directness</b>	<b>Consistency</b>	<b>Precision</b>	<b>Reporting Bias</b>	<b>Findings</b>
Acceptability of treatment	1 RCT (102) 7–17	Low	Direct	NA	Imprecise	None	SOE was insufficient because only one trial that might have been underpowered was identified. <sup>132, 193, 194</sup>
Insufficient							
Behavior change	1 RCT (103) 7–17	Low	Direct	NA	Imprecise	None	SOE was insufficient given findings from only one small study. <sup>131</sup>
Insufficient							
Changes in standardized symptom scores	4 RCTs (353) 7–17	Low	Direct	Inconsistent	Imprecise	Unclear	SOE was insufficient because of the small sample size in the 4 trials and the variation in outcomes reported. <sup>116, 132, 147, 160, 186</sup>
Insufficient							
Sleep disturbance	1 RCT (103) 7–17	Low	Direct	NA	Imprecise	None	SOE was insufficient given findings from only one small study. <sup>131</sup>
Insufficient							

Abbreviations: NA=not applicable; Obs=observational; RCT=randomized controlled trial; SOE=strength of evidence



## Detailed Synthesis—Cognitive Training

Six good-quality<sup>119, 122, 126, 132, 160, 174, 186, 187</sup> and 2 fair-quality<sup>115, 163</sup> studies representing 768 patients evaluated cognitive training interventions. All but one study involved computer-based cognitive training programs, and of those five used a specific brand of intervention (Cogmed). Findings are summarized by outcome and described in Table H-8 in Appendix H. Meta-analysis was not possible given heterogeneity in outcomes and time frame. The specific findings detailed in the table are described below.

### Academic Performance

A single, good-quality RCT found no significant treatment effects in improvement in Wide Range Achievement Test 4 Progress Monitoring Version (WRAT) scores compared with a low-level (placebo) working memory training program that was identical to active intervention with respect to the types of training games utilized and the number of training trials per session, but for which difficulty level was not adjusted according to each user's performance parameters.<sup>119</sup> The SOE was insufficient given the small size of the single included study.

### Acceptability of Treatment

A single study examined parent-rated motivation of children to participate in treatment and the effectiveness of treatment, finding no difference between cognitive training and neurofeedback.<sup>132, 193, 194</sup> The SOE was insufficient given the small size of the single included study.

### Behavior Changes

A good-quality RCT found no significant between-group differences in scores on the Disruptive Behavior Disorder Rating Scale (DBDRS) compared with a partially-active-condition where inhibition and cognitive-flexibility were trained and the working memory-training task was presented in placebo-mode, or to a full placebo-condition.<sup>122</sup> The SOE was insufficient given the small size of the single included study.

### Changes in Standardized Symptom Scores

Of studies examining the Cogmed cognitive training programs,<sup>115, 119, 126, 163, 174, 187</sup> three of these studies<sup>119, 126, 174, 187</sup> found no significant changes on standard ADHD scales compared with low-level working memory games or a waitlist control. Two studies found a significant improvement on standardized scales.<sup>115, 163</sup> Of those, one compared the Cogmed intervention with a waitlist control, and at 4 months the treatment group had significantly better scores on parent report on the ADHD Index, Conners Cognitive Problems/Inattention, Conners Hyperactivity Parent, and BRIEF Metacognition Index.<sup>115</sup> No teacher measures showed any significant changes. In the other study, there was improvement at 2 and 6 months on the parent rated BRIEF Metacognition Index, and at 2 months (but not 6 months) on the BRIEF parent-rated behavioral index.<sup>163</sup>

Three other studies examined computer-based cognitive training programs.<sup>122, 132, 160, 186, 193, 194</sup> One compared the Braingame program to a computer game that did not have any cognitive training characteristics, finding no significant effect of this type of training.<sup>122</sup> The other two were studies comparing neurofeedback with computer-based cognitive training.<sup>132, 160, 186, 193, 194</sup> There was no difference between cognitive training and control in one,<sup>160, 186</sup> but neurofeedback

was found to be superior to both. The other directly compared the two interventions and found neurofeedback superior to cognitive attention skills training on a standardized ADHD scale.<sup>132, 193, 194</sup>

Overall the evidence from these studies provided low SOE that cognitive training improved standardized symptoms scores.

### **Adverse Effects of Cognitive Training**

No adverse effects from cognitive training were reported in any of the included studies.

### **Findings in Relation to What Is Already Known—Cognitive Training**

The 2011 review did not evaluate cognitive training. Our current systematic review demonstrates that cognitive training may improve symptoms scores (SOE=low).

### **Strength of Evidence—Cognitive Training**

Table 14 summarizes the SOE for cognitive training based on this report's included studies. Small numbers of studies with imprecise findings caused insufficient SOE grades for all outcomes other than changes in standardized symptom scores which had low SOE for a benefit with cognitive training.

**Table 14. Strength of evidence for major outcomes—cognitive training**

<b>Outcome</b>	<b>No. Studies/ Design (N Patients)</b>	<b>Study Limitations</b>	<b>Directness</b>	<b>Consistency</b>	<b>Precision</b>	<b>Reporting Bias</b>	<b>Findings</b>
<b>SOE Grade</b> Academic performance	1 RCT (85) 7–17	Low	Direct	NA	Imprecise	None	SOE was insufficient because only one small trial was identified. <sup>119</sup>
Insufficient							
Acceptability of treatment	1 RCT (102) 7–17	Low	Direct	NA	Imprecise	None	SOE was insufficient because only one small trial was identified. <sup>132, 193, 194</sup>
Insufficient							
Behavior changes	1 RCT (89) 7–17	Low	Direct	NA	Imprecise	None	SOE was insufficient because only one small trial was identified. <sup>122</sup>
Insufficient							
Changes in standardized symptom scores	9 RCTs (768) 7–17, all through 17	Medium	Direct	Inconsistent	Imprecise	None	Cognitive training may improve symptom scores. <sup>115, 119, 122, 126, 132, 160, 163, 174, 186, 187, 193, 194</sup>
Low							

Abbreviations: NA=not applicable; Obs=observational; RCT=randomized controlled trial; SOE=strength of evidence

## **Detailed Synthesis—Cognitive Behavioral Therapy**

One good-quality<sup>164</sup> and 1 fair-quality<sup>117, 185</sup> study representing 278 patients evaluated CBT. Findings are summarized by outcome and described below and in Table H-9 in Appendix H.

### **Changes in Standardized Symptom Scores**

Both studies found a statistically significant improvement in ADHD symptom scores for the CBT program as opposed to the control condition after the initial treatment (low SOE). One fair-quality study<sup>117, 185</sup> followed patients through 12 months and found the CBT condition maintained superiority in terms of ADHD scale scores. In addition, this study found that there was a greater improvement in the CBCL conduct disorder/oppositional defiant disorder subscale both immediately after treatment and at 12 months.

### **Depression or Anxiety**

The fair-quality study<sup>117, 185</sup> examined changes in the depression anxiety scale scores and found that the CBT group had greater improvement in depression and anxiety scores as opposed to the control group at 3 months and that the depression score improvements were maintained at 12 months. The SOE was insufficient given the evidence coming from only a single included study with medium risk of bias.

### **Adverse Effects of CBT**

No adverse effects from CBT were reported.

## **Strength of Evidence—Cognitive Behavioral Therapy**

Table 15 summarizes the SOE for CBT based on this report's included studies. Small numbers of studies with imprecise findings caused insufficient SOE grades for all outcomes other than changes in standardized symptom scores which had low SOE for a benefit from cognitive behavioral therapy.

**Table 15. Strength of evidence for major outcomes—cognitive behavioral therapy**

<b>Outcome</b>	<b>No. Studies/ Design (N Patients)</b>	<b>Study Limitations</b>	<b>Directness</b>	<b>Consistency</b>	<b>Precision</b>	<b>Reporting Bias</b>	<b>Findings</b>
Changes in standardized symptom scores	2 RCTs (278) 7–17	Low	Direct	Consistent	Imprecise	Suspect (reasons for drop out not adequately described)	There was statistically significant improvement in ADHD symptoms associated with CBT relative to usual care or a limited CBT intervention. <sup>117, 164, 185</sup>
Low							
Depression or anxiety	1 RCT (159) 7–17	Medium	Direct	NA	Imprecise	Suspect (reasons for drop out not adequately described)	SOE was insufficient because only one small trial was identified. <sup>117, 185</sup>
Insufficient							

Abbreviations: ADHD=attention deficit hyperactivity disorder; CBT=cognitive behavioral therapy; NA=not applicable; RCT=randomized controlled trial; SOE=strength of evidence

## **Detailed Synthesis—Child or Parent Training or Behavioral Interventions**

Ten good-quality RCTs,<sup>108, 112, 129, 134, 150, 152, 161, 167-169</sup> 2 fair-quality RCTs,<sup>138, 159</sup> and 1 fair-quality observational study<sup>127</sup> representing 1,583 patients evaluated child or parent training or behavioral interventions. These included a range of different types of non-CBT behavioral interventions including organizational skills, social skills, attention skills, positive parenting, psychoeducational, sleep hygiene/behavioral, or parent or teacher behavioral training interventions. Findings are summarized by outcome and described below and in Table H-10 in Appendix H. Note that the interventions were mixed in terms of their strategies: some were interventions which helped parents learn how to cope with their own emotions, most strategies focused on how parents could manage specific behaviors from their children with ADHD.

### **Academic Performance**

Three RCTs of child-focused interventions evaluated academic performance outcomes. These trials found no change compared with the control condition (low SOE). One of these trials evaluated organizational skills training,<sup>108</sup> one evaluated social skills training,<sup>161</sup> and one evaluated an adolescent-specific, skills-based therapy called Supporting Teens' Autonomy Daily (STAND).<sup>159</sup>

### **Acceptability of Treatment**

The single RCT that assessed the outcome of acceptability of treatment found that parent satisfaction with process was superior with the behavioral intervention compared to the control group.<sup>167</sup> The SOE was insufficient given the small size of the single included study.

### **Changes in Standardized Symptom Scores**

Three RCTs examined psychoeducational programs for parents or families of children with ADHD.<sup>112, 129, 168</sup> All three found significant improvement on some standard measures of ADHD symptoms with child or parent training (moderate SOE). One study that examined children 6 to 16 years of age compared psychoeducation with a general counseling control and found significant improvement in overall ADHD scores for the intervention group compared with control.<sup>112</sup> Another study comparing psychoeducation with a control in children 5–18 years of age found significantly better ADHD scores on a standard scale at 12 weeks for overall symptoms and attention, and at 12 months there was significant difference only on inattention/cognition standard scores.<sup>168</sup> Another study compared a structured psychoeducation program for family members of children with ADHD to usual care, with outcomes assessed at 6 weeks and 6 months.<sup>129</sup> This study demonstrated significant improvements over time associated with psychoeducation in the CPRS index, CPRS inattention and cognition, and CPRS hyperactivity and impulsivity.

Other parenting interventions included a positive parenting program that did not find a strong effect on ADHD symptoms, but did find a significant effect on overall impairment rating compared to a behavioral parenting program and an even greater effect compared to a waitlist control.<sup>167</sup> There was a significant improvement in ADHD symptoms when comparing the positive parenting program to the waitlist control. Another parenting intervention that evaluated sleep hygiene and behavioral training for parents found improvements at 6 months in all parent-reported ADHD scores, but no difference between controls on teacher reported scores.<sup>169, 184</sup>

Another parent study compared children on MPH who received MPH alone or medication plus parent training; this study found no significant difference between groups.<sup>127</sup>

A combined behavioral training intervention for parents and teachers found no changes in ADHD scores at 10 weeks as reported by parents or teachers, but at 3 months postintervention did find improvement in parent reported ADHD scale scores, but not on teacher report.<sup>150</sup>

Another combined intervention study compared a combination of parent group and child group interventions with parent intervention alone or community care in general.<sup>152</sup> This study found improvement on symptoms of the combined groups, compared to both comparison conditions at 3 months. At approximately 6 months the improvements in parent reported ADHD symptoms were maintained. In terms of functional impairment there was no difference at 3 months between groups, while at 6 months the parent-reported, but not teacher-rated, functional impairment was improved in the intervention as compared to the parent group alone or the community control. One study examined social skills for children with a parallel parent group and found significant changes on the CBCL attention problem subscale as compared to a control condition including treatment as usual.<sup>138</sup> Another study evaluated an adolescent-specific, skills-based therapy called STAND over the course of 6 months.<sup>159</sup> This study found that the STAND intervention was associated with statistically significant improvements in standardized scores that assessed the severity of ADHD symptoms. Another study that evaluated the impact of 10 parent-child weekly cognitive-functional (Cog-Fun) intervention sessions found that the Cog-Fun intervention was associated with significant improvements in the CPRS-R global index total score when rated by parents but not when rated by teachers.<sup>134</sup>

In summary, of the 11 studies that included a parent intervention component, 9 showed improvement in some standard measure of ADHD symptoms, often on parent report (Moderate SOE). One of the two studies that did not show improvement on ADHD symptoms did show improvement on functional impairment.

## **Depression or Anxiety**

No differences in depression and anxiety were found in an RCT that evaluated sleep hygiene counseling for parents combined with behavior therapy.<sup>169, 184</sup> The SOE was insufficient given the evidence of a single included study.

## **Functional Impairment**

A good-quality RCT found that Child Life and Attention Skills Treatment was associated with improved parent and teacher CGI scores relative to parent training alone or no intervention.<sup>152</sup> Another good-quality RCT<sup>167</sup> found that the Strategies to Enhance Positive Parenting (STEPP) program was more effective at reducing functional impairment than a waitlist control, but not more effective than traditional behavioral parent training. Another study compared a structured psychoeducation program for family members of children with ADHD to usual care, with outcomes assessed at 6 weeks and 6 months.<sup>129</sup> This study demonstrated significant improvements over time associated with CGI global improvement, but not in the CTRS index of CGI severity of illness. The SOE was insufficient given the evidence of a single included study.

## **Sleep Disturbance**

Sleep habits at 6 months were improved in a good-quality study which randomized patients to an intervention that combined sleep hygiene counseling for parents and behavior therapy. SOE was insufficient given imprecision of the findings and that there was only one study<sup>169, 184</sup>

## **Workforce Participation**

A single RCT found that an intervention that combined sleep hygiene counseling for parents and behavior therapy found that the intervention was associated with fewer days late for work and fewer missed days of work for the parents (insufficient SOE)<sup>169, 184</sup>

## **Adverse Effects of Child or Parent Training or Behavioral Interventions**

No adverse effects of these behavioral treatments were examined.

## **Findings in Relation to What Is Already Known—Child or Parent Training or Behavioral Interventions**

The 2011 report<sup>4</sup> identified 31 studies that evaluated parent behavior training for preschoolers with disruptive behavior disorders. Of these, three RCTs included only preschoolers who exhibited ADHD symptoms but who were not necessarily formally diagnosed with ADHD.<sup>206-208</sup> All three RCTs demonstrated significant improvement in the preschoolers' behavior or symptoms relative to usual care only. In contrast, this updated review provides results from 12 RCTs and 1 observational study that evaluated the effectiveness of either parent or child behavior training on outcomes among children with a wider age range who had been formally diagnosed with ADHD. Behavioral therapy appears effective for certain children with ADHD, however there are still questions related to the comparative effectiveness with pharmacotherapy alone or in combination with behavioral therapy. This reflects the complex nature of ADHD and the specific factors related to the child including age.

## **Strength of Evidence—Child or Parent Training or Behavioral Interventions**

Table 16 summarizes the SOE for child or parent training or behavioral interventions based on this report's included studies. Small numbers of studies with imprecise findings caused insufficient SOE grades for all outcomes other than academic performance (SOE=low) and changes in standardized symptom scores (SOE=moderate) which did not demonstrate an effect of child or parent training/behavioral interventions.



**Table 16. Strength of evidence for major outcomes—child or parent training or behavioral interventions**

<b>Outcome</b>	<b>No. Studies/ Design (N Patients)</b>	<b>Study Limitations</b>	<b>Directness</b>	<b>Consistency</b>	<b>Precision</b>	<b>Reporting Bias</b>	<b>Findings</b>
Academic performance	2 RCTs (356) 6 and under, 7–17	Low	Direct	Consistent	Imprecise	None	There were no differences in academic performance associated with organizational skills or social skills training relative to no intervention. <sup>108, 161</sup>
Low							
Acceptability of treatment	1 RCT (120) All through 17	Low	Direct	NA	Imprecise	None	SOE was insufficient because only one small trial was identified. <sup>167</sup>
Insufficient							
Changes in standardized symptom scores	8 RCTs, 1 Obs (966) 7–17, all through 17	Low	Direct	Consistent	Imprecise	None	There was a significant improvement in ADHD symptoms associated with child or parent training or sleep hygiene. <sup>112, 127, 129, 138, 150, 152, 167-169, 184</sup>
Moderate							
Depression or anxiety	1 RCT (244) All through 17	Low	Direct	NA	Imprecise	None	SOE was insufficient because only one small trial was identified. <sup>169, 184</sup>
Insufficient							
Functional impairment	1.RCT (199) 7–17	Low	Direct	NA	Imprecise	None	SOE was insufficient because only one small trial was identified. <sup>152</sup>
Insufficient							
Sleep disturbance	1 RCT (244) All through 17	Low	Direct	NA	Imprecise	None	SOE was insufficient because of findings from only one study which was imprecise <sup>169, 184</sup>
Insufficient							
Workforce participation	1 RCT (244) All through 17	Low	Direct	NA	Imprecise	None	SOE was insufficient because of findings from only one study which was imprecise. <sup>169, 184</sup>
Insufficient							

Abbreviations: NA=not applicable; Obs=observational; RCT=randomized controlled trial; SOE=strength of evidence

## **Detailed Synthesis—Omega-3/6 Fatty Acid Supplementation**

We identified five good-quality,<sup>109, 133, 139, 142, 143</sup> two fair-quality,<sup>154, 165</sup> and one poor-quality studies<sup>136</sup> representing 1,130 patients evaluated essential fatty acid supplementation. Seven of these trials compared essential fatty acid supplementation with placebo. Of these, the active intervention was omega-3 alone in four trials,<sup>133, 136, 142, 165, 191</sup> omega-6 alone in 1 trial,<sup>154</sup> and a combination of omega-3 and omega-6 in 2 trials.<sup>139, 195</sup> Treatment duration ranged between 7-weeks and 6-months. The enrolled children ranged 6–18 years of age and the range of included male children was 59.4 percent to 77.3 percent across the trials. Inclusion of ADHD subtypes varied with a mixed grouping of ADHD subtypes included in 3 of the trials, a specific oppositional sub-type in one trial and three trials did not specify an ADHD sub-type of included children. One of the 8 trials<sup>165</sup> measured outcomes of ADHD symptoms with scales that were not part of our inclusion criteria and were excluded from the meta-analysis. The remaining 7 trials measured ADHD symptoms with the Conners Scale (full or abbreviated version) or the ADHD Rating Scale. Findings are summarized below by outcome below and described in Table H-11 in Appendix H. Overall, supplementation was not observed to be effective.

### **Behavior Changes**

A good-quality RCT did not find a difference in the proportion of patients who were prone to crying or who talked less after supplementation with omega-3 fatty acids, relative to placebo.<sup>191</sup> The SOE was insufficient given that the imprecision in the findings and the small number of participants who experienced the outcomes of interest.

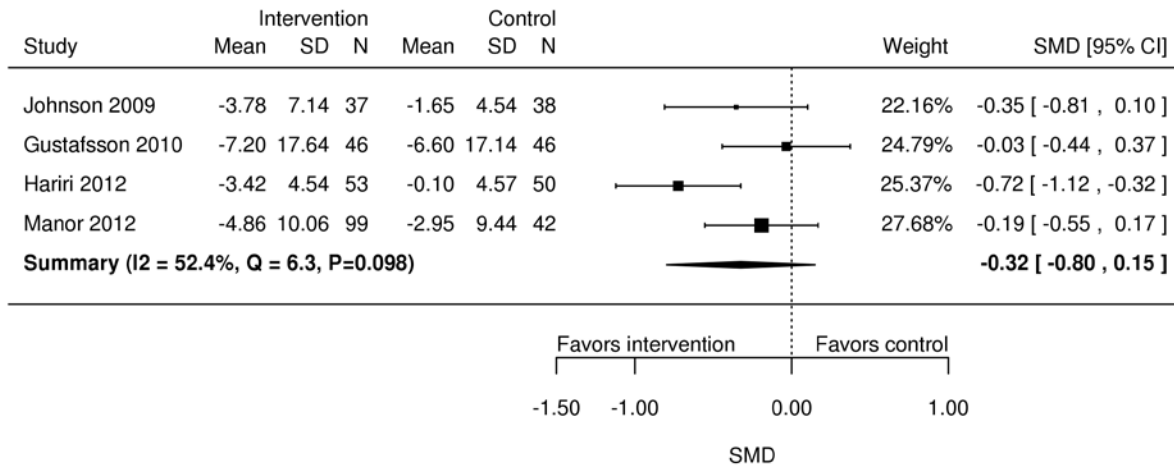
### **Changes in Standardized Symptom Scores**

We conducted meta-analyses of 4 eligible RCTs that reported parent ratings of ADHD total symptoms and 3 eligible RCTs that reported teacher ratings of ADHD total symptoms. These analyses demonstrated no significant differences between omega 3/6 and placebo for either parent or teacher ratings (moderate SOE).

### **Parent Ratings of ADHD Total Symptoms**

We summarized four RCTs, with random-effects meta-analysis, examining omega-3/6 supplementation versus placebo only with the outcome of parent-rated total ADHD symptoms.<sup>133, 136, 139, 142, 191, 195</sup> Effects were consistent and studies demonstrated moderate heterogeneity; however, no statistical evidence was found that omega-3/6 was superior to placebo with the outcome of parent rating of ADHD total symptoms (n=411, SMD -0.32, 95% CI -0.80 to 0.15,  $I^2=52.4%$ ,  $Q=6.3$ ,  $p=0.098$ ) (Figure 3). The three trials that we excluded from the meta-analysis found no significant differences between omega-3/6 versus placebo, versus usual care, or between eicosapentaenoic acid and versus docosahexaenoic acid for parent ratings of ADHD total symptoms.

**Figure 3. Meta-analysis for effects of omega-3/6 supplementation compared with placebo—parent ratings**

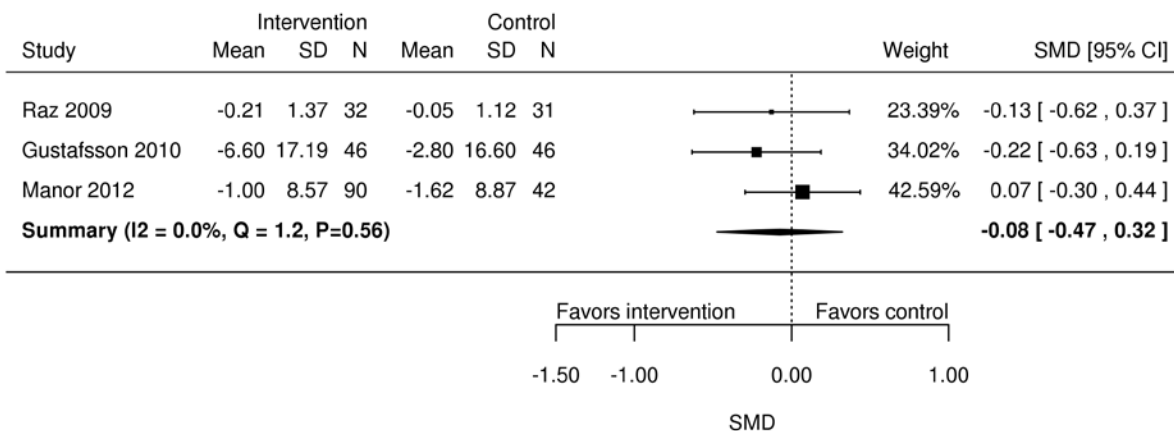


CI=confidence interval; SD=standard deviation; SMD=standardized mean difference

### Teacher Ratings of ADHD Total Symptoms

We summarized three RCTs, with random effects meta-analysis, examining omega-3/6 versus placebo with the outcome of teacher rated total ADHD symptoms.<sup>133, 142, 154, 191</sup> Effects were fairly consistent and studies were homogeneous; however, we found no statistical evidence that omega-3/6 was superior to placebo with the outcome of teacher rated total ADHD symptoms (n=287, SMD -0.08, 95% CI -0.47 to 0.32, I<sup>2</sup>=0.0%; Q=1.2, p=0.56) (Figure 4). The two RCTs excluded in this meta-analysis<sup>109, 165</sup> also found no significant difference between omega-3 and placebo or usual care for teacher ratings of ADHD total symptoms.

**Figure 4. Meta-analysis for effects of omega-3/6 supplementation compared with placebo—teacher ratings**



CI=confidence interval; SD=standard deviation; SMD=standardized mean difference

### Functional Impairment

A good-quality RCT found no difference in Clinical Global Impression scores associated with omega-3 fatty acid supplementation compared with placebo.<sup>139, 195</sup> The SOE was insufficient given evidence from one small included study.

## **Adverse Effects of Omega-3 Fatty Acid Supplementation**

A single good-quality RCT reported the incidence of adverse effects associated with omega-3 fatty acid supplementation compared with placebo.<sup>142, 191</sup> This trial did not report statistically significant between-group differences for any of the following adverse effects: chemical leukoderma; elevated blood pressure; sleep disturbance; tics or other movement disorders; gastrointestinal symptoms; growth suppression; increased heart rate; personality change; or weight decrease. The SOE was insufficient however given the small number of patients in either arm that experienced any of the outcomes of interest and the inconsistency between positive, negative, and no effects that were observed for individual outcomes at varying time points.

## **Findings in Relation to What Is Already Known—Omega-3 Fatty Acid Supplementation**

The effectiveness of omega-3/6 for the treatment of ADHD symptoms was not included in the 2011 report.<sup>4</sup> However, a systematic review and meta-analysis comparing omega-3 fatty acid supplementation with placebo was conducted in 2011 by Bloch and Qawasmi.<sup>204</sup> Using only PubMed, they searched from database inception to December 2010. Their findings, using fixed-effects meta-analysis, indicated a small significant effect (SMD 0.31, 95% CI 0.16 to 0.47) on ADHD symptoms with omega-3 use associated with improved symptoms. Due to an overlap in search dates, our review includes 3 of the 10 studies that were also included in the Bloch and Qawasmi review. Our inclusion and exclusion criteria differed from that review as we excluded studies where the sample size was less than 50 participants.<sup>209</sup> Given the differences in measurement and perspective, our review also conducted a separate meta-analysis for teacher- and parent-reported ADHD symptoms whereas the Bloch and Qawasmi review included only the parent- or teacher-reported ADHD symptoms depending on the number of completed ADHD subscales. Our meta-analysis (Figure 3) used random-effects models and corrected the standard errors for a small sample meta-analysis using the Knapp-Hartung method, both techniques that create a more conservative confidence interval.<sup>210</sup> As such, due to differences in search dates, inclusion/exclusion criteria and analytical approaches, differences in pooled estimates between the two reviews would be expected. Note that given the wider confidence interval within our analysis compared to the Bloch and Qawasmi meta-analysis, we did not find evidence of a benefit.

## **Strength of Evidence—Omega-3 Supplementation**

Table 17 summarizes the SOE for omega-3 supplementation based on this report's included studies. Small numbers of studies with imprecise findings caused insufficient SOE for all outcomes other than changes in standardized symptom scores, for which we found moderate SOE for no difference.

**Table 17. Strength of evidence for major outcomes—omega-3 fatty acid supplementation**

Outcome	No. Studies/ Design (N Patients)	Study Limitations	Directness	Consistency	Precision	Reporting Bias	Findings
SOE Grade	Age Category						
Behavior changes	1 RCTs (200) 7–17	Low	Direct	NA	Imprecise	None	SOE was insufficient because only one trial was identified with imprecise findings and a small number of events of the outcomes of interest. <sup>142, 191</sup>
Insufficient							
Changes in standardized symptom scores	7 RCTs (795) 7–17	Low	Direct	Consistent	Precise	None	Two meta-analyses of 4 and 3 good-quality studies respectively found no significant differences between Omega-3/6 and placebo for parent ratings (n=411, SMD -0.32, 95% CI -0.80 to 0.15, I <sup>2</sup> =52.4%, Q=6.3, p=0.098) or teacher ratings of total ADHD symptoms (n=287, SMD -0.08, 95% CI -0.47 to 0.32, I <sup>2</sup> =0.0%; Q=1.2, p=0.56). <sup>133, 136, 139, 142, 143, 154, 190, 191, 195</sup>
Moderate							
Functional impairment	1 RCT (75) 7–17	Low	Direct	NA	Imprecise	None	SOE was insufficient because only one small trial was identified. <sup>139, 195</sup>
Insufficient							
Chemical Leukoderma	1 RCT (200) 7–17	Low	Direct	NA	Imprecise	None	SOE was insufficient given the small number of patients in either arm that experienced any of the outcomes of interest and the inconsistency between positive, negative, and no effects that were observed for individual adverse effects at varying timepoints. <sup>142, 191</sup>
Insufficient							
Elevated blood pressure	1 RCT (200) 7–17	Low	Direct	NA	Imprecise	None	SOE was insufficient given the small number of patients in either arm that experienced any of the outcomes of interest and the inconsistency between positive, negative, and no effects that were observed for individual adverse effects at varying timepoints. <sup>142, 191</sup>
Insufficient							
Sleep disturbance	1 RCT (200) 7–17	Low	Direct	NA	Imprecise	None	SOE was insufficient given the small number of patients in either arm that experienced any of the outcomes of interest and the inconsistency between positive, negative, and no effects that were observed for individual adverse effects at varying timepoints. <sup>142, 191</sup>
Insufficient							
Tics or other movement disorders	1 RCT (200) 7–17	Low	Direct	NA	Imprecise	None	SOE was insufficient given the small number of patients in either arm that experienced any of the outcomes of interest and the inconsistency between positive, negative, and no effects that were observed for individual adverse effects at varying timepoints. <sup>142, 191</sup>
Insufficient							

<b>Outcome</b>	<b>No. Studies/ Design (N Patients)</b>	<b>Study Limitations</b>	<b>Directness</b>	<b>Consistency</b>	<b>Precision</b>	<b>Reporting Bias</b>	<b>Findings</b>
Gastrointestinal symptoms	1 RCT (200) 7–17	Low	Direct	NA	Imprecise	None	SOE was insufficient given the small number of patients in either arm that experienced any of the outcomes of interest and the inconsistency between positive, negative, and no effects that were observed for individual adverse effects at varying timepoints. <sup>142, 191</sup>
Insufficient							
Growth suppression	1 RCT (200) 7–17	Low	Direct	NA	Imprecise	None	SOE was insufficient given the small number of patients in either arm that experienced any of the outcomes of interest and the inconsistency between positive, negative, and no effects that were observed for individual adverse effects at varying timepoints. <sup>142, 191</sup>
Insufficient							
Increased heart rate	1 RCT (200) 7–17	Low	Direct	NA	Imprecise	None	SOE was insufficient given the small number of patients in either arm that experienced any of the outcomes of interest and the inconsistency between positive, negative, and no effects that were observed for individual adverse effects at varying timepoints. <sup>142, 191</sup>
Insufficient							
Personality change	1 RCT (200) 7–17	Low	Direct	NA	Imprecise	None	SOE was insufficient given the small number of patients in either arm that experienced any of the outcomes of interest and the inconsistency between positive, negative, and no effects that were observed for individual adverse effects at varying timepoints. <sup>142, 191</sup>
Insufficient							
Weight decrease	1 RCT (200) 7–17	Low	Direct	NA	Imprecise	None	SOE was insufficient given the small number of patients in either arm that experienced any of the outcomes of interest and the inconsistency between positive, negative, and no effects that were observed for individual adverse effects at varying timepoints. <sup>142, 191</sup>
Insufficient							

Abbreviations: NA=not applicable; Obs=observational; RCT=randomized controlled trial; SOE=strength of evidence

## **Detailed Synthesis—Herbal Interventions or Dietary Approaches**

Three good-quality<sup>125, 158, 172</sup> and 3 fair-quality<sup>111, 140, 144</sup> studies representing 486 patients evaluated herbal interventions or dietary approaches. Findings are summarized by outcome and described in Table H-12 in Appendix H. A wide range of interventions were evaluated in these studies, including an elimination diet, ginkgo biloba, Memomet syrup, zinc, and other patented herbal preparations. Although some interventions appeared effective, findings are difficult to interpret in studies that also allowed use of pharmacotherapy.

### **Behavior Changes**

One good-quality RCT found that ginkgo biloba was associated with improved parent and teacher ADHD-RS-Inattention scores but not ADHD-RS-Hyperactivity scores relative to placebo.<sup>158</sup> One fair-quality RCT found that an 8-week course of vitamin D supplementation given with MPH was associated with improvement in Weekly Parent Ratings of Evening and Morning Behavior (WPREMB) evening symptom scores and total score, but not WPREMB morning scores compared to MPH and placebo.<sup>144</sup> A third RCT (fair-quality) did not find statistically significant differences between patients on placebo and those taking zinc supplementation.<sup>111</sup> The variability in interventions, outcomes assessed and the inconsistency in the findings resulted in an insufficient SOE.

### **Changes in Appetite**

Two fair-quality RCTs did not report statistical significance of the proportion of patients in each study arm who reported changes in appetite associated with two doses of zinc supplementation compared with placebo,<sup>111</sup> or an herbal preparation compared with placebo.<sup>140</sup> Given the variability in interventions, the small number of patients in each study experiencing the outcome, and differential loss to followup resulted in insufficient SOE.

### **Changes in Standardized Symptom Scores**

Four RCTs reported changes in symptom scores. One demonstrated improvement in ADHD-RS scores associated with an elimination diet relative to a nonrestricted diet.<sup>172</sup> The other three RCTs found that neither Memomet syrup nor zinc supplementation nor vitamin D improved ADHD symptoms compared with placebo (low SOE).<sup>111, 125, 144</sup>

### **Gastrointestinal Symptoms**

Two RCTs did not report statistical significance of the proportion of patients in each study arm who reported stomach aches or other gastrointestinal symptoms associated with two doses of zinc supplementation<sup>111</sup> or herbal preparation<sup>140</sup> compared with placebo. The variability in interventions, outcomes assessed and the loss to followup resulted in insufficient SOE.

### **Adverse Effects of Herbal Interventions or Dietary Approaches**

An RCT that evaluated two doses of zinc supplementation compared with placebo<sup>111</sup> did not report statistical significance in the difference in proportion of patients in each study arm who reported changes in appetite, stomach aches or other gastrointestinal symptoms, sleep disturbance, harm to self or others, or stereotypical behaviors. Another RCT found no between-group differences between an herbal preparation and placebo in gastrointestinal symptoms, emotional lability, accidental injury, or sleep disturbance.<sup>140</sup> The SOE was considered

insufficient because identified studies varied in the interventions and outcomes assessed and had differential loss to follow up.

### **Strength of Evidence—Herbal Interventions or Dietary Approaches**

Table 18 summarizes the SOE for herbal interventions or dietary approaches based on this report's included studies. Small numbers of studies with imprecise findings caused insufficient SOe grades for all outcomes other than changes in standardized symptom scores.



**Table 18. Strength of evidence for major outcomes—herbal interventions or dietary approaches**

<b>Outcome</b>	<b>No. Studies/ Design (N Patients)</b>	<b>Study Limitations</b>	<b>Directness</b>	<b>Consistency</b>	<b>Precision</b>	<b>Reporting Bias</b>	<b>Findings</b>
<b>SOE Grade</b>	<b>Age Category</b>						
Behavior changes	3 RCTs (172) All through 17	Low	Direct	Inconsistent	Imprecise	None	The SOE was considered insufficient because identified studies varied in intervention and outcomes assessed and then demonstrated inconsistent findings. <sup>158 111, 144</sup>
Insufficient							
Changes in appetite	2 RCTs (172) 7–17	Medium	Direct	Consistent	Imprecise	None	The SOE was considered insufficient given the variability in interventions, the small number of patients in each study experiencing the outcome, and differential loss to followup. <sup>111, 140</sup>
Insufficient							
Changes in standardized symptom scores	4 RCTs (292) 7–17, all through 17	Low	Direct	Inconsistent	Imprecise	None	An elimination diet improved ADHD-RS scores relative to a non-restricted diet, <sup>172</sup> but did not find a reduction in ADHD symptoms relative to placebo for either Memomet syrup or zinc supplementation. <sup>111, 125, 144</sup>
Low							
Gastrointestinal symptoms	2 RCTs (172) 7–17	Medium	Direct	Inconsistent	Imprecise	None	The SOE was considered insufficient because identified studies varied in the interventions and outcomes assessed and had differential loss to follow up <sup>111, 140</sup>
Insufficient							
Mood disorders	1 RCT (120) 7–17	Medium	Direct	NA	Imprecise	None	The SOE was considered insufficient because only one study was identified which had imprecise findings and differential loss to follow up. <sup>140</sup>
Insufficient							
Motor vehicle collisions	1 RCT (120) 7–17	Medium	Direct	NA	Imprecise	None	The SOE was considered insufficient because only one small study was identified. <sup>140</sup>
Insufficient							
Sleep disturbance	2 RCTs (172) 7–17	Medium	Direct	Consistent	Imprecise	None	The SOE was considered insufficient because identified studies varied in the interventions and outcomes assessed and had differential loss to follow up <sup>111, 140</sup>
Insufficient							
Suicide ideation	1 RCT (52) 7–17	Medium	Direct	NA	Imprecise	None	The SOE was considered insufficient because only one small study was identified. <sup>111</sup>
Insufficient							
Tics or other movement disorders	1 RCT (52) 7–17	Medium	Direct	NA	Imprecise	None	The SOE was considered insufficient because only one small study was identified. <sup>111</sup>
Insufficient							

Abbreviations: NA=not applicable; Obs=observational; RCT=randomized controlled trial; SOE=strength of evidence

## **Detailed Synthesis—Other Approaches**

One good-quality<sup>107</sup> and 8 fair-quality studies<sup>128, 137, 145, 149, 153, 170, 171, 175</sup> representing 1,286 enrolled patients evaluated other approaches. These studies looked at a range of programs including community programs and programs that addressed mentoring and parent support,<sup>128</sup> multisystemic intervention at school and with parents,<sup>153, 170</sup> in-home family training intervention,<sup>107</sup> a general parenting program,<sup>175</sup> using melatonin as an adjunct treatment, acupuncture, and a homeopathic intervention. This diverse range of interventions share some features with other interventions with several having parent components,<sup>107, 128, 153, 170, 175</sup> but each were different from typical parent focused interventions in that there were other major components or they were generic parenting programs. Findings are summarized by outcome and described in Table H-13 in Appendix H. Neither the Challenging Horizons Program – after school version nor the Family School Success – Early Elementary Program improved academic performance (SOE=low). The SOE was insufficient for all other outcomes for each of the interventions considered.

## **Findings in Relation to What Is Already Known—Other Approaches**

The 2011 report<sup>4</sup> identified 7 studies that examined multiple component psychosocial and/or behavioral interventions for preschool children with disruptive behavior disorder. Of these, five RCTs included only preschoolers who exhibited ADHD symptoms but who were not necessarily formally diagnosed with ADHD.<sup>211-215</sup> All five of these RCTs demonstrated significant improvement in the preschoolers' behavior or symptoms relative to their comparison groups, most of which were usual care only. In contrast, this updated review provides results from two RCTs that examined a multiple component intervention for children specifically diagnosed with ADHD that included both school and parent components.<sup>153, 170</sup> Findings of these two studies are summarized by outcome and described in Table H-13 in Appendix H. Despite the support for behavioral interventions from the 2011 report, this report found insufficient SOE to evaluate the impact of these interventions on ADHD symptoms. In part, this is because we only included studies where children received formal diagnosis of ADHD.

## **Strength of Evidence—Other Approaches**

Table 19 summarizes the SOE for other approaches based on this report's included studies. Small numbers of studies with imprecise findings caused insufficient SOE grades for all outcomes other than academic performance.

**Table 19. Strength of evidence for major outcomes—other approaches**

<b>Outcome</b>	<b>No. Studies/ Design (N Patients)</b>	<b>Study Limitations</b>	<b>Directness</b>	<b>Consistency</b>	<b>Precision</b>	<b>Reporting Bias</b>	<b>Findings</b>
<b>SOE Grade</b> Academic performance	3 RCTs (586) 7–17, all through 17	Medium	Direct	Consistent	Imprecise	None	Neither the Challenging Horizons Program (After School version) nor the Family School Success (Early Elementary) interventions were found to improve academic performance in 3 fair-quality RCTs. <sup>128, 153, 170</sup>
Low							
Behavior changes	4 RCTs (508) 6 and under, 7–17, all through 17	Medium	Direct	Consistent	Imprecise	Suspect (given dropout and lack of clarity in reporting findings)	The SOE was considered insufficient because of concerns about risk of reporting bias and lack of precision in study results. <sup>107, 145, 149, 171, 188</sup>
Insufficient							
Changes in appetite	1 RCT (60) 7–17	Medium	Direct	NA	Imprecise	None	The SOE was considered insufficient because only one small study was identified. <sup>145, 188</sup>
Insufficient							
Changes in standardized symptom scores	3 RCTs (252) 7–17, all through 17	Medium	Direct	Consistent	Imprecise	None	The SOE was considered insufficient because of lack of precision across the 3 fair-quality studies with varying mean changes between different standardized scores. <sup>137, 145, 175, 188</sup>
Insufficient							
Functional impairment	1 RCT (326) 7–17	Medium	Direct	NA	Imprecise	None	The SOE was considered insufficient because only one small study was identified. <sup>128</sup>
Insufficient							
Gastrointestinal symptoms	1 RCT (60) 7–17	Medium	Direct	NA	Imprecise	None	The SOE was considered insufficient because only one small study was identified. <sup>145, 188</sup>
Insufficient							
Sleep disturbance	1 RCTs (60) 7–17	Medium	Direct	NA	Imprecise	None	The SOE was considered insufficient because only one small study was identified. <sup>145, 188</sup>
Insufficient							
Tics or other movement disorders	1 RCT (60) 7–17	Medium	Direct	NA	Imprecise	None	The SOE was considered insufficient because only one small study was identified. <sup>145, 188</sup>
Insufficient							
Weight decrease	1 RCT (60) 7–17	Medium	Direct	NA	Imprecise	None	The SOE was considered insufficient because only one small study was identified. <sup>145, 188</sup>
Insufficient							

Abbreviations: NA=not applicable; Obs=observational; RCT=randomized controlled trial; SOE=strength of evidence

### **Key Question 3: ADHD Monitoring**

KQ 3 examined the comparative safety and effectiveness of different monitoring strategies to evaluate the effectiveness of treatment or changes in ADHD status (e.g., worsening or resolving symptoms). We did not identify any studies that met criteria for inclusion for KQ 3.

# Discussion

## Key Findings and Strength of Evidence

In this Comparative Effectiveness Review (CER), we reviewed 21 studies involving 4,346 patients that evaluated attentional deficit hyperactivity disorder (ADHD) diagnostic strategies for children and adolescents that could be used in the primary care setting and evaluated the impact of being labeled as having ADHD (Key Question [KQ] 1) and 69 studies involving 14,737 patients to evaluate the comparative effectiveness of different pharmacologic and nonpharmacologic therapies for ADHD (KQ 2). Because of variations in “usual care” often used as the comparator, detailed descriptions of the comparator were made and considered in the evaluation of the available evidence. We hoped to evaluate the comparative effectiveness of different follow-up strategies for children and adolescents with ADHD (KQ 3). However, no study was identified that met the criteria for inclusion.

### KQ 1: ADHD Diagnosis

This review focused on evidence evaluating diagnosis in children under 7 years of age or for older children (up to 17 years of age) using novel diagnostic techniques including imaging, electroencephalography (EEG), or assessment of executive function. The strength of evidence (SOE) was insufficient to evaluate the validity of diagnostic approaches for children under 7 years. The Attention and Executive Function Rating Inventory and Childhood Executive Functioning Inventory performed better than the Cambridge Neuropsychological Test Automated Battery for the diagnosis of ADHD in children and adolescents 7 through 17 years of age (strength of evidence [SOE]=low).

Limited information was found regarding the harm of being labeled with ADHD. Only two cross-sectional studies were evaluated, and they only assessed the perspective of parents and teachers. Neither study directly assessed the experience of children or adolescents with ADHD. Therefore, no conclusions could be drawn regarding the impact of ADHD diagnosis.

### KQ 2: ADHD Treatment

ADHD treatment options include pharmacologic and nonpharmacologic therapies. The 2011 AHRQ report highlighted the benefit of psychostimulants for children 6 through 12 years of age and the potential benefit of additional behavior therapy, especially for those with oppositional defiant disorder. For younger children, the 2011 AHRQ report found parent behavioral interventions to be effective

Atomoxetine and MPH were the most common drugs evaluated in the studies included in this review (evaluated in 8 studies). The SOE was insufficient to determine which drug is more effective or whether the side-effect profiles are different. There was also little evidence regarding serious cardiovascular risk with use of these medications.

Of the nonpharmacologic therapies, the SOE since the last review was insufficient to evaluate neurofeedback. Studies since the last review found that child or parent training appear to improve standardized ADHD symptom scores (SOE=moderate) but had no difference in academic performance (SOE=low). Cognitive training and cognitive behavioral therapy was associated with improved standardized symptoms scores (SOE=low each).

The most well-studied nutritional therapy is dietary supplementation with omega-3/6 fatty acids. However, based on our meta-analysis, there was no impact of omega-3/6 supplements on parent or teacher rating scales of ADHD symptoms.

Table 20 summarizes the SOE findings for KQ 2 that were graded as low, moderate, or high.

**Table 20. Summary strength of evidence for major outcomes for KQ 2**

<b>Outcome</b>	<b>No. Studies/ Design (N Patients) Age Category</b>	<b>Findings</b>	<b>SOE Grade</b>
<b>Pharmacologic vs. Placebo Treatments: NA</b>			
<b>Pharmacologic vs. Pharmacologic Treatments</b>			
Gastrointestinal symptoms	3 Obs (1,966) 7–17	Atomoxetine has slightly higher GI effects or disease than MPH. <sup>121, 123, 151</sup>	Low
<b>Pharmacologic vs. Nonpharmacologic Treatments</b>			
Changes in appetite	3 RCTs (212) 7–17	MPH decreased appetite compared to ningdong, omega-3/6 or ginkgo biloba. <sup>114, 141, 155</sup>	Low
Sleep disturbance	4 RCTs (324) 7–17	MPH resulted in increased sleep disturbances compared to ningdong, ginkgo biloba, omega-3/6, or neurofeedback. <sup>114, 141, 155</sup>	Low
<b>Nonpharmacologic vs. Nonpharmacologic or Other Treatments</b>			
<b>Neurofeedback: NA</b>			
<b>Cognitive Training</b>			
Changes in standardized symptom scores	9 RCTs (768) 7–17, all through 17	There is some evidence that cognitive training strategies such as the computer-based Cogmed cognitive training program may reduce ADHD symptoms in the short term but not the long term. <sup>115, 119, 122, 126, 132, 160, 163, 174</sup>	Low
<b>Cognitive Behavioral Therapy</b>			
Changes in standardized symptoms scores	2 RCTs (278) 7–17	CBT improved ADHD symptoms relative to usual care or a limited CBT intervention. <sup>117, 164</sup>	Low
<b>Child or Parent Training or Behavioral</b>			
Changes in standardized symptom scores	8 RCTs, 1 Obs (966) 7–17	ADHD symptoms were significantly improved with child or parent training, sleep hygiene, or behavioral interventions. <sup>112, 127, 129, 138, 150, 152, 167-169, 184</sup>	Moderate
Academic performance	2 RCTs (356) 7–17	There were no differences in academic performance associated with organizational skills or social skills training relative to no intervention. <sup>108, 161</sup>	Low

<b>Outcome</b>	<b>No. Studies/ Design (N Patients) Age Category</b>	<b>Findings</b>	<b>SOE Grade</b>
<b>Omega-3 Supplementation</b>			
Changes in standardized symptom scores	7 RCTs (795) 7–17	Omega-3/6 did not improve parent ratings compared to placebo (SMD -0.32, 95% CI -0.80 to 0.15) or teacher ] (SMD -0.08, 95% CI -0.47 to 0.32). <sup>133, 136, 139, 142, 143, 154, 190, 191, 195</sup>	Moderate
<b>Herbal Interventions or Dietary Approaches</b>			
Changes in standardized symptom scores	3 RCTs (238) 7–17, all through 17	ADHD-RS scores improved with an elimination diet relative to a nonrestricted diet, while ADHD symptoms were not reduced with either Memomet syrup or zinc supplementation relative to placebo. <sup>111, 125, 172</sup>	Low
<b>Other Approaches</b>			
Academic performance	3 RCTs (586) 7–17, all through 17	Neither the Challenging Horizons Program-After School version nor the Family School Success- Early Elementary interventions improved academic performance. <sup>128, 153, 170</sup>	Low

Abbreviations: ADHD=attention deficit hyperactivity disorder; CBT=cognitive behavioral therapy; GI=gastrointestinal; Obs=observational; RCT=randomized controlled trial; RS=rating scale; SMD=standardized mean difference; SOE=strength of evidence



## **Findings in Relation to What Is Already Known**

Table 21 summarizes the differences and similarities in scope across this current systematic review compared with the 2011 review,<sup>4</sup> along with our main findings.

**Table 21. Differences in scope between the 2011 and current evidence reports**

	<b>2011 Report</b>	<b>Current Report</b>
<b>Key Questions (KQs)</b>	<p>This systematic review compared effectiveness and adverse events of interventions for preschoolers at high risk for ADHD; compared long-term effectiveness and adverse events of interventions for ADHD among persons of all ages; and described how identification and treatment for ADHD varied.</p> <p>Specifically, the KQs included:</p> <ol style="list-style-type: none"> <li>1. Among children younger than 6 years of age with ADHD or disruptive behavior disorders, what are the effectiveness and adverse event outcomes following treatment?</li> <li>2. Among people 6 years of age or older with ADHD, what are the effectiveness and adverse event outcomes following 12 months or more of any combination of followup or treatment, including, but not limited to, 12 months or more of continuous treatment?</li> <li>3. How do (a) underlying prevalence of ADHD and (b) rates of diagnosis (clinical identification) and treatment for ADHD vary by geography, time period, provider type, and sociodemographic characteristics?</li> </ol>	<p>This systematic review updates and extends two previous systematic evidence reviews and focuses on the comparative effectiveness of methods to establish the diagnosis of ADHD, updates the comparative effectiveness of pharmacologic and nonpharmacologic treatments, and evaluates different monitoring strategies in the primary care setting for individuals from birth through 17 years of age.</p> <p>Specifically, the KQs include:</p> <ol style="list-style-type: none"> <li>1. For the diagnosis of ADHD: <ol style="list-style-type: none"> <li>a. What is the comparative diagnostic accuracy of approaches that can be used in the primary care practice setting or by specialists to diagnose ADHD among individuals younger than 7 years of age?</li> <li>b. What is the comparative diagnostic accuracy of EEG, imaging, or executive function approaches that can be used in the primary care practice setting or by specialists to diagnose ADHD among individuals aged 7 through 17?</li> <li>c. For both populations, how does the comparative diagnostic accuracy of these approaches vary by clinical setting, including primary care or specialty clinic, or patient subgroup, including age, sex, or other risk factors associated with ADHD?</li> <li>d. What are the adverse effects associated with being labeled correctly or incorrectly as having ADHD?</li> </ol> </li> <li>2. What are the comparative safety and effectiveness of pharmacologic and/or nonpharmacologic treatments of ADHD in improving outcomes associated with ADHD? How do these outcomes vary by presentation (inattentive, hyperactive/impulsive, and combined) or other comorbid conditions? What is the risk of diversion of pharmacologic treatment?</li> </ol>

	2011 Report	Current Report
		3. What are the comparative safety and effectiveness of different monitoring strategies to evaluate the effectiveness of treatment or changes in ADHD status (e.g., worsening or resolving symptoms)?
<b>Publication dates for included studies</b>	By KQ: 1. Inception to 2010 2. 1997-2010 3. 1980-2010	2009-2016
<b>ADHD diagnosis</b>	Not addressed	The Attention and Executive Function Rating Inventory and Childhood Executive Functioning Inventory performed better than the Cambridge Neuropsychological Test Automated Battery for the diagnosis of ADHD between 7 and 17 years of age (SOE=low). This systematic evidence review identified limited studies with variable and inconsistent findings for diagnostic accuracy for all other diagnostics tools evaluated, including imagining and EEG-based tests
<b>Treatment of preschoolers with disruptive behavior disorders, including those at risk of ADHD</b>	Evidence favored treatment with parent behavior training. Only one good-quality study of the effectiveness of methylphenidate (MPH) was identified, which found therapy to be effective.	Not addressed
<b>Long-term effectiveness and safety of treatment in people aged 6 and older</b>	<ul style="list-style-type: none"> <li>• MPH is effective for ADHD treatment for 14 months and atomoxetine (ATX) for over 12 months. SOE was low.</li> <li>• Combining medication and behavioral treatment can improve outcome compared to medication alone for some outcomes for those with ADHD combined type. SOE was low and the population were not necessarily formally diagnosed with ADHD.</li> </ul>	<ul style="list-style-type: none"> <li>• There are no new conclusions regarding the effectiveness of pharmacotherapy vs. placebo, of comparing different pharmacologic treatments, or of comparing combined therapeutic approaches (i.e., pharmacotherapy and nonpharmacotherapy).</li> <li>• Gastrointestinal side effects are slightly higher for ATX compared with MPH; however, the SOE was low.</li> <li>• Compared with placebo, child or parent training can improve ADHD symptoms. SOE was moderate. It did not however improve academic performance (SOE low) There are still questions related to the comparative effectiveness with pharmacotherapy alone or in combination with behavioral therapy.</li> </ul>

	2011 Report	Current Report
		<ul style="list-style-type: none"> <li>• Compared with placebo, omega-3 fatty acid supplementation had no difference on ADHD symptoms. SOE was moderate.</li> <li>• Cognitive behavioral therapy improved ADHD symptom scores. SOE was low</li> </ul>
<b>Prevalence and variations in diagnosis and treatment</b>	There is significant variation in diagnosis and treatment, with an overall increase in the use of pharmacotherapy.	Not addressed
<b>Monitoring strategies</b>	Not addressed	There were no studies found that compared monitoring strategies after the diagnosis of ADHD.

Abbreviations: ADHD=attention deficit hyperactivity disorder; ATX=atomoxetine; EEG=electroencephalography; KQ=Key Question; MPH=methylphenidate; SOE=strength of evidence

Since publication of the American Academy of Pediatrics (AAP) clinical practice guideline, there has been significant interest in the use of objective tests that could overcome the inherent limitations in the use of behavioral rating scales. Our systematic review could not find sufficient evidence to recommend that such tests now be incorporated into care, although the review was limited to studies published in 2009 and later. The AAP guideline also recognized the potential harm of labeling an individual with ADHD, but our review did not identify studies that would allow an estimate of this potential harm.

The AAP clinical practice guideline, based on the 2011 review, recommends behavioral therapy for children 4 through 5 years of age as the first line of therapy, with consideration of methylphenidate (MPH) if such interventions fail. In contrast, the AAP preferably recommends Food and Drug Administration (FDA)-approved medications and behavioral interventions for older children and adolescents. A recent Cochrane review of randomized controlled trials for the treatment of ADHD found that although MPH might improve ADHD symptoms, the level of certainty was low because most trials were underpowered, of low quality, and had short duration of follow-up.<sup>77</sup> That review included studies of children and adolescents 18 years and younger with ADHD according to DSM 3, 4, or 5 published by March 2015. Another systematic review supported the use of MPH, atomoxetine, and extended-release guanfacine to improve ADHD symptoms in adolescents.<sup>70</sup> That review only included studies of subjects 12–18 years of age published from 1999 through January 2016. As with the Cochrane review,<sup>77</sup> limitations in study quality were identified.

Our systematic review was not able to provide further evidence regarding the comparative effectiveness of FDA-approved medications. Other than omega-3 supplements which had moderate SOE for no difference in ADHD symptom scores, none of the other dietary supplements for ADHD therapy has sufficient SOE. However, the behavioral interventions were of did demonstrate effectiveness based on the studies included in this update. We found low SOE for cognitive behavioral therapy and moderate SOE for child or parent training but no difference in academic performance (SOE=low). Insufficient data were available to determine whether there is a subgroup of children and adolescents with ADHD (e.g., based on age or other characteristics) for whom these therapies might be more effective.

No existing systematic reviews or guidelines address the frequency that children or adolescents receiving care for ADHD should receive follow-up in the primary care practice setting or what approach should be used for monitoring after treatment is begun. Unfortunately, our systematic review also found no information to inform this question.

Prior to the publication of the AAP clinical practice guideline, the American Academy of Child and Adolescent Psychiatry released recommendations for establishing the diagnosis of ADHD and treating the condition.<sup>216</sup> These recommendations were consistent with the AAP clinical practice guideline, including the need for a comprehensive evaluation to establish the diagnosis and the need to personalize therapy, using behavioral interventions and/or stimulant therapy. Since the publication of the AAP clinical practice guideline, the American Academy of Neurology has released a guideline recommending against the use of EEG to confirm ADHD or to support further testing within the context of usual clinical care.<sup>217</sup> The 2011 review did not address approaches to diagnosis. The current review did not find sufficient evidence to recommend for or against the use of EEGs to confirm ADHD.

## Applicability

The accuracy of diagnostic tests and the effects of interventions for ADHD as determined in clinical studies do not always translate well to usual practice, where patient characteristics, clinical training, and resources may differ from study conditions in key ways. In addition, the availability of ADHD interventions studied in our review may differ from those easily available to patients within the United States.

For our analysis of diagnostic tools, study participants were generally adequately described. The main issue affecting applicability was the source of patients, who were selected from specialty clinics. This might affect the reported test characteristics (e.g., sensitivity and specificity). In general, given the scarcity of evidence we were not able to separately consider the role of age, ADHD subtype, or prior therapy. Most studies of diagnostic tools are performed outside of the primary care practice setting, further limiting applicability to children seen in the primary care setting. The studies of labeling have low applicability because they did not address specific patients or were surveys based on hypothetical children labeled with having ADHD.

The treatment studies we evaluated have moderate applicability due to significant heterogeneity regarding the duration of therapy, the study population, and the follow-up period. However, there was consistency in findings related to pharmacotherapy.

We were unable to find any studies that met the inclusion criteria regarding follow-up after treatment initiation (KQ 3).

Table 22 shows potential issues with applicability for studies included for KQ 1. Table 23 shows similar information for studies included in KQ 2 and is broken down by type of intervention.

**Table 22. Potential issues with applicability of included studies for Key Question 1**

Issue	N=21 Studies
<b>Population (P)</b>	
Narrow eligibility criteria and exclusion of those with comorbidities	2
More complex patients than typical of the community	2
Run-in period with high exclusion rate for non-adherence or side effects	0
DSM-4/5 diagnosis unclear	0
<b>Intervention (I)</b>	
Diagnostic tools used differently than as recommended or commonly used in practice	0
Dosing not reflective of current practice	0
Co-interventions that are likely to modify the effectiveness of therapy	0
Highly selected intervention team or level of training/proficiency not widely available	1
Follow-up not reflective of current practice	0
Co-intervention that are likely to modify monitoring strategies	0
<b>Comparator (C)</b>	
Diagnostic tools used differently than as recommended or commonly used in practice	0
Comparator unclear	0
Inadequate comparison therapy or use of a substandard alternative therapy	0
<b>Outcomes (O)</b>	
Composite outcomes that mix outcomes of different significance	0
Short-term follow-up	0
Surrogate outcomes	0
<b>Setting (S)</b>	
Level of care different from that in the community	9

DSM=Diagnostic and Statistical Manual of Mental Disorders

**Table 23. Potential issues with applicability of included studies for Key Question 2**

Issue	N=69 Studies				
	Pharm vs. Pharm N=9	Pharm vs. Nonpharm N=7	Pharm vs. Placebo N=7	Nonpharm vs. Nonpharm N=15	Nonpharm vs. Placebo N=37
<b>Population (P)</b>					
Narrow eligibility criteria and exclusion of those with comorbidities	0	0	1	2	1
More complex patients than typical of the community	0	0	0	0	0
Run-in period with high exclusion rate for non-adherence or side effects	0	0	0	0	0
DSM-4/5 diagnosis unclear	0	0	0	0	1
<b>Intervention (I)</b>					
Diagnostic tools used differently than as recommended or commonly used in practice	0	0	0	0	0
Dosing not reflective of current practice	0	0	0	0	0
Co-interventions that are likely to modify the effectiveness of therapy	1	1	2	0	4
Highly selected intervention team or level of training/proficiency not widely available	0	1	1	1	4
Follow-up not reflective of current practice	0	0	1	0	1
Co-intervention that are likely to modify monitoring strategies	0	0	0	0	0
<b>Comparator (C)</b>					
Diagnostic tools used differently than as recommended or commonly used in practice	0	0	0	0	0
Comparator unclear	1	0	1	0	0
Inadequate comparison therapy or use of a substandard alternative therapy	1	0	0	1	3
<b>Outcomes (O)</b>					
Composite outcomes that mix outcomes of different significance	0	0	0	0	0
Short-term follow-up	0	2	1	4	10
Surrogate outcomes	0	0	0	0	0
<b>Setting (S)</b>					
Level of care different from that in the community	0	1	2	2	4

Abbreviations: DSM=Diagnostic and Statistical Manual of Mental Disorders; Pharm=pharmacologic; Nonpharm=nonpharmacologic

## Implications for Clinical and Policy Decisionmaking

The lack of strong evidence for objective tests for the diagnosis of ADHD suggests that behavior rating scales should continue to be used as the primary strategy for diagnosing the condition. Overall, pharmacotherapy has been more studied than other treatment approaches and is generally considered the first approach to treatment for children and adolescents over 7 years of age. Insufficient data were available to determine whether they should be the first line of therapy for children under 7 years of age. Cognitive behavioral therapy (low SOE) or child or

parent training (moderate SOE) may reduce symptoms of ADHD but had no difference in academic performance (low SOE). Insufficient data were available to evaluate the effect of combining medication therapy with these approaches to care. There is a lack of supportive data for other complementary therapies. Although regular follow-up is recommended for children and adolescents with ADHD, no evidence was found about the comparative benefits and harms of different approaches.

## Limitations of the Systematic Review Process

Our findings have limitations related to the literature and our approach. Important limitations of the literature include (1) population heterogeneity; (2) short follow-up periods; (3) small sample sizes; (4) studies conducted outside of primary care; (5) variability in outcomes to assess efficacy and tolerability; and (6) inconsistent reporting of comparative statistical analyses.

Our review methods also have limitations. This review was designed to extend two previous systematic reviews.<sup>4, 19</sup> However, these two previous reviews did not have the same focus on issues related to the diagnosis and management of ADHD as this review. The time period of this systematic review led to the exclusion of earlier larger studies. In addition, some of the earlier reports regarding studies (e.g., the Multisite Multimodal Treatment Study of Children with ADHD [MTA]) included in this review might have been excluded. Our study was limited to English-language publications. Note that during the protocol development phase of our review we made two scoping revisions in consultation with our Technical Expert Panel (TEP). Specifically the review focused on:

- KQ 1: Diagnostic methods in children aged 6 or under or which compared novel diagnostic methods (e.g., imaging or EEG)
- KQ 2: Studies comparing two or more pharmacologic treatments approved by the FDA for the treatment of ADHD needed include 100 or more patients with ADHD and have a followup period of 6 months or longer. Criteria were less stringent for studies assessing nonpharmacologic treatments or pharmacologic treatments not indicated by the FDA for the treatment of ADHD. Data for these interventions was limited to studies including 50 or more patients with ADHD, with no specific requirement for length of followup.

This change in scope was performed in consultation with the nominating partner and the TEP in order to focus the systematic review on the areas of the greatest uncertainty and potential impact.

Another limitation of this review is that medication doses were not abstracted. Abstracting specific doses is challenging because many of the studies are based on dose escalation and there is often insufficient information to be able to determine the dose per subject body weight.

## Research Recommendations

ADHD is a common health problem that can be associated with significant impairment over the life span. The current evidence base has several significant gaps regarding diagnosis, treatment, and follow-up in the primary care setting. We did not identify any ongoing studies through trial registries that would help resolve the gap. Here we describe opportunities for future research organized by the three KQs.



## **KQ 1: ADHD Diagnosis Research Gaps**

Significant gaps related to KQ 1 include the lack of studies conducted in primary care and the lack of studies that prospectively evaluate the harm of labeling.

- Validity and reliability of behavior scales in direct comparison to new strategies for diagnosis:
  - Studies should include a typical population of children and adolescents in primary care seeking initial diagnosis.
  - The tools should be performed in the primary care setting.
  - Confirmation should be based on DSM-5 criteria by an expert within a short period of time to evaluate in the primary care setting. The expert should be blinded to the results in primary care.
  - Receiver operator characteristic (ROC) curves should be generated to evaluate the validity of diagnosis using different cut-offs for the behavior scales and consider the impact of combining behavior scales with other diagnostic strategies.
  - Results should be stratified by age group and ADHD subtype.
  - Reliability (test-retest reliability, inter-observer reliability, and intra-observer reliability) should be evaluated.
- Harms of labeling: These can be assessed in a longitudinal cohort of patients diagnosed with ADHD as part of an overall study to evaluate the effectiveness of interventions (see KQ 2).

## **KQ 2: ADHD Treatment Research Gaps**

Significant gaps related to KQ 2 include the lack of studies conducted in primary care and the short duration of follow-up.

- Effectiveness of treatment:
  - Secondary data analysis of electronic record data could be used to assess outcomes from large cohorts of patients, but would be limited to the available data and lack of randomization.
  - Typical care would be better informed by a pragmatic randomized trial that includes the typical spectrum of patients seen in primary care. Pragmatic trials can be embedded with electronic medical records, making prospective studies more feasible.
  - Three-arm studies, using pharmacologic, nonpharmacologic treatments (e.g., behavioral interventions), and a combination of approaches are needed. In a pragmatic trial, therapy could be escalated or combined, based on the responsiveness to treatment.
  - Although behavioral interventions are recommended, more research is needed about the comparative effectiveness of different approaches and how behavioral interventions can be personalized within the context of care in which most children and adolescents are treated.
  - Studies should include a wide range of outcomes, including behavior rating scales, school functioning, risk-taking behaviors, growth and development, comorbid psychiatric disorders, and the typical adverse events monitored in drug trials.
  - Studies should have a meaningful duration. Ideally, those enrolled in a pragmatic trial would be followed for multiple years.

- Studies should include the full spectrum of children and adolescents seeking care in the primary care setting.
- Follow-up monitoring should be evaluated, as described for KQ 3.

### **KQ 3: ADHD Monitoring Research Gaps**

Monitoring individuals with ADHD is a central to assuring optimal treatment outcomes. It allows for modification of the treatment plan based on assessment of adherence, changes in symptoms, the presence of comorbidity, the effectiveness of therapy, and the presence of any treatment-related harms. Factors that should be considered are time intervals, setting (e.g., primary care vs. specialty care), and the type of information to be evaluated. In addition, the role of technology should be considered. For example, the use of technology (e.g., Web-based tools or smartphone applications) could allow the collection of a wide array of data and decrease the need for in-clinic evaluations. Telemedicine might enable health care providers to communicate with the patient, family, and teachers.

- Monitoring treatment:
  - Within a pragmatic trial, different strategies for monitoring could be embedded.
  - Strategies should include the use of technology versus traditional in-person evaluations.
  - The frequency of monitoring should be a function of the ADHD symptoms and the intervention.

### **Conclusions**

Additional benefit of new strategies for diagnosing ADHD (e.g., imaging, EEG) is unclear. Little is known about the harm of labeling. For ADHD treatment, the 2011 report found benefits for psychostimulant therapy and behavioral therapy. This report using more stringent criteria for inclusion (e.g., diagnostic confirmation of ADHD) found evidence for behavioral therapy improving ADHD symptoms but no difference in academic performance and insufficient evidence for other outcomes. In addition, we found that omega-3/6 fatty acid supplementation does not appear to be effective in reducing ADHD symptoms. Overall, this review highlights the need for more research regarding behavioral therapies. There are insufficient data available to determine whether variations exist in effectiveness by age, sex, or presenting ADHD symptoms. No data were identified to determine the optimal strategy for monitoring children and adolescents with ADHD.

## References

1. Centers for Disease Control and Prevention. Attention-Deficit / Hyperactivity Disorder (ADHD). Data & Statistics. [www.cdc.gov/ncbddd/adhd/data.html](http://www.cdc.gov/ncbddd/adhd/data.html). Accessed April 3, 2015.
2. Akinbami LJ, Liu X, Pastor PN, et al. Attention deficit hyperactivity disorder among children aged 5–17 years in the United States, 1998–2009. NCHS data brief, no 70. Hyattsville, MD: National Center for Health Statistics. 2011. [www.cdc.gov/nchs/data/databriefs/db70.htm#citation](http://www.cdc.gov/nchs/data/databriefs/db70.htm#citation). Accessed April 3, 2015.
3. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 5th ed. Arlington, VA: American Psychiatric Publishing; 2013.
4. Charach A, Dashti B, Carson P, et al. Attention Deficit Hyperactivity Disorder: Effectiveness of Treatment in At-Risk Preschoolers; Long-Term Effectiveness in All Ages; and Variability in Prevalence, Diagnosis, and Treatment. Comparative Effectiveness Review No. 44. (Prepared by the McMaster University Evidence-based Practice Center under Contract No. MME2202 290-02-0020.) AHRQ Publication No. 12-EHC003-EF. Rockville, MD: Agency for Healthcare Research and Quality. October 2011. <http://www.effectivehealthcare.ahrq.gov/search-for-guides-reviews-and-reports/?pageaction=displayproduct&productid=814>. Accessed July 16, 2015.
5. Arnett AB, Pennington BF, Willcutt EG, et al. Sex differences in ADHD symptom severity. *J Child Psychol Psychiatry*. 2015 Jun;56(6):632-9. doi: 10.1111/jcpp.12337. PMID: 25283790.
6. Galera C, Cote SM, Bouvard MP, et al. Early risk factors for hyperactivity-impulsivity and inattention trajectories from age 17 months to 8 years. *Arch Gen Psychiatry*. 2011 Dec;68(12):1267-75. doi: 10.1001/archgenpsychiatry.2011.138. PMID: 22147844.
7. Leslie LK, Weckerly J, Plemmons D, et al. Implementing the American Academy of Pediatrics attention-deficit/hyperactivity disorder diagnostic guidelines in primary care settings. *Pediatrics*. 2004 Jul;114(1):129-40. PMID: 15231919.
8. U.S. Food and Drug Administration. Neuropsychiatric Electroencephalograph-Based Assessment Aid (NEBA). [http://www.accessdata.fda.gov/cdrh\\_docs/revIEWS/K112711.pdf](http://www.accessdata.fda.gov/cdrh_docs/revIEWS/K112711.pdf). Accessed October 19, 2015.
9. Wiener J, Malone M, Varma A, et al. Children’s perceptions of their ADHD symptoms: positive illusions, attributions, and stigma. *Canadian Journal of School Psychology*. 2012 September 1, 2012;27(3):217-42. doi: 10.1177/0829573512451972.
10. Lebowitz MS. Stigmatization of ADHD: a developmental review. *J Atten Disord*. 2013 February 13, 2013doi: 10.1177/1087054712475211.
11. Cook J, Knight E, Hume I, et al. The self-esteem of adults diagnosed with attention-deficit/hyperactivity disorder (ADHD): a systematic review of the literature. *Atten Defic Hyperact Disord*. 2014 2014/12/01;6(4):249-68. doi: 10.1007/s12402-014-0133-2.
12. Subcommittee on Attention-Deficit/Hyperactivity Disorder. Steering Committee on Quality Improvement Management. ADHD: Clinical Practice Guideline for the Diagnosis, Evaluation, and Treatment of Attention-Deficit/Hyperactivity Disorder in Children and Adolescents. *Pediatrics*. 2011 October 16, 2011doi: 10.1542/peds.2011-2654.
13. Vitiello B. Understanding the risk of using medications for attention deficit hyperactivity disorder with respect to physical growth and cardiovascular function. *Child Adolesc Psychiatr Clin N Am*. 2008 Apr;17(2):459-74, xi. doi: 10.1016/j.chc.2007.11.010. PMID: 18295156.

14. Chen LY, Crum RM, Martins SS, et al. Patterns of concurrent substance use among nonmedical ADHD stimulant users: results from the National Survey on Drug Use and Health. *Drug Alcohol Depend.* 2014 Sep 1;142:86-90. doi: 10.1016/j.drugalcdep.2014.05.022. PMID: 24957742.
15. Bussing R, Fernandez M, Harwood M, et al. Parent and teacher SNAP-IV ratings of attention deficit hyperactivity disorder symptoms: psychometric properties and normative ratings from a school district sample. *Assessment.* 2008 Sep;15(3):317-28. doi: 10.1177/1073191107313888. PMID: 18310593.
16. Conners CK, Pitkanen J, Rzepa S. Conners Comprehensive Behavior Rating Scale. In: Kreutzer J, DeLuca J, Caplan B, eds. *Encyclopedia of Clinical Neuropsychology.* Springer New York; 2011:678-80.
17. Bard DE, Wolraich ML, Neas B, et al. The psychometric properties of the Vanderbilt Attention-Deficit Hyperactivity Disorder Diagnostic Parent Rating Scale in a community population. *Journal of Developmental & Behavioral Pediatrics.* 2013;34(2):72-82. doi: 10.1097/DBP.0b013e31827a3a22. PMID: 23363973.
18. Fiks AG, Mayne S, DeBartolo E, et al. Parental preferences and goals regarding ADHD treatment. *Pediatrics.* 2013 October 1, 2013;132(4):692-702. doi: 10.1542/peds.2013-0152.
19. Jadad AR, Boyle M, Cunningham C, et al. Treatment of attention-deficit/hyperactivity disorder. *Evid Rep Technol Assess (Summ).* 1999 Nov(11):i-viii, 1-341. PMID: 10790990.
20. Agency for Healthcare Research and Quality. *Methods Guide for Effectiveness and Comparative Effectiveness Reviews.* Rockville, MD: Agency for Healthcare Research and Quality. <http://www.effectivehealthcare.ahrq.gov/index.cfm/search-for-guides-reviews-and-reports/?pageaction=displayproduct&productid=318>. Accessed July 16, 2015.
21. Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med.* 2009 Jul 21;6(7):e1000097. doi: 10.1371/journal.pmed.1000097. PMID: 19621072.
22. Cohen SC, Mulqueen JM, Ferracioli-Oda E, et al. Meta-Analysis: Risk of Tics Associated With Psychostimulant Use in Randomized, Placebo-Controlled Trials. *J Am Acad Child Adolesc Psychiatry.* 2015 Sep;54(9):728-36. doi: 10.1016/j.jaac.2015.06.011. PMID: 26299294.
23. Buitelaar J, Asherson P, Soutullo C, et al. Differences in maintenance of response upon discontinuation across medication treatments in attention-deficit/hyperactivity disorder. *Eur Neuropsychopharmacol.* 2015 Oct;25(10):1611-21. doi: 10.1016/j.euroneuro.2015.06.003. PMID: 26169574.
24. Richardson M, Moore DA, Gwernan-Jones R, et al. Non-pharmacological interventions for attention-deficit/hyperactivity disorder (ADHD) delivered in school settings: systematic reviews of quantitative and qualitative research. *Health Technol Assess.* 2015 Jun;19(45):1-470. doi: 10.3310/hta19450. PMID: 26129788.
25. Martinez-Raga J, Knecht C, de Alvaro R. Profile of guanfacine extended release and its potential in the treatment of attention-deficit hyperactivity disorder. *Neuropsychiatr Dis Treat.* 2015;11:1359-70. doi: 10.1155/2015/982072. PMID: 26064054.
26. Maneeton B, Maneeton N, Likhitsathian S, et al. Comparative efficacy, acceptability, and tolerability of lisdexamfetamine in child and adolescent ADHD: a meta-analysis of randomized, controlled trials. *Drug Des Devel Ther.* 2015;9:1927-36. doi: 10.2147/dddt.s79071. PMID: 25897203.
27. Pringsheim T, Hirsch L, Gardner D, et al. The Pharmacological Management of Oppositional Behaviour, Conduct Problems, and Aggression in Children and Adolescents With Attention-Deficit Hyperactivity Disorder, Oppositional Defiant Disorder, and Conduct Disorder: A Systematic Review and Meta-Analysis. Part 1: Psychostimulants, Alpha-2 Agonists, and Atomoxetine. *Can J Psychiatry.* 2015 Feb 1;60(2):42-51. PMID: 25886655.

28. Stuhec M, Munda B, Svab V, et al. Comparative efficacy and acceptability of atomoxetine, lisdexamfetamine, bupropion and methylphenidate in treatment of attention deficit hyperactivity disorder in children and adolescents: a meta-analysis with focus on bupropion. *J Affect Disord*. 2015 Jun 1;178:149-59. doi: 10.1016/j.jad.2015.03.006. PMID: 25813457.
29. Rizzo R, Martino D. Guanfacine for the treatment of attention deficit hyperactivity disorder in children and adolescents. *Expert Rev Neurother*. 2015 Apr;15(4):347-54. doi: 10.1586/14737175.2015.1028370. PMID: 25800130.
30. Spencer-Smith M, Klingberg T. Benefits of a working memory training program for inattention in daily life: a systematic review and meta-analysis. *PLoS One*. 2015;10(3):e0119522. doi: 10.1371/journal.pone.0119522. PMID: 25793607.
31. Garcia Murillo L, Cortese S, Anderson D, et al. Locomotor activity measures in the diagnosis of attention deficit hyperactivity disorder: Meta-analyses and new findings. *J Neurosci Methods*. 2015 Aug 30;252:14-26. doi: 10.1016/j.jneumeth.2015.03.001. PMID: 25770940.
32. Cortese S, Ferrin M, Brandeis D, et al. Cognitive training for attention-deficit/hyperactivity disorder: meta-analysis of clinical and neuropsychological outcomes from randomized controlled trials. *J Am Acad Child Adolesc Psychiatry*. 2015 Mar;54(3):164-74. doi: 10.1016/j.jaac.2014.12.010. PMID: 25721181.
33. Micoulaud-Franchi JA, Geoffroy PA, Fond G, et al. EEG neurofeedback treatments in children with ADHD: an updated meta-analysis of randomized controlled trials. *Front Hum Neurosci*. 2014;8:906. doi: 10.3389/fnhum.2014.00906. PMID: 25431555.
34. Maneeton N, Maneeton B, Intaprasert S, et al. A systematic review of randomized controlled trials of bupropion versus methylphenidate in the treatment of attention-deficit/hyperactivity disorder. *Neuropsychiatr Dis Treat*. 2014;10:1439-49. doi: 10.2147/ndt.s62714. PMID: 25120365.
35. Daley D, van der Oord S, Ferrin M, et al. Behavioral interventions in attention-deficit/hyperactivity disorder: a meta-analysis of randomized controlled trials across multiple outcome domains. *J Am Acad Child Adolesc Psychiatry*. 2014 Aug;53(8):835-47. doi: 10.1016/j.jaac.2014.05.013. PMID: 25062591.
36. Schoenfelder EN, Faraone SV, Kollins SH. Stimulant treatment of ADHD and cigarette smoking: a meta-analysis. *Pediatrics*. 2014 Jun;133(6):1070-80. doi: 10.1542/peds.2014-0179. PMID: 24819571.
37. Coghill DR, Caballero B, Sorooshian S, et al. A systematic review of the safety of lisdexamfetamine dimesylate. *CNS Drugs*. 2014 Jun;28(6):497-511. doi: 10.1007/s40263-014-0166-2. PMID: 24788672.
38. Bagot KS, Kaminer Y. Efficacy of stimulants for cognitive enhancement in non-attention deficit hyperactivity disorder youth: a systematic review. *Addiction*. 2014 Apr;109(4):547-57. PMID: 24749160.
39. Puri BK, Martins JG. Which polyunsaturated fatty acids are active in children with attention-deficit hyperactivity disorder receiving PUFA supplementation? A fatty acid validated meta-regression analysis of randomized controlled trials. *Prostaglandins Leukot Essent Fatty Acids*. 2014 May;90(5):179-89. doi: 10.1016/j.plefa.2014.01.004. PMID: 24560325.
40. Findling RL, Dinh S. Transdermal therapy for attention-deficit hyperactivity disorder with the methylphenidate patch (MTS). *CNS Drugs*. 2014 Mar;28(3):217-28. doi: 10.1007/s40263-014-0141-y. PMID: 24532028.
41. Schwartz S, Correll CU. Efficacy and safety of atomoxetine in children and adolescents with attention-deficit/hyperactivity disorder: results from a comprehensive meta-analysis and metaregression. *J Am Acad Child Adolesc Psychiatry*. 2014 Feb;53(2):174-87. doi: 10.1016/j.jaac.2013.11.005. PMID: 24472252.

42. Barrett JR, Tracy DK, Giaroli G. To sleep or not to sleep: a systematic review of the literature of pharmacological treatments of insomnia in children and adolescents with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol.* 2013 Dec;23(10):640-7. doi: 10.1089/cap.2013.0059. PMID: 24261659.
43. Park P, Caballero J, Omidian H. Use of serotonin norepinephrine reuptake inhibitors in the treatment of attention-deficit hyperactivity disorder in pediatrics. *Ann Pharmacother.* 2014 Jan;48(1):86-92. doi: 10.1177/1060028013506561. PMID: 24259607.
44. Rapport MD, Orban SA, Kofler MJ, et al. Do programs designed to train working memory, other executive functions, and attention benefit children with ADHD? A meta-analytic review of cognitive, academic, and behavioral outcomes. *Clin Psychol Rev.* 2013 Dec;33(8):1237-52. doi: 10.1016/j.cpr.2013.08.005. PMID: 24120258.
45. von Sydow K, Retzlaff R, Beher S, et al. The efficacy of systemic therapy for childhood and adolescent externalizing disorders: a systematic review of 47 RCT. *Fam Process.* 2013 Dec;52(4):576-618. doi: 10.1111/famp.12047. PMID: 24102196.
46. Mulqueen JM, Bartley CA, Bloch MH. Meta-analysis: parental interventions for preschool ADHD. *J Atten Disord.* 2015 Feb;19(2):118-24. doi: 10.1177/1087054713504135. PMID: 24071773.
47. Cassone AR. Mindfulness training as an adjunct to evidence-based treatment for ADHD within families. *J Atten Disord.* 2015 Feb;19(2):147-57. doi: 10.1177/1087054713488438. PMID: 23704114.
48. Chacko A, Feirsén N, Bedard AC, et al. Cogmed Working Memory Training for youth with ADHD: a closer examination of efficacy utilizing evidence-based criteria. *J Clin Child Adolesc Psychol.* 2013;42(6):769-83. doi: 10.1080/15374416.2013.787622. PMID: 23668397.
49. Reichow B, Volkmar FR, Bloch MH. Systematic review and meta-analysis of pharmacological treatment of the symptoms of attention-deficit/hyperactivity disorder in children with pervasive developmental disorders. *J Autism Dev Disord.* 2013 Oct;43(10):2435-41. doi: 10.1007/s10803-013-1793-z. PMID: 23468071.
50. Sonuga-Barke EJ, Brandeis D, Cortese S, et al. Nonpharmacological interventions for ADHD: systematic review and meta-analyses of randomized controlled trials of dietary and psychological treatments. *Am J Psychiatry.* 2013 Mar;170(3):275-89. doi: 10.1176/appi.ajp.2012.12070991. PMID: 23360949.
51. Lofthouse N, Arnold LE, Hurt E. Current status of neurofeedback for attention-deficit/hyperactivity disorder. *Curr Psychiatry Rep.* 2012 Oct;14(5):536-42. doi: 10.1007/s11920-012-0301-z. PMID: 22890816.
52. Hanwella R, Senanayake M, de Silva V. Comparative efficacy and acceptability of methylphenidate and atomoxetine in treatment of attention deficit hyperactivity disorder in children and adolescents: a meta-analysis. *BMC Psychiatry.* 2011;11:176. doi: 10.1186/1471-244x-11-176. PMID: 22074258.
53. Berek M, Kordon A, Hargarter L, et al. Improved functionality, health related quality of life and decreased burden of disease in patients with ADHD treated with OROS(R) MPH: is treatment response different between children and adolescents? *Child Adolesc Psychiatry Ment Health.* 2011;5:26. doi: 10.1186/1753-2000-5-26. PMID: 21791096.
54. Ming X, Mulvey M, Mohanty S, et al. Safety and efficacy of clonidine and clonidine extended-release in the treatment of children and adolescents with attention deficit and hyperactivity disorders. *Adolesc Health Med Ther.* 2011;2:105-12. doi: 10.2147/ahmt.s15672. PMID: 24600280.
55. Elbe D, Macbride A, Reddy D. Focus on Lisdexamfetamine: A Review of its use in Child and Adolescent Psychiatry. *J Can Acad Child Adolesc Psychiatry.* 2010 Nov;19(4):303-14. PMID: 21037922.

56. Coghill D. The impact of medications on quality of life in attention-deficit hyperactivity disorder: a systematic review. *CNS Drugs*. 2010 Oct;24(10):843-66. doi: 10.2165/11537450-000000000-00000. PMID: 20839896.
57. Battagliese G, Caccetta M, Luppino OI, et al. Cognitive-behavioral therapy for externalizing disorders: A meta-analysis of treatment effectiveness. *Behav Res Ther*. 2015;75:60-71.
58. Pringsheim T, Hirsch L, Gardner D, et al. The pharmacological management of oppositional behaviour, conduct problems, and Aggression in children and adolescents with Attention-deficit hyperactivity disorder, oppositional defiant disorder, and conduct disorder: A systematic review and meta-analysis. Part 2: Antipsychotics and traditional mood stabilizers. *Can J Psychiatry*. 2015;60(2):52-61.
59. Grassmann V, Santos-Galduróz RF, Galduróz JCF. Effects of low doses of polyunsaturated fatty acids on the attention deficit/Hyperactivity disorder of children: A systematic review. *Current Neuropharmacology*. 2013;11(2):186-96.
60. Karch D, Albers L, Renner G, et al. The efficacy of cognitive training programs in children and adolescents. *Deutsches Arzteblatt International*. 2013;110(39):643-52.
61. Tarver J, Daley D, Lockwood J, et al. Are self-directed parenting interventions sufficient for externalising behaviour problems in childhood? A systematic review and meta-analysis. *European Child & Adolescent Psychiatry*. 2014;23(12):1123-37. doi: 10.1007/s00787-014-0556-5. PMID: 2014-21110-001.
62. Nigg JT, Holton K. Restriction and elimination diets in ADHD treatment. *Child and Adolescent Psychiatric Clinics of North America*. 2014;23(4):937-53. doi: 10.1016/j.chc.2014.05.010. PMID: 2014-33672-001.
63. Hurt EA, Arnold LE. An integrated dietary/nutritional approach to ADHD. *Child and Adolescent Psychiatric Clinics of North America*. 2014;23(4):955-64. doi: 10.1016/j.chc.2014.06.002. PMID: 2014-33671-001.
64. Maneeton N, Maneeton B, Intaprasert S, et al. A systematic review of randomized controlled trials of bupropion versus methylphenidate in the treatment of attention-deficit/hyperactivity disorder. *Neuropsychiatr Dis Treat*. 2014;10 PMID: 2014-34728-001.
65. Storebo OJ, Krogh HB, Ramstad E, et al. Methylphenidate for attention-deficit/hyperactivity disorder in children and adolescents: Cochrane systematic review with meta-analyses and trial sequential analyses of randomised clinical trials. *BMJ*. 2015;351:h5203. doi: 10.1136/bmj.h5203. PMID: 26608309.
66. Rezaei G, Hosseini SA, Akbari Sari A, et al. Comparative efficacy of methylphenidate and atomoxetine in the treatment of attention deficit hyperactivity disorder in children and adolescents: A systematic review and meta-analysis. *Med J Islam Repub Iran*. 2016;30:325. PMID: 27390695.
67. Reed VA, Buitelaar JK, Anand E, et al. The Safety of Atomoxetine for the Treatment of Children and Adolescents with Attention-Deficit/Hyperactivity Disorder: A Comprehensive Review of Over a Decade of Research. *CNS Drugs*. 2016 Jul;30(7):603-28. doi: 10.1007/s40263-016-0349-0. PMID: 27290715.
68. Cortese S, Ferrin M, Brandeis D, et al. Neurofeedback for Attention-Deficit/Hyperactivity Disorder: Meta-Analysis of Clinical and Neuropsychological Outcomes From Randomized Controlled Trials. *J Am Acad Child Adolesc Psychiatry*. 2016 Jun;55(6):444-55. doi: 10.1016/j.jaac.2016.03.007. PMID: 27238063.
69. Rimestad ML, Lambek R, Zacher Christiansen H, et al. Short- and Long-Term Effects of Parent Training for Preschool Children With or at Risk of ADHD: A Systematic Review and Meta-Analysis. *J Atten Disord*. 2016 May 14doi: 10.1177/1087054716648775. PMID: 27179355.
70. Chan E, Fogler JM, Hammerness PG. Treatment of Attention-Deficit/Hyperactivity Disorder in Adolescents: A Systematic Review. *JAMA*. 2016 May 10;315(18):1997-2008. doi: 10.1001/jama.2016.5453. PMID: 27163988.

71. Tamminga HG, Reneman L, Huizenga HM, et al. Effects of methylphenidate on executive functioning in attention-deficit/hyperactivity disorder across the lifespan: a meta-regression analysis. *Psychol Med*. 2016 Jul;46(9):1791-807. doi: 10.1017/s0033291716000350. PMID: 27019103.
72. Millichap JG. Risk of Tics with Psychostimulants for ADHD. *Pediatr Neurol Briefs*. 2015 Dec;29(12):95. doi: 10.15844/pedneurbriefs-29-12-6. PMID: 26933551.
73. Chang LY, Wang MY, Tsai PS. Diagnostic Accuracy of Rating Scales for Attention-Deficit/Hyperactivity Disorder: A Meta-analysis. *Pediatrics*. 2016 Mar;137(3):e20152749. doi: 10.1542/peds.2015-2749. PMID: 26928969.
74. Punja S, Shamseer L, Hartling L, et al. Amphetamines for attention deficit hyperactivity disorder (ADHD) in children and adolescents. *Cochrane Database Syst Rev*. 2016;2:Cd009996. doi: 10.1002/14651858.CD009996.pub2. PMID: 26844979.
75. Maneeton N, Maneeton B, Woottitluk P, et al. Comparative efficacy, acceptability, and tolerability of dexamethylphenidate versus placebo in child and adolescent ADHD: a meta-analysis of randomized controlled trials. *Neuropsychiatr Dis Treat*. 2015;11:2943-52. doi: 10.2147/ndt.s91765. PMID: 26648726.
76. Hall CL, Valentine AZ, Groom MJ, et al. The clinical utility of the continuous performance test and objective measures of activity for diagnosing and monitoring ADHD in children: a systematic review. *Eur Child Adolesc Psychiatry*. 2016 Jul;25(7):677-99. doi: 10.1007/s00787-015-0798-x. PMID: 26620873.
77. Storebo OJ, Ramstad E, Krogh HB, et al. Methylphenidate for children and adolescents with attention deficit hyperactivity disorder (ADHD). *Cochrane Database Syst Rev*. 2015(11):Cd009885. doi: 10.1002/14651858.CD009885.pub2. PMID: 26599576.
78. Kidwell KM, Van Dyk TR, Lundahl A, et al. Stimulant Medications and Sleep for Youth With ADHD: A Meta-analysis. *Pediatrics*. 2015 Dec;136(6):1144-53. doi: 10.1542/peds.2015-1708. PMID: 26598454.
79. Epstein T, Patsopoulos NA, Weiser M. Immediate-release methylphenidate for attention deficit hyperactivity disorder (ADHD) in adults. *Cochrane Database of Systematic Reviews*. 2016;2016(5).
80. U.S. Food and Drug Administration. Information about Medications Used to Treat Attention-Deficit/Hyperactivity Disorder (ADHD). <http://www.fda.gov/Drugs/DrugSafety/InformationbyDrugClass/ucm283449.htm>. Accessed August 26, 2016.
81. Agency for Healthcare Research and Quality. Systematic Review Data Repository. <http://srdhrq.gov/>. Accessed January 29, 2016.
82. Higgins JPT, Green S. *Cochrane Handbook for Systematic Reviews of Interventions*. Version 5.1.0 [updated March 2011]. [www.cochrane-handbook.org](http://www.cochrane-handbook.org); The Cochrane Collaboration; 2011.
83. Wells GA, Shea B, O'Connell D, et al. The Newcastle-Ottawa Scale (NOS) for assessing the quality of nonrandomised studies in meta-analyses. Ottawa, Canada. Ottawa Hospital Research Institute. Available at [www.ohri.ca/programs/clinical\\_epidemiology/oxford.asp](http://www.ohri.ca/programs/clinical_epidemiology/oxford.asp). Accessed July 16, 2015.
84. Berkman ND, Lohr KN, Ansari M, et al. Grading the Strength of a Body of Evidence When Assessing Health Care Interventions for the Effective Health Care Program of the Agency for Healthcare Research and Quality: An Update. *Methods Guide for Effectiveness and Comparative Effectiveness Reviews*. Rockville (MD); 2013.
85. Atkins D, Chang SM, Gartlehner G, et al. Assessing applicability when comparing medical interventions: AHRQ and the Effective Health Care Program. *J Clin Epidemiol*. 2011 Nov;64(11):1198-207. doi: 10.1016/j.jclinepi.2010.11.021. PMID: 21463926.
86. Bunte TL, Schoemaker K, Hessen DJ, et al. Clinical usefulness of the Kiddie-Disruptive Behavior Disorder Schedule in the diagnosis of DBD and ADHD in preschool children. *J Abnorm Child Psychol*. 2013 Jul;41(5):681-90. doi: 10.1007/s10802-013-9732-1. PMID: 23474833.



87. Thorell LB, Eninger L, Brocki KC, et al. Childhood executive function inventory (CHEXI): a promising measure for identifying young children with ADHD? *J Clin Exp Neuropsychol*. 2010 Jan;32(1):38-43. doi: 10.1080/13803390902806527. PMID: 19381995.
88. Berger I, Goldzweig G. Objective measures of attention-deficit/hyperactivity disorder: a pilot study. *Isr Med Assoc J*. 2010 Sep;12(9):531-5. PMID: 21287795.
89. Bloch Y, Fixman M, Maoz H, et al. Can computerized cognitive tests assist in the clinical diagnosis of attention-deficit hyperactivity disorder? *J Neuropsychiatry Clin Neurosci*. 2012 Winter;24(1):111-4. doi: 10.1176/appi.neuropsych.11010014. PMID: 22450621.
90. dosReis S, Barksdale CL, Sherman A, et al. Stigmatizing experiences of parents of children with a new diagnosis of ADHD. *Psychiatric Services*. 2010;61(8):811-6. doi: 10.1176/appi.ps.61.8.811. PMID: 2010-16657-009.
91. Ferrin M, Vance A. Examination of neurological subtle signs in ADHD as a clinical tool for the diagnosis and their relationship to spatial working memory. *J Child Psychol Psychiatry*. 2012 Apr;53(4):390-400. doi: 10.1111/j.1469-7610.2011.02496.x. PMID: 22141455.
92. Kim JW, Lee J, Kim BN, et al. Theta-phase gamma-amplitude coupling as a neurophysiological marker of attention deficit/hyperactivity disorder in children. *Neurosci Lett*. 2015 Aug 31;603:25-30. doi: 10.1016/j.neulet.2015.07.006. PMID: 26170246.
93. Kim J, Lee Y, Han D, et al. The utility of quantitative electroencephalography and Integrated Visual and Auditory Continuous Performance Test as auxiliary tools for the Attention Deficit Hyperactivity Disorder diagnosis. *Clin Neurophysiol*. 2015 Mar;126(3):532-40. doi: 10.1016/j.clinph.2014.06.034. PMID: 25088931.
94. Klenberg L, Jamsa S, Hayrinen T, et al. The Attention and Executive Function Rating Inventory (ATTEX): Psychometric properties and clinical utility in diagnosing ADHD subtypes. *Scand J Psychol*. 2010 Mar 19;51(5):439-48. doi: 10.1111/j.1467-9450.2010.00812.x. PMID: 20338019.
95. Liechti MD, Valko L, Muller UC, et al. Diagnostic value of resting electroencephalogram in attention-deficit/hyperactivity disorder across the lifespan. *Brain Topogr*. 2013 Jan;26(1):135-51. doi: 10.1007/s10548-012-0258-6. PMID: 23053601.
96. Markovska-Simoska S, Pop-Jordanova N. Quantitative EEG in Children and Adults With Attention Deficit Hyperactivity Disorder: Comparison of Absolute and Relative Power Spectra and Theta/Beta Ratio. *Clin EEG Neurosci*. 2016 May 11 doi: 10.1177/1550059416643824. PMID: 27170672.
97. Martin-Martinez D, Casaseca-de-la-Higuera P, Alberola-Lopez S, et al. Nonlinear analysis of actigraphic signals for the assessment of the attention-deficit/hyperactivity disorder (ADHD). *Med Eng Phys*. 2012 Nov;34(9):1317-29. doi: 10.1016/j.medengphy.2011.12.023. PMID: 22297088.
98. Ogrim G, Kropotov J, Hestad K. The quantitative EEG theta/beta ratio in attention deficit/hyperactivity disorder and normal controls: sensitivity, specificity, and behavioral correlates. *Psychiatry Res*. 2012 Aug 15;198(3):482-8. doi: 10.1016/j.psychres.2011.12.041. PMID: 22425468.
99. Ohan JL, Visser TAW, Strain MC, et al. Teachers' and education students' perceptions of and reactions to children with and without the diagnostic label 'ADHD'. *Journal of School Psychology*. 2011;49(1):81-105. doi: 10.1016/j.jsp.2010.10.001. PMID: 2011-00464-004.
100. Park J, Kim C, Ahn JH, et al. Clinical Use of Continuous Performance Tests to Diagnose Children With ADHD. *J Atten Disord*. 2016 Jul 12 doi: 10.1177/1087054716658125. PMID: 27412120.

101. Soliva JC, Fauquet J, Bielsa A, et al. Quantitative MR analysis of caudate abnormalities in pediatric ADHD: proposal for a diagnostic test. *Psychiatry Res.* 2010 Jun 30;182(3):238-43. doi: 10.1016/j.psychres.2010.01.013. PMID: 20488672.
102. Zelnik N, Bennett-Back O, Miari W, et al. Is the test of variables of attention reliable for the diagnosis of attention-deficit hyperactivity disorder (ADHD)? *J Child Neurol.* 2012 Jun;27(6):703-7. doi: 10.1177/0883073811423821. PMID: 22378668.
103. Carballo JJ, Rodriguez-Blanco L, Garcia-Nieto R, et al. Screening for the ADHD Phenotype Using the Strengths and Difficulties Questionnaire in a Clinical Sample of Newly Referred Children and Adolescents. *J Atten Disord.* 2014 Dec 16doi: 10.1177/1087054714561858. PMID: 25515677.
104. Castro-Cabrera P, Gomez-Garcia J, Restrepo F, et al. Evaluation of feature extraction techniques on event-related potentials for detection of attention-deficit/hyperactivity disorder. *Conf Proc IEEE Eng Med Biol Soc.* 2010;2010:851-4. doi: 10.1109/iembs.2010.5626862. PMID: 21096317.
105. Caudal F. New marker using bioimpedance technology in screening for attention deficit/hyperactivity disorder (ADHD) in children as an adjunct to conventional diagnostic methods. *Psychol Res Behav Manag.* 2011;4:113-7. doi: 10.2147/prbm.s22924. PMID: 22114541.
106. Gonzalez JJ, Mendez LD, Manas S, et al. Performance analysis of univariate and multivariate EEG measurements in the diagnosis of ADHD. *Clin Neurophysiol.* 2013 Jun;124(6):1139-50. doi: 10.1016/j.clinph.2012.12.006. PMID: 23332776.
107. Abikoff HB, Thompson M, Laver-Bradbury C, et al. Parent training for preschool ADHD: a randomized controlled trial of specialized and generic programs. *J Child Psychol Psychiatry.* 2015 Jun;56(6):618-31. doi: 10.1111/jcpp.12346. PMID: 25318650.
108. Abikoff H, Gallagher R, Wells KC, et al. Remediating organizational functioning in children with ADHD: immediate and long-term effects from a randomized controlled trial. *J Consult Clin Psychol.* 2013 Feb;81(1):113-28. doi: 10.1037/a0029648. PMID: 22889336.
109. Anand P, Sachdeva A. Effect of Poly Unsaturated Fatty Acids Administration on Children with Attention Deficit Hyperactivity Disorder: A Randomized Controlled Trial. *J Clin Diagn Res.* 2016 Sep;10(9):Oc01-oc5. doi: 10.7860/jcdr/2016/20423.8471. PMID: 27790483.
110. Arcieri R, Germinario EA, Bonati M, et al. Cardiovascular measures in children and adolescents with attention-deficit/hyperactivity disorder who are new users of methylphenidate and atomoxetine. *J Child Adolesc Psychopharmacol.* 2012 Dec;22(6):423-31. PMID: 23362511.
111. Arnold LE, Disilvestro RA, Bozzolo D, et al. Zinc for attention-deficit/hyperactivity disorder: placebo-controlled double-blind pilot trial alone and combined with amphetamine. *J Child Adolesc Psychopharmacol.* 2011 Feb;21(1):1-19. doi: 10.1089/cap.2010.0073. PMID: 21309695.
112. Bai GN, Wang YF, Yang L, et al. Effectiveness of a focused, brief psychoeducation program for parents of ADHD children: Improvement of medication adherence and symptoms. *Neuropsychiatr Dis Treat.* 2015;11:2721-35.
113. Banaschewski T, Johnson M, Lecendreux M, et al. Health-related quality of life and functional outcomes from a randomized-withdrawal study of long-term lisdexamfetamine dimesylate treatment in children and adolescents with attention-deficit/hyperactivity disorder. *CNS Drugs.* 2014 Dec;28(12):1191-203. doi: 10.1007/s40263-014-0193-z. PMID: 25139785.
114. Barragan E, Breuer D, Dopfner M. Efficacy and Safety of Omega-3/6 Fatty Acids, Methylphenidate, and a Combined Treatment in Children With ADHD. *J Atten Disord.* 2014 Jan 24doi: 10.1177/1087054713518239. PMID: 24464327.

115. Beck SJ, Hanson CA, Puffenberger SS, et al. A controlled trial of working memory training for children and adolescents with ADHD. *J Clin Child Adolesc Psychol*. 2010;39(6):825-36. doi: 10.1080/15374416.2010.517162. PMID: 21058129.
116. Bink M, van Nieuwenhuizen C, Popma A, et al. Behavioral effects of neurofeedback in adolescents with ADHD: a randomized controlled trial. *Eur Child Adolesc Psychiatry*. 2015 Sep;24(9):1035-48. doi: 10.1007/s00787-014-0655-3. PMID: 25477074.
117. Boyer BE, Geurts HM, Prins PJ, et al. Two novel CBTs for adolescents with ADHD: the value of planning skills. *Eur Child Adolesc Psychiatry*. 2015 Sep;24(9):1075-90. doi: 10.1007/s00787-014-0661-5. PMID: 25549767.
118. Çetin FH, Taş Torun Y, Işık Taner Y. Atomoxetine versus OROS methylphenidate in attention deficit hyperactivity disorder: A six-month follow up study for efficacy and adverse effects. *Turkiye Klinikleri Journal of Medical Sciences*. 2015;35(2):88-96.
119. Chacko A, Bedard AC, Marks DJ, et al. A randomized clinical trial of Cogmed Working Memory Training in school-age children with ADHD: a replication in a diverse sample using a control condition. *J Child Psychol Psychiatry*. 2014 Mar;55(3):247-55. doi: 10.1111/jcpp.12146. PMID: 24117656.
120. Clemow DB, Mason OW, Sarkis EH, et al. Atomoxetine monotherapy compared with combination therapy for the treatment of ADHD: a retrospective chart review study. *Expert Rev Neurother*. 2015 Oct 21;15(11):1353-66. doi: 10.1586/14737175.2015.1102060. PMID: 26488905.
121. Cortese S, Panei P, Arcieri R, et al. Safety of Methylphenidate and Atomoxetine in Children with Attention-Deficit/Hyperactivity Disorder (ADHD): Data from the Italian National ADHD Registry. *CNS Drugs*. 2015 Oct;29(10):865-77. doi: 10.1007/s40263-015-0266-7. PMID: 26293742.
122. Dosis S, Van der Oord S, Wiers RW, et al. Improving executive functioning in children with ADHD: training multiple executive functions within the context of a computer game. a randomized double-blind placebo controlled trial. *PLoS One*. 2015;10(4):e0121651. doi: 10.1371/journal.pone.0121651. PMID: 25844638.
123. Didoni A, Sequi M, Panei P, et al. One-year prospective follow-up of pharmacological treatment in children with attention-deficit/hyperactivity disorder. *Eur J Clin Pharmacol*. 2011 Oct;67(10):1061-7. doi: 10.1007/s00228-011-1050-3. PMID: 21538145.
124. Duric NS, Assmus J, Gundersen D, et al. Neurofeedback for the treatment of children and adolescents with ADHD: a randomized and controlled clinical trial using parental reports. *BMC Psychiatry*. 2012;12:107. doi: 10.1186/1471-244x-12-107. PMID: 22877086.
125. Dutta B, Barua TK, Ray J, et al. A study of evaluation of safety and efficacy of memomet, a multi herbal formulation (memomet) in the treatment of behavioural disorder in children. *International Journal of Research in Pharmaceutical Sciences*. 2012;3(2):282-6.
126. Egeland J, Aarli AK, Saunes BK. Few effects of far transfer of working memory training in ADHD: a randomized controlled trial. *PLoS One*. 2013;8(10):e75660. doi: 10.1371/journal.pone.0075660. PMID: 24124503.
127. Ercan ES, Ardic UA, Kutlu A, et al. No beneficial effects of adding parent training to methylphenidate treatment for ADHD + ODD/CD children: a 1-year prospective follow-up study. *J Atten Disord*. 2014 Feb;18(2):145-57. doi: 10.1177/1087054711432884. PMID: 22522574.
128. Evans SW, Langberg JM, Schultz BK, et al. Evaluation of a School-Based Treatment Program for Young Adolescents With ADHD. *Journal of Consulting and Clinical Psychology*. 2016;84(1):15-30.

129. Ferrin M, Perez-Ayala V, El-Abd S, et al. A Randomized Controlled Trial Evaluating the Efficacy of a Psychoeducation Program for Families of Children and Adolescents With ADHD in the United Kingdom: Results After a 6-Month Follow-Up. *J Atten Disord*. 2016 Feb 2doi: 10.1177/1087054715626509. PMID: 26838557.
130. Findling RL, Adeyi B, Chen G, et al. Clinical response and symptomatic remission in children treated with lisdexamfetamine dimesylate for attention-deficit/hyperactivity disorder. *CNS Spectrums*. 2010;15(9):559-68.
131. Gelade K, Janssen TW, Bink M, et al. Behavioral Effects of Neurofeedback Compared to Stimulants and Physical Activity in Attention-Deficit/Hyperactivity Disorder: A Randomized Controlled Trial. *J Clin Psychiatry*. 2016 Oct;77(10):e1270-e7. doi: 10.4088/JCP.15m10149. PMID: 27631143.
132. Gevensleben H, Holl B, Albrecht B, et al. Is neurofeedback an efficacious treatment for ADHD? A randomised controlled clinical trial. *J Child Psychol Psychiatry*. 2009 Jul;50(7):780-9. doi: 10.1111/j.1469-7610.2008.02033.x. PMID: 19207632.
133. Gustafsson PA, Birberg-Thornberg U, Duchon K, et al. EPA supplementation improves teacher-rated behaviour and oppositional symptoms in children with ADHD. *Acta Paediatr*. 2010 Oct;99(10):1540-9. doi: 10.1111/j.1651-2227.2010.01871.x. PMID: 20491709.
134. Hahn-Markowitz J, Berger I, Manor I, et al. Efficacy of Cognitive-Functional (Cog-Fun) Occupational Therapy Intervention Among Children With ADHD: An RCT. *J Atten Disord*. 2016 Sep 16doi: 10.1177/1087054716666955. PMID: 27637735.
135. Hammerness P, Petty C, Faraone SV, et al. Do Stimulants Reduce the Risk for Alcohol and Substance Use in Youth With ADHD? A Secondary Analysis of a Prospective, 24-Month Open-Label Study of Osmotic-Release Methylphenidate. *J Atten Disord*. 2012 Dec 20doi: 10.1177/1087054712468051. PMID: 23264367.
136. Hariri M, Djazayeri A, Djalali M, et al. Effect of n-3 supplementation on hyperactivity, oxidative stress and inflammatory mediators in children with attention-deficit-hyperactivity disorder. *Malays J Nutr*. 2012 Dec;18(3):329-35. PMID: 24568073.
137. Hong SS, Cho SH. Treating attention deficit hyperactivity disorder with acupuncture: A randomized controlled trial. *European Journal of Integrative Medicine*. 2015.
138. Huang YH, Chung CY, Ou HY, et al. Treatment effects of combining social skill training and parent training in Taiwanese children with attention deficit hyperactivity disorder. *Journal of the Formosan Medical Association*. 2015;114(3):260-7.
139. Johnson M, Ostlund S, Fransson G, et al. Omega-3/omega-6 fatty acids for attention deficit hyperactivity disorder: a randomized placebo-controlled trial in children and adolescents. *J Atten Disord*. 2009 Mar;12(5):394-401. doi: 10.1177/1087054708316261. PMID: 18448859.
140. Katz M, Levine AA, Kol-Degani H, et al. A compound herbal preparation (CHP) in the treatment of children with ADHD: a randomized controlled trial. *J Atten Disord*. 2010 Nov;14(3):281-91. doi: 10.1177/1087054709356388. PMID: 20228219.
141. Li JJ, Li ZW, Wang SZ, et al. Ningdong granule: a complementary and alternative therapy in the treatment of attention deficit/hyperactivity disorder. *Psychopharmacology (Berl)*. 2011 Aug;216(4):501-9. doi: 10.1007/s00213-011-2238-z. PMID: 21416235.
142. Manor I, Magen A, Keidar D, et al. The effect of phosphatidylserine containing Omega3 fatty-acids on attention-deficit hyperactivity disorder symptoms in children: a double-blind placebo-controlled trial, followed by an open-label extension. *Eur Psychiatry*. 2012 Jul;27(5):335-42. doi: 10.1016/j.eurpsy.2011.05.004. PMID: 21807480.

143. Milte CM, Parletta N, Buckley JD, et al. Eicosapentaenoic and docosahexaenoic acids, cognition, and behavior in children with attention-deficit/hyperactivity disorder: a randomized controlled trial. *Nutrition*. 2012 Jun;28(6):670-7. doi: 10.1016/j.nut.2011.12.009. PMID: 22541055.
144. Mohammadpour N, Jazayeri S, Tehrani-Doost M, et al. Effect of vitamin D supplementation as adjunctive therapy to methylphenidate on ADHD symptoms: A randomized, double blind, placebo-controlled trial. *Nutr Neurosci*. 2016 Dec 07;1-8. doi: 10.1080/1028415x.2016.1262097. PMID: 27924679.
145. Mohammadi MR, Mostafavi SA, Keshavarz SA, et al. Melatonin effects in methylphenidate treated children with attention deficit hyperactivity disorder: a randomized double blind clinical trial. *Iran J Psychiatry*. 2012 Spring;7(2):87-92. PMID: 22952551.
146. Molina BS, Hinshaw SP, Swanson JM, et al. The MTA at 8 years: prospective follow-up of children treated for combined-type ADHD in a multisite study. *J Am Acad Child Adolesc Psychiatry*. 2009 May;48(5):484-500. doi: 10.1097/CHI.0b013e31819c23d0. PMID: 19318991.
147. Moreno-García I, Delgado-Pardo G, de Reya CC-V, et al. Neurofeedback, pharmacological treatment and behavioral therapy in hyperactivity: Multilevel analysis of treatment effects on electroencephalography. *International Journal of Clinical and Health Psychology*. 2015;15(3):217-25. doi: 10.1016/j.ijchp.2015.04.003. PMID: 2015-48012-005.
148. Newcorn JH, Harpin V, Huss M, et al. Extended-release guanfacine hydrochloride in 6-17-year olds with ADHD: a randomised-withdrawal maintenance of efficacy study. *J Child Psychol Psychiatry*. 2016 Jun;57(6):717-28. doi: 10.1111/jcpp.12492. PMID: 26871297.
149. Oberai P, Gopinadhan S, Varanasi R, et al. Homoeopathic management of attention deficit hyperactivity disorder: A randomised placebo-controlled pilot trial. *Indian Journal of Research in Homeopathy*. 2013;7(4):158-67.
150. Ostberg M, Rydell AM. An efficacy study of a combined parent and teacher management training programme for children with ADHD. *Nord J Psychiatry*. 2012 Apr;66(2):123-30. doi: 10.3109/08039488.2011.641587. PMID: 22150634.
151. Panei P, Arcieri R, Bonati M, et al. Safety of psychotropic drug prescribed for attention-deficit/hyperactivity disorder in Italy. *Adverse Drug Reaction Bulletin*. 2010(260):999-1002.
152. Pffiffner LJ, Hinshaw SP, Owens E, et al. A two-site randomized clinical trial of integrated psychosocial treatment for ADHD-inattentive type. *J Consult Clin Psychol*. 2014 Dec;82(6):1115-27. doi: 10.1037/a0036887. PMID: 24865871.
153. Power TJ, Mautone JA, Soffer SL, et al. A family-school intervention for children with ADHD: results of a randomized clinical trial. *J Consult Clin Psychol*. 2012 Aug;80(4):611-23. doi: 10.1037/a0028188. PMID: 22506793.
154. Raz R, Carasso RL, Yehuda S. The influence of short-chain essential fatty acids on children with attention-deficit/hyperactivity disorder: a double-blind placebo-controlled study. *J Child Adolesc Psychopharmacol*. 2009 Apr;19(2):167-77. doi: 10.1089/cap.2008.070. PMID: 19364294.
155. Salehi B, Imani R, Mohammadi MR, et al. Ginkgo biloba for attention-deficit/hyperactivity disorder in children and adolescents: a double blind, randomized controlled trial. *Prog Neuropsychopharmacol Biol Psychiatry*. 2010 Feb 1;34(1):76-80. doi: 10.1016/j.pnpbp.2009.09.026. PMID: 19815048.
156. Sallee FR, Lyne A, Wigal T, et al. Long-term safety and efficacy of guanfacine extended release in children and adolescents with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol*. 2009 Jun;19(3):215-26. doi: 10.1089/cap.2008.0080. PMID: 19519256.
157. Sayer GR, McGough JJ, Levitt J, et al. Acute and Long-Term Cardiovascular Effects of Stimulant, Guanfacine, and Combination Therapy for Attention-Deficit/Hyperactivity Disorder. *J Child Adolesc Psychopharmacol*. 2016 Aug 2doi: 10.1089/cap.2015.0264. PMID: 27483130.

158. Shakibaei F, Radmanesh M, Salari E, et al. Ginkgo biloba in the treatment of attention-deficit/hyperactivity disorder in children and adolescents. A randomized, placebo-controlled, trial. *Complement Ther Clin Pract*. 2015 May;21(2):61-7. doi: 10.1016/j.ctcp.2015.04.001. PMID: 25925875.
159. Sibley MH, Graziano PA, Kuriyan AB, et al. Parent-teen behavior therapy + motivational interviewing for adolescents with ADHD. *J Consult Clin Psychol*. 2016 Aug;84(8):699-712. doi: 10.1037/ccp0000106. PMID: 27077693.
160. Steiner NJ, Frenette EC, Rene KM, et al. Neurofeedback and cognitive attention training for children with attention-deficit hyperactivity disorder in schools. *J Dev Behav Pediatr*. 2014 Jan;35(1):18-27. doi: 10.1097/dbp.0000000000000009. PMID: 24399101.
161. Storebo OJ, Glud C, Winkel P, et al. Social-skills and parental training plus standard treatment versus standard treatment for children with ADHD--the randomised SOSTRA trial. *PLoS One*. 2012;7(6):e37280. doi: 10.1371/journal.pone.0037280. PMID: 22745657.
162. Trzepacz PT, Spencer TJ, Zhang S, et al. Effect of atomoxetine on Tanner stage sexual development in children and adolescents with attention deficit/hyperactivity disorder: 18-month results from a double-blind, placebo-controlled trial. *Curr Med Res Opin*. 2011;27 Suppl 2:45-52. doi: 10.1185/03007995.2011.599372. PMID: 21973230.
163. van der Donk M, Hiemstra-Beernink AC, Tjeenk-Kalff A, et al. Cognitive training for children with ADHD: a randomized controlled trial of cogmed working memory training and 'paying attention in class'. *Front Psychol*. 2015;6:1081. doi: 10.3389/fpsyg.2015.01081. PMID: 26284005.
164. Vidal R, Castells J, Richarte V, et al. Group therapy for adolescents with attention-deficit/hyperactivity disorder: a randomized controlled trial. *J Am Acad Child Adolesc Psychiatry*. 2015 Apr;54(4):275-82. doi: 10.1016/j.jaac.2014.12.016. PMID: 25791144.
165. Widenhorn-Muller K, Schwanda S, Scholz E, et al. Effect of supplementation with long-chain omega-3 polyunsaturated fatty acids on behavior and cognition in children with attention deficit/hyperactivity disorder (ADHD): a randomized placebo-controlled intervention trial. *Prostaglandins Leukot Essent Fatty Acids*. 2014 Jul-Aug;91(1-2):49-60. doi: 10.1016/j.plefa.2014.04.004. PMID: 24958525.
166. Zhang H, Du M, Zhuang S. Impact of long-term treatment of methylphenidate on height and weight of school age children with ADHD. *Neuropediatrics*. 2010 Aug;41(2):55-9. doi: 10.1055/s-0030-1261893. PMID: 20799150.
167. Chacko A, Wymbs BT, Wymbs FA, et al. Enhancing traditional behavioral parent training for single mothers of children with ADHD. *J Clin Child Adolesc Psychol*. 2009 Mar;38(2):206-18. doi: 10.1080/15374410802698388. PMID: 19283599.
168. Ferrin M, Moreno-Granados JM, Salcedo-Marin MD, et al. Evaluation of a psychoeducation programme for parents of children and adolescents with ADHD: immediate and long-term effects using a blind randomized controlled trial. *Eur Child Adolesc Psychiatry*. 2014 Aug;23(8):637-47. doi: 10.1007/s00787-013-0494-7. PMID: 24292412.
169. Hiscock H, Sciberras E, Mensah F, et al. Impact of a behavioural sleep intervention on symptoms and sleep in children with attention deficit hyperactivity disorder, and parental mental health: randomised controlled trial. *BMJ*. 2015;350:h68. doi: 10.1136/bmj.h68. PMID: 25646809.
170. Mautone JA, Marshall SA, Sharman J, et al. Development of a Family-School Intervention for Young Children With Attention Deficit Hyperactivity Disorder. *School Psych Rev*. 2012;41(4):447-66. PMID: 24353368.
171. Myers K, Vander Stoep A, Zhou C, et al. Effectiveness of a telehealth service delivery model for treating attention-deficit/hyperactivity disorder: a community-based randomized controlled trial. *J Am Acad Child Adolesc Psychiatry*. 2015 Apr;54(4):263-74. doi: 10.1016/j.jaac.2015.01.009. PMID: 25791143.

172. Pelsser LM, Frankena K, Toorman J, et al. Effects of a restricted elimination diet on the behaviour of children with attention-deficit hyperactivity disorder (INCA study): a randomised controlled trial. *Lancet*. 2011 Feb 5;377(9764):494-503. doi: 10.1016/s0140-6736(10)62227-1. PMID: 21296237.
173. Tobaiqy M, Stewart D, Helms PJ, et al. Parental reporting of adverse drug reactions associated with attention-deficit hyperactivity disorder (ADHD) medications in children attending specialist paediatric clinics in the UK. *Drug Saf*. 2011 Mar 1;34(3):211-9. doi: 10.2165/11586050-000000000-00000. PMID: 21332245.
174. van Dongen-Boomsma M, Vollebregt MA, Buitelaar JK, et al. Working memory training in young children with ADHD: a randomized placebo-controlled trial. *J Child Psychol Psychiatry*. 2014 Aug;55(8):886-96. doi: 10.1111/jcpp.12218. PMID: 24628438.
175. Webster-Stratton CH, Reid MJ, Beauchaine T. Combining parent and child training for young children with ADHD. *J Clin Child Adolesc Psychol*. 2011;40(2):191-203. doi: 10.1080/15374416.2011.546044. PMID: 21391017.
176. NCT01552915. ClinicalTrials.gov. <https://clinicaltrials.gov/ct2/results?term=NCT01552915&Search=Search>. Accessed February 23, 2017.
177. NCT00429273. ClinicalTrials.gov. <https://clinicaltrials.gov/ct2/results?term=NCT00429273&Search=Search>. Accessed February 23, 2017.
178. NCT00889915. ClinicalTrials.gov. <https://clinicaltrials.gov/ct2/results?term=NCT00889915&Search=Search>. Accessed February 23, 2017.
179. NCT01439126. ClinicalTrials.gov. <https://clinicaltrials.gov/ct2/results?term=NCT01439126&Search=Search>. Accessed February 23, 2017.
180. NCT01711021. ClinicalTrials.gov. <https://clinicaltrials.gov/ct2/results?term=NCT01711021&Search=Search>. Accessed February 23, 2017.
181. NCT00782080. ClinicalTrials.gov. <https://clinicaltrials.gov/ct2/results?term=NCT00782080&Search=Search>. Accessed February 23, 2017.
182. NCT02114632. ClinicalTrials.gov. <https://clinicaltrials.gov/ct2/results?term=NCT02114632&Search=Search>. Accessed February 23, 2017.
183. Bunte TL, Laschen S, Schoemaker K, et al. Clinical usefulness of observational assessment in the diagnosis of DBD and ADHD in preschoolers. *J Clin Child Adolesc Psychol*. 2013;42(6):749-61. doi: 10.1080/15374416.2013.773516. PMID: 23477379.
184. Papadopoulos N, Sciberras E, Hiscock H, et al. The Efficacy of a Brief Behavioral Sleep Intervention in School-Aged Children With ADHD and Comorbid Autism Spectrum Disorder. *J Atten Disord*. 2015 Feb 2doi: 10.1177/1087054714568565. PMID: 25646022.
185. Boyer BE, Geurts HM, Prins PJM, et al. One-year follow-up of two novel CBTs for adolescents with ADHD. *European Child and Adolescent Psychiatry*. 2015.
186. Steiner NJ, Frenette EC, Rene KM, et al. In-scho-ol neurofeedback training for ADHD: sustained improvements from a randomized control trial. *Pediatrics*. 2014 Mar;133(3):483-92. doi: 10.1542/peds.2013-2059. PMID: 24534402.
187. Hovik KT, Saunes BK, Aarli AK, et al. RCT of working memory training in ADHD: long-term near-transfer effects. *PLoS One*. 2013;8(12):e80561. doi: 10.1371/journal.pone.0080561. PMID: 24352414.
188. Mostafavi SA, Mohammadi MR, Hosseinzadeh P, et al. Dietary intake, growth and development of children with ADHD in a randomized clinical trial of Ritalin and Melatonin co-administration: Through circadian cycle modification or appetite enhancement? *Iran J Psychiatry*. 2012 Summer;7(3):114-9. PMID: 23139692.
189. Duric NS, Assmus J, Elgen IB. Self-reported efficacy of neurofeedback treatment in a clinical randomized controlled study of ADHD children and adolescents. *Neuropsychiatr Dis Treat*. 2014;10:1645-54. doi: 10.2147/ndt.s66466. PMID: 25214789.

190. Milte CM, Parletta N, Buckley JD, et al. Increased Erythrocyte Eicosapentaenoic Acid and Docosahexaenoic Acid Are Associated With Improved Attention and Behavior in Children With ADHD in a Randomized Controlled Three-Way Crossover Trial. *J Atten Disord*. 2015 Nov;19(11):954-64. doi: 10.1177/1087054713510562. PMID: 24214970.
191. Manor I, Magen A, Keidar D, et al. Safety of phosphatidylserine containing omega3 fatty acids in ADHD children: a double-blind placebo-controlled trial followed by an open-label extension. *Eur Psychiatry*. 2013 Aug;28(6):386-91. doi: 10.1016/j.eurpsy.2012.11.001. PMID: 23312676.
192. Vitiello B, Elliott GR, Swanson JM, et al. Blood pressure and heart rate over 10 years in the multimodal treatment study of children with ADHD. *Am J Psychiatry*. 2012 Feb;169(2):167-77. doi: 10.1176/appi.ajp.2011.10111705. PMID: 21890793.
193. Wangler S, Gevensleben H, Albrecht B, et al. Neurofeedback in children with ADHD: specific event-related potential findings of a randomized controlled trial. *Clin Neurophysiol*. 2011 May;122(5):942-50. doi: 10.1016/j.clinph.2010.06.036. PMID: 20843737.
194. Gevensleben H, Holl B, Albrecht B, et al. Neurofeedback training in children with ADHD: 6-month follow-up of a randomised controlled trial. *Eur Child Adolesc Psychiatry*. 2010 Sep;19(9):715-24. doi: 10.1007/s00787-010-0109-5. PMID: 20499120.
195. Johnson M, Mansson JE, Ostlund S, et al. Fatty acids in ADHD: plasma profiles in a placebo-controlled study of Omega 3/6 fatty acids in children and adolescents. *Atten Defic Hyperact Disord*. 2012 Dec;4(4):199-204. doi: 10.1007/s12402-012-0084-4. PMID: 22753087.
196. March JS. The preschool ADHD treatment study (PATS) as the culmination of twenty years of clinical trials in pediatric psychopharmacology. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2011;50(5):427-30. doi: 10.1016/j.jaac.2010.09.018. PMID: 2011-10428-002.
197. Andriola MR. Efficacy and safety of methylphenidate and pemoline in children with attention deficit hyperactivity disorder. *Curr Ther Res Clin E*. 2000 Apr;61(4):208-15. doi: Doi 10.1016/S0011-393x(00)89035-9. PMID: WOS:000086999500004.
198. Holick CN, Turnbull BR, Jones ME, et al. Atomoxetine and cerebrovascular outcomes in adults. *J Clin Psychopharmacol*. 2009 Oct;29(5):453-60. doi: 10.1097/JCP.0b013e3181b2b828. PMID: 19745645.
199. Barbaresi WJ, Katusic SK, Colligan RC, et al. Long-term stimulant medication treatment of attention-deficit/hyperactivity disorder: results from a population-based study. *J Dev Behav Pediatr*. 2006 Feb;27(1):1-10. PMID: 16511362.
200. Pliszka SR, Matthews TL, Braslow KJ, et al. Comparative effects of methylphenidate and mixed salts amphetamine on height and weight in children with attention-deficit/hyperactivity disorder. *J Am Acad Child Adolesc Psychiatry*. 2006 May;45(5):520-6. doi: 10.1097/01.chi.0000205702.48324.fd. PMID: 16670648.
201. Poulton A, Cowell CT. Slowing of growth in height and weight on stimulants: a characteristic pattern. *J Paediatr Child Health*. 2003 Apr;39(3):180-5. PMID: 12654140.
202. Sund AM, Zeiner P. Does extended medication with amphetamine or methylphenidate reduce growth in hyperactive children? *Nord J Psychiatry*. 2002;56(1):53-7. doi: 10.1080/08039480252803936. PMID: 11869467.
203. Zachor DA, Roberts AW, Hodgins JB, et al. Effects of long-term psychostimulant medication on growth of children with ADHD. *Res Dev Disabil*. 2006 Mar-Apr;27(2):162-74. doi: 10.1016/j.ridd.2004.12.004. PMID: 15955659.
204. Bloch MH, Qawasmi A. Omega-3 fatty acid supplementation for the treatment of children with attention-deficit/hyperactivity disorder symptomatology: systematic review and meta-analysis. *J Am Acad Child Adolesc Psychiatry*. 2011 Oct;50(10):991-1000. doi: 10.1016/j.jaac.2011.06.008. PMID: 21961774.



205. Gillies D, Sinn J, Lad SS, et al. Polyunsaturated fatty acids (PUFA) for attention deficit hyperactivity disorder (ADHD) in children and adolescents. *Cochrane Database Syst Rev*. 2012;7:Cd007986. doi: 10.1002/14651858.CD007986.pub2. PMID: 22786509.
206. Matos M, Bauermeister JJ, Bernal G. Parent-child interaction therapy for Puerto Rican preschool children with ADHD and behavior problems: a pilot efficacy study. *Fam Process*. 2009 Jun;48(2):232-52. PMID: 19579907.
207. Sonuga-Barke EJ, Daley D, Thompson M, et al. Parent-based therapies for preschool attention-deficit/hyperactivity disorder: a randomized, controlled trial with a community sample. *J Am Acad Child Adolesc Psychiatry*. 2001 Apr;40(4):402-8. doi: 10.1097/00004583-200104000-00008. PMID: 11314565.
208. Thompson MJ, Laver-Bradbury C, Ayres M, et al. A small-scale randomized controlled trial of the revised new forest parenting programme for preschoolers with attention deficit hyperactivity disorder. *Eur Child Adolesc Psychiatry*. 2009 Oct;18(10):605-16. doi: 10.1007/s00787-009-0020-0. PMID: 19404717.
209. Belanger SA, Vanasse M, Spahis S, et al. Omega-3 fatty acid treatment of children with attention-deficit hyperactivity disorder: A randomized, double-blind, placebo-controlled study. *Paediatr Child Health*. 2009 Feb;14(2):89-98. PMID: 19436468.
210. Cornell JE, Mulrow CD, Localio R, et al. Random-effects meta-analysis of inconsistent effects: a time for change. *Ann Intern Med*. 2014 Feb 18;160(4):267-70. doi: 10.7326/M13-2886. PMID: 24727843.
211. Williford AP, Shelton TL. Using mental health consultation to decrease disruptive behaviors in preschoolers: adapting an empirically-supported intervention. *J Child Psychol Psychiatry*. 2008 Feb;49(2):191-200. doi: 10.1111/j.1469-7610.2007.01839.x. PMID: 18211278.
212. Shelton TL, Barkley RA, Crosswait C, et al. Multimethod psychoeducational intervention for preschool children with disruptive behavior: two-year post-treatment follow-up. *J Abnorm Child Psychol*. 2000 Jun;28(3):253-66. PMID: 10885683.
213. Barkley RA, Shelton TL, Crosswait C, et al. Multi-method psycho-educational intervention for preschool children with disruptive behavior: preliminary results at post-treatment. *J Child Psychol Psychiatry*. 2000 Mar;41(3):319-32. PMID: 10784079.
214. Kern L, DuPaul GJ, Volpe RJ, et al. Multisetting assessment-based intervention for young children at risk for attention deficit hyperactivity disorder: Initial effects on academic and behavioral functioning. *School Psychology Review*. 2007;36(2):237-55. PMID: WOS:000255736900004.
215. McGoey KE, DuPaul GJ, Eckert TL, et al. Outcomes of a multi-component intervention for preschool children at-risk for attention-deficit/hyperactivity disorder. *Child & Family Behavior Therapy*. 2005;27(1):33-56. doi: 10.1300/J019v27n01\_03. PMID: WOS:000230131600003.
216. Pliszka S. Practice Parameter for the Assessment and Treatment of Children and Adolescents With Attention-Deficit/Hyperactivity Disorder. *Journal of the American Academy of Child & Adolescent Psychiatry*. 46(7):894-921. doi: 10.1097/chi.0b013e318054e724.
217. Gloss D, Varma JK, Pringsheim T, et al. Practice advisory: The utility of EEG theta/beta power ratio in ADHD diagnosis: Report of the Guideline Development, Dissemination, and Implementation Subcommittee of the American Academy of Neurology. *Neurology*. 2016 Nov 29;87(22):2375-9. doi: 10.1212/wnl.00000000000003265. PMID: 27760867

## Acronyms and Abbreviations

<b>Acronym/Abbreviation</b>	<b>Definition</b>
AAP	American Academy of Pediatrics
AACAP	American Academy of Child and Adolescent Psychiatry
ACES	Adverse Childhood Experiences Study
ADHD	Attention deficit hyperactivity disorder
ADHD-C	Attention deficit hyperactivity disorder-combined type
ADHD-HI	Attention deficit hyperactivity disorder-hyperactive/impulsive type
ADHD-I	Attention deficit hyperactivity disorder-inattentive type
ADHD-RS	Attention Deficit Hyperactivity Disorder Rating Scale
ADHD RS-IV	Attention Deficit Hyperactivity Disorder Rating Scale 4
AHRQ	Agency for Healthcare Research and Quality
ATTEX	Attention and Executive Function Rating Inventory
ATX	Atomoxetine
AUC	Area under the curve
AV	Atrioventricular
BASC-2	Behavior Assessment System for Children, Second Edition
BASC-2 BESS	Behavior Assessment System for Children, Second Edition Behavioral and Emotional Screening System
BPT	Behavioral parent training
BRIEF	Behavior Rating Inventory of Executive Function
CANTAB	Cambridge Neuropsychological Test Automated Battery
CARE	Coping With ADHD Through Relationships and Education
CBCL	Child Behavior Checklist
CBRS	Comprehensive Behavior Rating Scale
CBT	Cognitive behavioral therapy
CBV	Caudate body volume
CD	Conduct disorder
CDI	Children's Depression Inventory
CDSR	Cochrane Database of Systematic Reviews
CER	Comparative effectiveness review
CGI	Conners' Global Index; Clinical Global Impression
CGI-S	Clinical Global Impression Severity
CGI-SS	Clinical Global Impression of Severity of Suicidality
CHEXI	Childhood Executive Functioning Inventory
CHIP-CE-PRF	Child and Health Illness Profile Child Edition, Parent Report Form
CHP-AS	Challenging Horizons Program After School
CHP-M	Challenging Horizons Program Mentoring
CI	Confidence interval
CDI	Children's Depression Inventory
CLAS	Child Life and Attention Skills

<b>Acronym/Abbreviation</b>	<b>Definition</b>
Cog-Fun	Cognitive Functional intervention
Cogmed	Computerized memory training program
Conners 3	Conners 3rd Edition
Conners CPT	Conners Continuous Performance Test
CPFT	Continuous Performance Function Test
CPRS	Conners Parent Rating Scale
CPT	Continuous Performance Test
CRS	Conners Rating Scale
CRS-P	Conners Rating Scale Parent
CRS-T	Conners Rating Scale Teacher
CTRS	Conners Teacher Rating Scale
DASS	Depression Anxiety Stress Scale
DB-DOS	Disruptive Behavior Diagnostic Observation Schedule
DBDRS	Disruptive Behavior Disorder Rating Scale
DBRS	Disruptive Behavior Rating Scale
DBP	Diastolic blood pressure
DEX	Dextroamphetamine
DHA	Docosahexaenoic acid
DICA-IV	Diagnostic Interview for Children and Adolescents 4
DISC-IV	Diagnostic Interview Schedule for Children Version IV
DSM-5	Diagnostic and Statistical Manual of Mental Disorders, 5 <sup>th</sup> Edition
DSM-IV-TR	Diagnostic and Statistical Manual of Mental Disorders, 4 <sup>th</sup> Edition, Text Revision
D-TMP	Dexmethylphenidate
ECG	Electrocardiograph
ED	Emergency department
EEG	Electroencephalograph, electroencephalogram, electroencephalography
EHC	Effective Health Care
EIS	Electro-interstitial scan
EMBASE	Excerpta Medica Database
EPA	Eicosapentaenoic acid
EPC	Evidence-based Practice Center
ERP	Event-related potentials
ES	Effect size
FDA	Food and Drug Administration
FSSEE	Family-School Success–Early Elementary
GIR	Guanfacine immediate release
GPA	Grade point average
GXR	Guanfacine extended release
HR	Hazard ratio

<b>Acronym/Abbreviation</b>	<b>Definition</b>
ICD-10	10 <sup>th</sup> revision of the International Statistical Classification of Diseases and Related Health Problems
ICTRP	International Clinical Trials Registry Platform
IRS	Impairment Rating Scale
IVA-2 (BrainTrain, Inc)	Integrated Visual and Auditory 2
IVA-AE2 (BrainTrain, Inc)	Integrated Visual and Auditory Advanced Edition 2
IVA-CPT	Integrated Visual and Auditory Continuous Performance Test
IVA-QS (BrainTrain, Inc)	Integrated Visual and Auditory Quick Screening
K-DBDS	Kiddie Disruptive Behavior Disorder Schedule
K-DISC-IV	Kiddie Computerized Diagnostic Interview Schedule for Children
KQ	Key Question
K-SADS-PL	Kiddie Schedule for Affective Disorders and Schizophrenia Present and Lifetime Version
LA	Linoleic acid
LDX	Lisdexamfetamine
MAS	Mixed amphetamine salts
MASC	Multidimensional Anxiety Scale for Children
MATH-CPT	Mathematics Continuous Performance Test
MEDLINE	National Library of Medicine bibliographic database
Mini KID	Mini International Neuropsychiatric Interview for Children and Adolescents
MPH	Methylphenidate
MRI	Magnetic resonance imaging
MTA	Multisite Multimodal Treatment Study of Children with ADHD
NA	Not applicable
NDG	Ningdong granule
NEBA	Neuropsychiatric EEG-Based Assessment AID
NICHQ Vanderbilt Assessment Scale–PARENT	National Institute for Children’s Health Quality Vanderbilt Assessment Scale Parent
NICHQ Vanderbilt Assessment Scale–TEACHER	National Institute for Children’s Health Quality Vanderbilt Assessment Scale Teacher
NIMH	National Institute of Mental Health
NS	Not significant
NSS	Neurological subtle signs
ODD/CD	Oppositional defiant disorder/Conduct disorder
OROS-MPH	Osmotic release oral system methylphenidate
PACS	Parental account of children’s symptoms
PATS	Preschool ADHD Treatment Study
P-DBDRS	Parent Disruptive Behavior Disorder Rating Scale

<b>Acronym/Abbreviation</b>	<b>Definition</b>
PICOTS	Populations, Interventions, Comparators, Outcomes, Timing, Settings
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
PROSPERO	Prospective Register of Systematic Reviews
PS	Phosphatidylserine
RBBB	Right bundle branch block
RR	Relative risk
RCT	Randomized controlled trial
ROC	Receiver operator characteristic
SBP	Systolic blood pressure
SD	Standard deviation
SDQ	Strengths and Difficulties Questionnaire
SDSC	Sleep Disturbance Scale for Children
SE	Standard error
SMD	Standardized mean difference
SNAP-IV	Swanson, Nolan and Pelham Revision
SOE	Strength of evidence
STAND	Supporting Teens' Autonomy Daily
STEPP	Strategies to Enhance Positive Parenting
SWAN	Strengths and Weaknesses of ADHD and Normal Behavior
TBR	Theta/beta ratio
TEP	Technical expert panel
TOVA	Test of Variables of Attention
WHO	World Health Organization
WIAT	Wechsler Individual Achievement Test
WJ	Woodcock-Johnson test of achievement
WRAT	Wide Range Achievement Test
WPREMB	Weekly Parent Ratings of Evening and Morning Behavior
XR	Extended release

# Appendix A. Exact Search Strings

## PubMed® Search Strategy (November 4, 2016)

### Key Question 1

Set #	Terms
#1	"Attention Deficit Disorder with Hyperactivity"[Mesh] OR "attention deficit hyperactivity disorder"[tiab] OR "ADHD"[tiab] OR "attention deficit disorder"[tiab]
#2	"Pediatrics"[Mesh] OR "Adolescent"[Mesh] OR "Infant"[Mesh] OR "Child"[Mesh] OR child[tiab] OR children[tiab] OR infant[tiab] OR infants[tiab] OR preschool[tiab] OR preschooler[tiab] OR pediatric[tiab] OR teenager[tiab] OR teenagers[tiab] OR teenaged[tiab] OR teen[tiab] OR teens[tiab] OR adolescent[tiab] OR adolescents[tiab] OR adolescence[tiab] OR youth[tiab]
#3	"Attention Deficit and Disruptive Behavior Disorders/diagnosis"[Majr] OR mass screening[mesh] OR questionnaires[mesh] OR Interviews as Topic[Mesh] OR Psychometrics[Mesh] OR Psychiatric Status Rating Scales[Mesh] OR diagnosis[mesh:noexp] OR "Diagnostic Techniques and Procedures"[Mesh] OR "Diagnostic and Statistical Manual of Mental Disorders"[Mesh] OR "Referral and Consultation"[Mesh] OR questionnaire[tiab] OR questionnaires[tiab] OR screening[tiab] OR screen[tiab] OR scale[tiab] OR instrument[tiab] OR instruments[tiab] OR interview[tiab] OR interviews[tiab] OR DSM*[tiab] OR diagnosis[tiab] OR diagnostic[tiab] OR diagnosed[tiab] OR (Vanderbilt[tiab] AND scale[tiab]) OR conners[tiab] OR cprs[tiab] OR ctrs[tiab] OR cprs[tiab] OR crs[tiab] OR "snap-IV"[tiab] OR "snap-4"[tiab] OR "basc-2"[tiab] OR "behavioral assessment system for children"[tiab] OR dbdrs[tiab] OR "disruptive behavior disorder rating scale"[tiab] OR adhd-rs[tiab] OR "adhd rating scale"[tiab] OR ksads[tiab] OR k-sads[tiab] OR kiddie-sads[tiab] OR DISC[tiab] OR "dominance inducement submission and compliance"[tiab] OR "diagnostic interview schedule for children"[tiab] OR "diagnostic inventory for screening children"[tiab] OR "mini-kid"[tiab] OR "Mini Interational Neuropsychiatric interview"[tiab] OR "iva-2"[tiab] OR "iva-qs"[tiab] OR "iva-ae2"[tiab] OR tova[tiab] OR "test of variables of attention"[tiab] OR "neuropsychiatric eeg-based assessment aid"[tiab] OR neba[tiab]
#4	"Sensitivity and Specificity"[Mesh] OR "Diagnostic Errors"[Mesh] OR sensitivity[tiab] OR specificity[tiab] OR accuracy[tiab] OR accurate[tiab] OR accurately[tiab] OR misdiagnos*[tiab] OR (randomized controlled trial[pt] OR controlled clinical trial[pt] OR randomized[tiab] OR randomised[tiab] OR randomization[tiab] OR randomisation[tiab] OR placebo[tiab] OR randomly[tiab] OR trial[tiab] OR groups[tiab] OR Clinical trial[pt] OR "clinical trial"[tiab] OR "clinical trials"[tiab] OR "evaluation studies"[pt] OR "evaluation studies as topic"[MeSH] OR "evaluation study"[tiab] OR evaluation studies[tiab] OR "intervention studies"[MeSH] OR "intervention study"[tiab] OR "intervention studies"[tiab] OR "case-control studies"[MeSH] OR "case-control"[tiab] OR "cohort studies"[MeSH] OR cohort[tiab] OR "longitudinal studies"[MeSH] OR "longitudinal"[tiab] OR longitudinally[tiab] OR "prospective"[tiab] OR prospectively[tiab] OR "retrospective studies"[MeSH] OR "retrospective"[tiab] OR "Cross-Sectional Studies"[Mesh] OR cross-sectional[tiab] OR "comparative study"[pt] OR "comparative study"[tiab] OR systematic[sb] OR "meta-analysis"[pt] OR "meta-analysis as topic"[MeSH] OR "meta-analysis"[tiab] OR "meta-analyses"[tiab]) NOT (Editorial[ptyp] OR Letter[pt] OR Case Reports[pt] OR Comment[pt]) NOT (animals[mh] NOT humans[mh]) AND English[la]
#5	#1 AND #2 AND #3 AND #4
	Publication date from 2009/01/01

## Key Question 2

Set #	Terms
#1	"Attention Deficit Disorder with Hyperactivity"[Mesh] OR "attention deficit hyperactivity disorder"[tiab] OR "ADHD"[tiab] OR "attention deficit disorder"[tiab]
#2	"Pediatrics"[Mesh] OR "Adolescent"[Mesh] OR "Infant"[Mesh] OR "Child"[Mesh] OR child[tiab] OR children[tiab] OR infant[tiab] OR infants[tiab] OR preschool[tiab] OR preschooler[tiab] OR pediatric[tiab] OR teenager[tiab] OR teenagers[tiab] OR teenaged[tiab] OR teen[tiab] OR teens[tiab] OR adolescent[tiab] OR adolescents[tiab] OR adolescence[tiab] OR youth[tiab]
#3	#1 AND #2
#4	"Attention Deficit Disorder with Hyperactivity/drug therapy"[Majr] OR "Central Nervous System Stimulants"[MeSH] OR "Methylphenidate"[MeSH] OR "Dexmethylphenidate"[MeSH] OR "Dextroamphetamine"[MeSH] OR "Adderall"[Supplementary Concept] OR "lisdexamfetamine dimesylate"[Supplementary Concept] OR "Amphetamine"[MeSH] OR "Guanfacine"[MeSH] OR "Sympatholytics"[MeSH] OR "Clonidine"[MeSH] OR "Adrenergic Uptake Inhibitors"[MeSH] OR "Adrenergic Uptake Inhibitors"[Pharmacological Action] OR "Receptors, Adrenergic, alpha-2"[MeSH] OR "Adrenergic alpha-Agonists"[Mesh] OR "Adrenergic alpha-2 Receptor Agonists"[Mesh] OR "atomoxetine"[Supplementary Concept] OR "Antidepressive Agents, Tricyclic"[MeSH] OR "Desipramine"[MeSH] OR "Dopamine Uptake Inhibitors"[MeSH] OR "Sympathomimetics"[MeSH] OR "modafinil"[Supplementary Concept] OR "Serotonin Uptake Inhibitors"[MeSH] OR "Serotonin Uptake Inhibitors"[Pharmacological Action] OR "duloxetine" [Supplementary Concept] OR "Monoamine Oxidase Inhibitors"[MeSH] OR "Monoamine Oxidase"[MeSH] OR "Selegiline"[MeSH] OR "Bupropion"[MeSH] OR "armodafinil" [Supplementary Concept] OR "venlafaxine"[Supplementary Concept] OR "Receptors, N-Methyl-D-Aspartate"[MeSH] OR "Memantine"[MeSH] OR "Amantadine"[MeSH] OR "duloxetine"[Supplementary Concept] OR "Central Nervous System Stimulants" [Pharmacological Action] OR "Adrenergic alpha-2 Receptor Agonists" [Pharmacological Action] OR "Antidepressive Agents, Tricyclic" [Pharmacological Action] OR "Dopamine Uptake Inhibitors" [Pharmacological Action] OR "Monoamine Oxidase Inhibitors" [Pharmacological Action] OR "Central Nervous System Stimulants"[tiab] OR "psychostimulant"[tiab] OR "Methylphenidate"[tiab] OR "Methylphenidate Hydrochloride"[tiab] OR "Aptensio"[tiab] OR "Concerta"[tiab] OR "Ritalin"[tiab] OR "Ritalin LA"[tiab] OR "Medikinet"[tiab] OR "Equasym"[tiab] OR "Quillivant"[tiab] OR "Metadate"[tiab] OR "Daytrana"[tiab] OR "Dexmethylphenidate"[tiab] OR "Dexmethylphenidate Hydrochloride"[tiab] OR "Focalin"[tiab] OR "Dextroamphetamine"[tiab] OR "Dexedrine"[tiab] OR "Dextrostat"[tiab] OR "ProCentra"[tiab] OR "Zenedi"[tiab] OR "mixed amphetamine salts"[tiab] OR "Adderall" [tiab] OR "lisdexamfetamine"[tiab] OR "lisdexamfetamine dimesylate"[tiab] OR "Vyvanse"[tiab] OR "Venvanse"[tiab] OR "Elvanse"[tiab] OR "Tyvanse"[tiab] OR "Dyanavel"[tiab] OR "Evekeo"[tiab] OR "Guanfacine"[tiab] OR "Sympatholytics"[tiab] OR "Central alpha-2 Adrenergic Agonist"[tiab] OR "Clonidine"[tiab] OR "Intuniv"[tiab] OR "Estulic"[tiab] OR "Tenex"[tiab] OR "Catapres"[tiab] OR "Clonidine"[tiab] OR "Kapvay"[tiab] OR "Nexiclon"[tiab] OR "Duraclon"[tiab] OR "Norepinephrine Reuptake Inhibitors"[tiab] OR "Selective Norepinephrine Reuptake Inhibitors"[tiab] OR "Adrenergic Uptake Inhibitors"[tiab] OR "atomoxetine"[tiab] OR "Strattera"[tiab] OR "Tricyclic antidepressants"[tiab] OR "Desipramine"[tiab] OR "Norpramin"[tiab] OR "Nortriptyline"[tiab] OR "Pamelor"[tiab] OR "Dopamine Reuptake Inhibitors"[tiab] OR "modafinil"[tiab] OR "Provigil"[tiab] OR "Armodafinil"[tiab] OR "Norepinephrine-dopamine Reuptake Inhibitors"[tiab] OR "Bupropion"[tiab] OR "Wellbutrin"[tiab] OR "Forfivo"[tiab] OR "Cymbalta"[tiab] OR "venlafaxine"[tiab] OR "reboxetine"[tiab] OR "Monoamine Oxidase Type B inhibitors"[tiab] OR "Selegiline"[tiab] OR "Eldepryl"[tiab] OR "Zelapar"[tiab] OR "NMDA receptors"[tiab] OR "N-Methyl-D-aspartate receptor Antagonists"[tiab] OR "Amantadine"[tiab] OR "Memantine"[tiab] OR "Pertofrane"[tiab] OR "Nuvigil"[tiab] OR "Cymbalta"[tiab] OR "duloxetine"[tiab] OR "Effexor"[tiab] OR "Eldepryl"[tiab] OR "Emsam"[tiab] OR "Trevilor"[tiab] OR "Symmetrel"[tiab] OR "Namenda"[tiab] OR "Zelapar"[tiab]

Set #	Terms
#5	<p>"Attention Deficit Disorder with Hyperactivity/diet therapy"[Majr] OR "Attention Deficit Disorder with Hyperactivity/rehabilitation"[Majr] OR "Psychotherapy"[MeSH] OR "Behavior Therapy"[MeSH] OR "Parent-Child Relations"[MeSH] OR "Play Therapy"[MeSH] OR "Cognitive Therapy"[MeSH] OR "Time Management"[MeSH] OR "Computer-Assisted Instruction"[MeSH] OR "Diet Therapy"[MeSH] OR "Fatty Acids, Omega-3/therapeutic use"[MeSH] OR "Vitamins/administration and dosage"[Mesh] OR "Vitamins/therapeutic use"[MeSH] OR "Food Additives/adverse effects"[MeSH] OR "Probiotics/therapeutic use"[MeSH] OR "Acupuncture Therapy"[MeSH] OR "Remedial Teaching"[MeSH] OR "Early Intervention (Education)"[MeSH] OR "Complementary Therapies"[MeSH] OR "Combined Modality Therapy"[MeSH] OR "psychosocial therapy"[tiab] OR "psychosocial intervention"[tiab] OR "psychosocial interventions"[tiab] OR "psychosocial approach"[tiab] OR "psychosocial approaches"[tiab] OR "psychosocial treatment"[tiab] OR "psychosocial support"[tiab] OR "psychoeducation"[tiab] OR "nonpharmacologic therapy"[tiab] OR "nondrug therapy"[tiab] OR "non-drug therapy"[tiab] OR "Play Therapy"[tiab] OR "cognitive behavioral therapy"[tiab] OR "cognitive behavior therapy"[tiab] OR "cognitive behavioural therapy"[tiab] OR "cognitive behaviour therapy"[tiab] OR Mindfulness[tiab] OR complementary[tiab] OR "alternative medicine"[tiab] OR "alternative therapy"[tiab] OR "alternative therapies"[tiab] OR "Interpersonal skills training"[tiab] OR "Parent-Child Interaction Therapy"[tiab] OR "parent training"[tiab] OR "parent engagement"[tiab] OR "parent management"[tiab] OR "parenting skills"[tiab] OR "parenting intervention"[tiab] OR "parenting interventions"[tiab] OR "Barkley's defiant child"[tiab] OR "Teacher-Child Interaction Training"[tiab] OR "Incredible Years"[tiab] OR "New Forest Parenting"[tiab] OR "Triple P"[tiab] OR "Helping the Noncompliant Child"[tiab] OR "child life and attention skills"[tiab] OR "clas"[tiab] OR PCIT[tiab] OR "parent child interaction therapy"[tiab] OR "Summer Treatment Program"[tiab] OR "Daily Report Card"[tiab] OR "organization skills"[tiab] OR "organizational skills"[tiab] OR "time management"[tiab] OR "homework intervention"[tiab] OR braintrain[tiab] OR "memory training"[tiab] OR "Captain's log mindpower builder"[tiab] OR "memory gyms"[tiab] OR "attention gym"[tiab] OR "smartdriver plus"[tiab] OR "smartmind pro"[tiab] OR "RoboMemo"[tiab] OR "play attention"[tiab] OR metronome[tiab] OR brainmaster[tiab] OR mindmed[tiab] OR "attention lab"[tiab] OR (activate[tiab] AND c8[tiab]) OR "attention training"[tiab] OR "CogniPlus"[tiab] OR cogmed[tiab] OR "working memory training"[tiab] OR biofeedback[tiab] OR neurofeedback[tiab] OR neuroagility[tiab] OR neurooptimal[tiab] OR acupuncture[tiab] OR "vision training"[tiab] OR "visual training"[tiab] OR "vision therapy"[tiab] OR "education intervention"[tiab] OR "cognitive remediation"[tiab] OR neurotherapy[tiab] OR "elimination diet"[tiab] OR "diet therapy"[tiab] OR ("low carb" OR "low carbohydrate" OR "low carbohydrates"[tiab] OR "gluten free") AND diet[tiab] OR "feingold diet"[tiab] OR "red dye"[tiab] OR ((vitamin[tiab] OR vitamins[tiab]) AND (supplement[tiab] OR supplements[tiab])) OR "herbal supplement"[tiab] OR "herbal supplements"[tiab] OR probiotics[tiab] OR "omega 3"[tiab] OR "slow cortical potentials"[tiab] OR "few foods diet"[tiab] OR "oligoantigenic diet"[tiab] OR "restriction diet"[tiab] OR "food intolerance"[tiab] OR "food allergy"[tiab] OR "food allergies"[tiab] OR "food sensitivity"[tiab] OR "food sensitivities"[tiab] OR "multimodal treatment"[tiab] OR homeopathy[tiab] OR homeopathic[tiab] OR chiropractic[tiab] OR chiropractor[tiab]</p>
#6	#4 OR #5
#7	#3 AND #6
#8	<p>(randomized controlled trial[pt] OR controlled clinical trial[pt] OR randomized[tiab] OR randomised[tiab] OR randomization[tiab] OR randomisation[tiab] OR placebo[tiab] OR randomly[tiab] OR trial[tiab] OR groups[tiab] OR Clinical trial[pt] OR "clinical trial"[tiab] OR "clinical trials"[tiab] OR "evaluation studies"[pt] OR "evaluation studies as topic"[MeSH] OR "evaluation study"[tiab] OR "evaluation studies"[tiab] OR "intervention studies"[MeSH] OR "intervention study"[tiab] OR "intervention studies"[tiab] OR "case-control studies"[MeSH] OR "case-control"[tiab] OR "cohort studies"[MeSH] OR cohort[tiab] OR "longitudinal"[tiab] OR longitudinally[tiab] OR "prospective"[tiab] OR prospectively[tiab] OR "retrospective"[tiab] OR "comparative study"[pt] OR "comparative study"[tiab] OR systematic[sb] OR "meta-analysis"[pt] OR "meta-analysis as topic"[MeSH] OR "meta-analysis"[tiab] OR "meta-analyses"[tiab]) NOT (Editorial[ptyp] OR Letter[pt] OR Case Reports[pt] OR Comment[pt]) NOT (animals[mh] NOT humans[mh]) AND English[la]</p>
#9	#7 AND #8
	Publication date from 2009/01/01



## Key Question 3

Set #	Terms
#1	"Attention Deficit Disorder with Hyperactivity"[Mesh] OR "attention deficit hyperactivity disorder"[tiab] OR "ADHD"[tiab] OR "attention deficit disorder"[tiab]
#2	"Pediatrics"[Mesh] OR "Adolescent"[Mesh] OR "Infant"[Mesh] OR "Child"[Mesh] OR child[tiab] OR children[tiab] OR infant[tiab] OR infants[tiab] OR preschool[tiab] OR preschooler[tiab] OR pediatric[tiab] OR teenager[tiab] OR teenagers[tiab] OR teenaged[tiab] OR teen[tiab] OR teens[tiab] OR adolescent[tiab] OR adolescents[tiab] OR adolescence[tiab] OR youth[tiab]
#3	"Secondary Care"[Mesh] OR "Comprehensive Health Care"[Mesh] OR "primary care"[tiab] OR monitor[tiab] OR monitored[tiab] OR monitoring[tiab] OR "follow up"[tiab] OR "followed up"[tiab] OR visit[tiab] OR visits[tiab] OR session[tiab] OR sessions[tiab] OR appointment[tiab] OR appointments[tiab]
#4	(randomized controlled trial[pt] OR controlled clinical trial[pt] OR randomized[tiab] OR randomised[tiab] OR randomization[tiab] OR randomisation[tiab] OR placebo[tiab] OR randomly[tiab] OR trial[tiab] OR groups[tiab] OR Clinical trial[pt] OR "clinical trial"[tiab] OR "clinical trials"[tiab] OR "evaluation studies"[pt] OR "evaluation studies as topic"[MeSH] OR "evaluation study"[tiab] OR "evaluation studies"[tiab] OR "intervention studies"[MeSH] OR "intervention study"[tiab] OR "intervention studies"[tiab] OR "case-control studies"[MeSH] OR "case-control"[tiab] OR "cohort studies"[MeSH] OR cohort[tiab] OR "longitudinal"[tiab] OR longitudinally[tiab] OR "prospective"[tiab] OR prospectively[tiab] OR "retrospective"[tiab] OR "comparative study"[pt] OR "comparative study"[tiab] OR systematic[sb] OR "meta-analysis"[pt] OR "meta-analysis as topic"[MeSH] OR "meta-analysis"[tiab] OR "meta-analyses"[tiab]) NOT (Editorial[ptyp] OR Letter[pt] OR Case Reports[pt] OR Comment[pt]) NOT (animals[mh] NOT humans[mh]) AND English[la]
#5	#1 AND #2 AND #3 AND #4
	Publication date from 2009/01/01

# Embase® Search Strategy (November 7, 2016)

Platform: Embase.com

## Key Question 1

Set #	Terms
#1	'attention deficit disorder'/exp OR "attention deficit hyperactivity disorder":ab,ti OR "ADHD":ab,ti OR "attention deficit disorder":ab,ti
#2	'pediatrics'/exp OR 'adolescent'/exp OR 'infant'/exp OR 'child'/exp OR child:ab,ti OR children:ab,ti OR infant:ab,ti OR infants:ab,ti OR preschool:ab,ti OR preschooler:ab,ti OR pediatric:ab,ti OR teenager:ab,ti OR teenagers:ab,ti OR teenaged:ab,ti OR teen:ab,ti OR teens:ab,ti OR adolescent:ab,ti OR adolescents:ab,ti OR adolescence:ab,ti OR youth:ab,ti
#3	'attention deficit disorder'/exp/mj/dm_di OR 'screening'/exp OR 'questionnaire'/exp OR 'interview'/exp OR 'psychometry'/exp OR 'psychological rating scale'/exp OR 'diagnosis'/exp OR 'assessment of humans'/exp OR 'checklist'/exp OR 'clinical assessment tool'/exp OR 'clinical observation'/exp OR 'Diagnostic and Statistical Manual of Mental Disorders'/exp OR 'patient referral'/exp OR questionnaire:ab,ti OR questionnaires:ab,ti OR screening:ab,ti OR screen:ab,ti OR scale:ab,ti OR instrument:ab,ti OR instruments:ab,ti OR interview:ab,ti OR interviews:ab,ti OR DSM*:ab,ti OR diagnosis:ab,ti OR diagnostic:ab,ti OR diagnosed:ab,ti OR (Vanderbilt:ab,ti AND scale:ab,ti) OR conners:ab,ti OR cprs:ab,ti OR ctrs:ab,ti OR cprs:ab,ti OR crs:ab,ti OR "snap-IV":ab,ti OR "snap-4":ab,ti OR "basc-2":ab,ti OR "behavioral assessment system for children":ab,ti OR dbdrs:ab,ti OR "disruptive behavior disorder rating scale":ab,ti OR adhd-rs:ab,ti OR "adhd rating scale":ab,ti OR ksads:ab,ti OR k-sads:ab,ti OR kiddie-sads:ab,ti OR DISC:ab,ti OR "dominance inducement submission and compliance":ab,ti OR "diagnostic interview schedule for children":ab,ti OR "diagnostic inventory for screening children":ab,ti OR "mini-kid":ab,ti OR "Mini Interational Neuropsychiatric interview":ab,ti OR "iva-2":ab,ti OR "iva-qs":ab,ti OR "iva-ae2":ab,ti OR tova:ab,ti OR "test of variables of attention":ab,ti OR "neuropsychiatric eeg-based assessment aid":ab,ti OR neba:ab,ti
#4	('sensitivity and specificity'/exp OR 'predictive value'/exp OR 'diagnostic error'/exp OR sensitivity:ab,ti OR specificity:ab,ti OR accuracy:ab,ti OR accurate:ab,ti OR accurately:ab,ti OR misdiagnos*:ab,ti OR 'randomized controlled trial'/exp OR 'crossover procedure'/exp OR 'double blind procedure'/exp OR 'single blind procedure'/exp OR random*:ab,ti OR factorial*:ab,ti OR crossover*:ab,ti OR (cross NEAR/1 over*):ab,ti OR placebo*:ab,ti OR (doubl* NEAR/1 blind*):ab,ti OR (singl* NEAR/1 blind*):ab,ti OR assign*:ab,ti OR allocat*:ab,ti OR volunteer*:ab,ti OR 'clinical study'/exp OR 'clinical trial':ti,ab OR 'clinical trials':ti,ab OR 'controlled study'/exp OR 'evaluation'/exp OR 'evaluation study':ab,ti OR 'evaluation studies':ab,ti OR 'intervention study':ab,ti OR 'intervention studies':ab,ti OR 'case control':ab,ti OR 'cohort analysis'/exp OR cohort:ab,ti OR longitudinal*:ab,ti OR prospective:ab,ti OR prospectively:ab,ti OR retrospective:ab,ti OR 'follow up'/exp OR 'follow up':ab,ti OR 'comparative effectiveness'/exp OR 'comparative study'/exp OR 'comparative study':ab,ti OR 'comparative studies':ab,ti OR 'evidence based medicine'/exp OR 'systematic review':ab,ti OR 'meta-analysis':ab,ti OR 'meta-analyses':ab,ti) NOT ('case report'/exp OR 'case study'/exp OR 'editorial'/exp OR 'letter'/exp OR 'note'/exp)
#5	#1 AND #2 AND #3 AND #4
#6	#5 AND [embase]/lim NOT [medline]/lim
#7	#6 AND [humans]/lim AND [2009-2015]/py

## Key Question 2

Set #	Terms
#1	'attention deficit disorder'/exp OR "attention deficit hyperactivity disorder":ab,ti OR "ADHD":ab,ti OR "attention deficit disorder":ab,ti
#2	'pediatrics'/exp OR 'adolescent'/exp OR 'infant'/exp OR 'child'/exp OR child:ab,ti OR children:ab,ti OR infant:ab,ti OR infants:ab,ti OR preschool:ab,ti OR preschooler:ab,ti OR pediatric:ab,ti OR teenager:ab,ti OR teenagers:ab,ti OR teenaged:ab,ti OR teen:ab,ti OR teens:ab,ti OR adolescent:ab,ti OR adolescents:ab,ti OR adolescence:ab,ti OR youth:ab,ti
#3	#1 AND #2
#4	'attention deficit disorder'/exp/mj/dm_dt OR 'central stimulant agent'/exp OR 'psychostimulant agent'/exp OR 'guanfacine'/exp OR 'adrenergic receptor affecting agent'/exp OR 'atomoxetine'/exp OR 'antidepressant agent'/exp OR 'dopamine uptake inhibitor'/exp OR 'n methyl dextro aspartic acid receptor'/exp OR 'memantine'/exp OR 'amantadine'/exp OR 'dopamine uptake inhibitor'/exp OR 'Central Nervous System Stimulants':ab,ti OR 'psychostimulant':ab,ti OR 'Methylphenidate':ab,ti OR 'Methylphenidate Hydrochloride':ab,ti OR 'Aptensio':ab,ti OR 'Concerta':ab,ti OR 'Ritalin':ab,ti OR 'Ritalin LA':ab,ti OR 'Medikinet':ab,ti OR 'Equasym':ab,ti OR 'Quillivant':ab,ti OR 'Metadate':ab,ti OR 'Daytrana':ab,ti OR 'Dexmethylphenidate':ab,ti OR 'Dexmethylphenidate Hydrochloride':ab,ti OR 'Focalin':ab,ti OR 'Dextroamphetamine':ab,ti OR 'Dexedrine':ab,ti OR 'Dextrostat':ab,ti OR 'ProCentra':ab,ti OR 'Zenedi':ab,ti OR 'mixed amphetamine salts':ab,ti OR 'Adderall':ab,ti OR 'lisdexamfetamine':ab,ti OR 'lisdexamfetamine dimesylate':ab,ti OR 'Vyvanse':ab,ti OR 'Venvanse':ab,ti OR 'Elvanse':ab,ti OR 'Tyvanse':ab,ti OR 'Dyanavel':ab,ti OR 'Evekeo':ab,ti OR 'Guanfacine':ab,ti OR 'Sympatholytics':ab,ti OR 'Central alpha-2 Adrenergic Agonist':ab,ti OR 'Clonidine':ab,ti OR 'Intuniv':ab,ti OR 'Estulic':ab,ti OR 'Tenex':ab,ti OR 'Catapres':ab,ti OR 'Clophelin':ab,ti OR 'Kapvay':ab,ti OR 'Nexiclon':ab,ti OR 'Duraclon':ab,ti OR 'Norepinephrine Reuptake Inhibitors':ab,ti OR 'Selective Norepinephrine Reuptake Inhibitors':ab,ti OR 'Adrenergic Uptake Inhibitors':ab,ti OR 'atomoxetine':ab,ti OR 'Strattera':ab,ti OR 'Tricyclic antidepressants':ab,ti OR 'Desipramine':ab,ti OR 'Norpramin':ab,ti OR 'Nortriptyline':ab,ti OR 'Pamelor':ab,ti OR 'Dopamine Reuptake Inhibitors':ab,ti OR 'modafinil':ab,ti OR 'Provigil':ab,ti OR 'Armodafinil':ab,ti OR 'Norepinephrine-dopamine Reuptake Inhibitors':ab,ti OR 'Bupropion':ab,ti OR 'Wellbutrin':ab,ti OR 'Forfivo':ab,ti OR 'Cymbalta':ab,ti OR 'venlafaxine':ab,ti OR 'reboxetine':ab,ti OR 'Monoamine Oxidase Type B inhibitors':ab,ti OR 'Selegiline':ab,ti OR 'Eldepryl':ab,ti OR 'Zelapar':ab,ti OR 'NMDA receptors':ab,ti OR 'N-Methyl-D-aspartate receptor Antagonists':ab,ti OR 'Amantadine':ab,ti OR 'Memantine':ab,ti OR 'Pertofrane':ab,ti OR 'Nuvigil':ab,ti OR 'Cymbalta':ab,ti OR 'duloxetine':ab,ti OR 'Effexor':ab,ti OR 'Eldepryl':ab,ti OR 'Emsam':ab,ti OR 'Trevilor':ab,ti OR 'Symmetrel':ab,ti OR 'Namenda':ab,ti OR 'Zelapar':ab,ti

Set #	Terms
#5	'attention deficit disorder'/exp/mj/dm_rh,dm_dm OR 'psychotherapy'/exp OR 'child psychiatry'/exp OR 'child parent relation'/exp OR 'time management'/exp OR 'feedback system'/exp OR 'teaching'/exp OR 'adaptive behavior'/exp OR 'diet therapy'/exp OR 'omega 3 fatty acid'/exp OR 'vitamin'/exp/dd_do,dd_dt,dd_ad OR 'food additive'/exp/dd_ae OR 'probiotic agent'/exp OR 'acupuncture'/exp OR 'early childhood intervention'/exp OR 'alternative medicine'/exp OR 'psychosocial therapy':ab,ti OR 'psychosocial intervention':ab,ti OR 'psychosocial interventions':ab,ti OR 'psychosocial approach':ab,ti OR 'psychosocial approaches':ab,ti OR 'psychosocial treatment':ab,ti OR 'psychosocial support':ab,ti OR 'psychoeducation':ab,ti OR 'nonpharmacologic therapy':ab,ti OR 'nondrug therapy':ab,ti OR 'non-drug therapy':ab,ti OR 'Play Therapy':ab,ti OR 'cognitive behavioral therapy':ab,ti OR 'cognitive behavior therapy':ab,ti OR 'cognitive behavioural therapy':ab,ti OR 'cognitive behaviour therapy':ab,ti OR Mindfulness:ab,ti OR complementary:ab,ti OR 'alternative medicine':ab,ti OR 'alternative therapy':ab,ti OR 'alternative therapies':ab,ti OR 'Interpersonal skills training':ab,ti OR 'Parent-Child Interaction Therapy':ab,ti OR 'parent training':ab,ti OR 'parent engagement':ab,ti OR 'parent management':ab,ti OR 'parenting skills':ab,ti OR 'parenting intervention':ab,ti OR 'parenting interventions':ab,ti OR 'Barkleys defiant child':ab,ti OR 'Teacher-Child Interaction Training':ab,ti OR 'Incredible Years':ab,ti OR 'New Forest Parenting':ab,ti OR 'Triple P':ab,ti OR 'Helping the Noncompliant Child':ab,ti OR 'child life and attention skills':ab,ti OR 'clas':ab,ti OR PCIT:ab,ti OR 'parent child interaction therapy':ab,ti OR 'Summer Treatment Program':ab,ti OR 'Daily Report Card':ab,ti OR 'organization skills':ab,ti OR 'organizational skills':ab,ti OR 'time management':ab,ti OR 'homework intervention':ab,ti OR 'braintrain':ab,ti OR 'memory training':ab,ti OR 'Captains log mindpower builder':ab,ti OR 'memory gyms':ab,ti OR 'attention gym':ab,ti OR 'smartdriver plus':ab,ti OR 'smartmind pro':ab,ti OR 'RoboMemo':ab,ti OR 'play attention':ab,ti OR 'metronome':ab,ti OR 'brainmaster':ab,ti OR 'mindmed':ab,ti OR 'attention lab':ab,ti OR (activate:ab,ti AND c8:ab,ti) OR 'attention training':ab,ti OR 'CogniPlus':ab,ti OR cogmed:ab,ti OR 'working memory training':ab,ti OR 'biofeedback':ab,ti OR 'neurofeedback':ab,ti OR 'neuroagility':ab,ti OR 'neuroptimal':ab,ti OR 'acupuncture':ab,ti OR 'vision training':ab,ti OR 'visual training':ab,ti OR 'vision therapy':ab,ti OR 'education intervention':ab,ti OR 'cognitive remediation':ab,ti OR 'neurotherapy':ab,ti OR 'elimination diet':ab,ti OR 'diet therapy':ab,ti OR ('low carb' OR 'low carbohydrate' OR 'low carbohydrates':ab,ti OR 'gluten free') AND diet:ab,ti) OR 'feingold diet':ab,ti OR 'red dye':ab,ti OR ((vitamin:ab,ti OR vitamins:ab,ti) AND (supplement:ab,ti OR supplements:ab,ti)) OR 'herbal supplement':ab,ti OR 'herbal supplements':ab,ti OR 'probiotics':ab,ti OR 'omega 3':ab,ti OR 'slow cortical potentials':ab,ti OR 'few foods diet':ab,ti OR 'oligoantigenic diet':ab,ti OR 'restriction diet':ab,ti OR 'food intolerance':ab,ti OR 'food allergy':ab,ti OR 'food allergies':ab,ti OR 'food sensitivity':ab,ti OR 'food sensitivities':ab,ti OR 'multimodal treatment':ab,ti OR 'homeopathy':ab,ti OR 'homeopathic':ab,ti OR 'chiropractic':ab,ti OR 'chiropractor':ab,ti
#6	#4 OR #5
#7	#3 AND #6
#8	('randomized controlled trial'/exp OR 'crossover procedure'/exp OR 'double blind procedure'/exp OR 'single blind procedure'/exp OR random*:ab,ti OR factorial*:ab,ti OR crossover*:ab,ti OR (cross NEAR/1 over*):ab,ti OR placebo*:ab,ti OR (doubl* NEAR/1 blind*):ab,ti OR (singl* NEAR/1 blind*):ab,ti OR assign*:ab,ti OR allocat*:ab,ti OR volunteer*:ab,ti OR 'clinical study'/exp OR 'clinical trial':ti,ab OR 'clinical trials':ti,ab OR 'controlled study'/exp OR 'evaluation'/exp OR 'evaluation study':ab,ti OR 'evaluation studies':ab,ti OR 'intervention study':ab,ti OR 'intervention studies':ab,ti OR 'case control':ab,ti OR 'cohort analysis'/exp OR cohort:ab,ti OR longitudinal*:ab,ti OR prospective:ab,ti OR prospectively:ab,ti OR retrospective:ab,ti OR 'follow up'/exp OR 'follow up':ab,ti OR 'comparative effectiveness'/exp OR 'comparative study'/exp OR 'comparative study':ab,ti OR 'comparative studies':ab,ti OR 'evidence based medicine'/exp OR 'systematic review':ab,ti OR 'meta-analysis':ab,ti OR 'meta-analyses':ab,ti) NOT ('case report'/exp OR 'case study'/exp OR 'editorial'/exp OR 'letter'/exp OR 'note'/exp)
#9	#7 AND #8
#10	#9 AND [embase]/lim NOT [medline]/lim
#11	#10 AND [humans]/lim AND [2009-2015]/py

## Key Question 3

Set #	Terms
#1	'attention deficit disorder'/exp OR "attention deficit hyperactivity disorder":ab,ti OR "ADHD":ab,ti OR "attention deficit disorder":ab,ti
#2	'pediatrics'/exp OR 'adolescent'/exp OR 'infant'/exp OR 'child'/exp OR child:ab,ti OR children:ab,ti OR infant:ab,ti OR infants:ab,ti OR preschool:ab,ti OR preschooler:ab,ti OR pediatric:ab,ti OR teenager:ab,ti OR teenagers:ab,ti OR teenaged:ab,ti OR teen:ab,ti OR teens:ab,ti OR adolescent:ab,ti OR adolescents:ab,ti OR adolescence:ab,ti OR youth:ab,ti
#3	'evaluation and follow up'/exp OR 'primary health care'/exp OR 'secondary health care'/exp OR 'clinical handover'/exp OR 'patient monitoring'/exp OR monitor:ab,ti OR monitored:ab,ti OR monitoring:ab,ti OR "follow up":ab,ti OR "followed up":ab,ti OR visit:ab,ti OR visits:ab,ti OR session:ab,ti OR sessions:ab,ti OR appointment:ab,ti OR appointments:ab,ti
#4	('randomized controlled trial'/exp OR 'crossover procedure'/exp OR 'double blind procedure'/exp OR 'single blind procedure'/exp OR random*:ab,ti OR factorial*:ab,ti OR crossover*:ab,ti OR (cross NEAR/1 over*):ab,ti OR placebo*:ab,ti OR (doubl* NEAR/1 blind*):ab,ti OR (singl* NEAR/1 blind*):ab,ti OR assign*:ab,ti OR allocat*:ab,ti OR volunteer*:ab,ti OR 'clinical study'/exp OR 'clinical trial':ti,ab OR 'clinical trials':ti,ab OR 'controlled study'/exp OR 'evaluation'/exp OR 'evaluation study':ab,ti OR 'evaluation studies':ab,ti OR 'intervention study':ab,ti OR 'intervention studies':ab,ti OR 'case control':ab,ti OR 'cohort analysis'/exp OR cohort:ab,ti OR longitudinal*:ab,ti OR prospective:ab,ti OR prospectively:ab,ti OR retrospective:ab,ti OR 'follow up'/exp OR 'follow up':ab,ti OR 'comparative effectiveness'/exp OR 'comparative study'/exp OR 'comparative study':ab,ti OR 'comparative studies':ab,ti OR 'evidence based medicine'/exp OR 'systematic review':ab,ti OR 'meta-analysis':ab,ti OR 'meta-analyses':ab,ti) NOT ('case report'/exp OR 'case study'/exp OR 'editorial'/exp OR 'letter'/exp OR 'note'/exp)
#5	#1 AND #2 AND #3 AND #4
#6	#5 AND [humans]/lim AND [2009-2015]/py
#7	#6 AND [embase]/lim NOT [medline]/lim

# PsycInfo Search Strategy (November 7, 2016)

## Key Question 1

Set #	Terms
#1	DE "Attention Deficit Disorder with Hyperactivity" OR TI ( "attention deficit hyperactivity disorder" OR ADHD OR "attention deficit disorder" ) OR AB ( "attention deficit hyperactivity disorder" OR ADHD OR "attention deficit disorder"
#2	AG (childhood OR adolescence ) OR DE "Pediatrics" OR TI ( child OR children OR infant OR infants OR preschool OR preschooler OR pediatric OR teenager OR teenagers OR teenaged OR teen OR teens OR adolescent OR adolescents OR adolescence OR youth ) OR AB ( child OR children OR infant OR infants OR preschool OR preschooler OR pediatric OR teenager OR teenagers OR teenaged OR teen OR teens OR adolescent OR adolescents OR adolescence OR youth )
#3	DE "Screening" OR DE "Health Screening" OR DE "Questionnaires" OR DE "Screening Tests" OR DE "Psychological Screening Inventory" OR DE "Psychiatric Evaluation" OR DE "Psychodiagnosis" OR DE "Psychodiagnostic Interview" OR DE "Psychometrics" OR DE "Rating Scales" OR DE "Diagnosis" OR DE "Diagnostic and Statistical Manual" OR DE "Professional Referral" OR DE "Diagnostic Interview Schedule" OR DE "Behavioral Assessment" OR TI ( questionnaire OR questionnaires OR screening OR screen OR scale OR instrument OR instruments OR interview OR interviews OR DSM* OR diagnosis OR diagnostic OR diagnosed OR (Vanderbilt AND scale) OR conners OR cprs OR ctrs OR cprs OR crs OR "snap-IV" OR "snap-4" OR "basc-2" OR "behavioral assessment system for children" OR dbdrs OR "disruptive behavior disorder rating scale" OR adhd-rs OR "adhd rating scale" OR ksads OR k-sads OR kiddie-sads OR DISC OR "dominance inducement submission and compliance" OR "diagnostic interview schedule for children" OR "diagnostic inventory for screening children" OR "mini-kid" OR "Mini Interational Neuropsychiatric interview" OR "iva-2" OR "iva-qs" OR "iva-ae2" OR tova OR "test of variables of attention" OR "neuropsychiatric eeg-based assessment aid" OR neba ) OR AB ( questionnaire OR questionnaires OR screening OR screen OR scale OR instrument OR instruments OR interview OR interviews OR DSM* OR diagnosis OR diagnostic OR diagnosed OR (Vanderbilt AND scale) OR conners OR cprs OR ctrs OR cprs OR crs OR "snap-IV" OR "snap-4" OR "basc-2" OR "behavioral assessment system for children" OR dbdrs OR "disruptive behavior disorder rating scale" OR adhd-rs OR "adhd rating scale" OR ksads OR k-sads OR kiddie-sads OR DISC OR "dominance inducement submission and compliance" OR "diagnostic interview schedule for children" OR "diagnostic inventory for screening children" OR "mini-kid" OR "Mini Interational Neuropsychiatric interview" OR "iva-2" OR "iva-qs" OR "iva-ae2" OR tova OR "test of variables of attention" OR "neuropsychiatric eeg-based assessment aid" OR neba )
#4	(DE "Misdiagnosis" OR ZC "longitudinal study" OR ZC "empirical study" OR ZC "followup study" OR ZC "longitudinal study" OR ZC "meta analysis" OR ZC "prospective study" OR ZC "retrospective study" OR ZC "systematic review" OR ZC "treatment outcome/clinical trial" OR DE "Clinical Trials" OR DE "Cohort Analysis" OR DE "Followup Studies" OR DE "Longitudinal Studies" OR DE "Prospective Studies" OR DE "Meta Analysis" OR TI ( sensitivity OR specificity OR accuracy OR accurate OR accurately OR misdiagnos* OR randomized OR randomised OR randomization OR randomisation OR randomly OR trial OR groups OR trials OR "evaluation study" OR evaluation studies OR "intervention study" OR "intervention studies" OR "case-control" OR cohort OR "cross-sectional" OR longitudinal OR longitudinally OR prospective OR prospectively OR retrospective OR "comparative study" OR "meta-analysis" OR "meta-analyses" ) OR AB ( sensitivity OR specificity OR accuracy OR accurate OR accurately OR misdiagnos* OR randomized OR randomised OR randomization OR randomisation OR randomly OR trial OR groups OR trials OR "evaluation study" OR evaluation studies OR "intervention study" OR "intervention studies" OR "case-control" OR cohort OR "cross-sectional" OR longitudinal OR longitudinally OR prospective OR prospectively OR retrospective OR "comparative study" OR "meta-analysis" OR "meta-analyses" )) AND (ZZ "journal article")
#5	#1 AND #2 AND #3 AND #4
#6	#5, since 2009, English

## Key Question 2

Set #	Terms
#1	DE "Attention Deficit Disorder with Hyperactivity" OR TI ( "attention deficit hyperactivity disorder" OR ADHD OR "attention deficit disorder" ) OR AB ( "attention deficit hyperactivity disorder" OR ADHD OR "attention deficit disorder"
#2	AG (childhood OR adolescence ) OR DE "Pediatrics" OR TI ( child OR children OR infant OR infants OR preschool OR preschooler OR pediatric OR teenager OR teenagers OR teenaged OR teen OR teens OR adolescent OR adolescents OR adolescence OR youth ) OR AB ( child OR children OR infant OR infants OR preschool OR preschooler OR pediatric OR teenager OR teenagers OR teenaged OR teen OR teens OR adolescent OR adolescents OR adolescence OR youth )
#3	#1 AND #2
#4	DE "CNS Stimulating Drugs" OR DE "Methylphenidate" OR DE "Dextroamphetamine" OR DE "Amphetamine" OR DE "Clonidine" OR DE "Serotonin Norepinephrine Reuptake Inhibitors" OR DE "Atomoxetine" OR DE "Tricyclic Antidepressant Drugs" OR DE "Desipramine" OR DE "Nortriptyline" OR DE "Bupropion" OR DE "Serotonin Norepinephrine Reuptake Inhibitors" OR DE "Venlafaxine" OR DE "Monoamine Oxidase Inhibitors" OR DE "Amantadine" OR TI ( psychostimulants OR "CNS stimulating" OR "Central Nervous System stimulants" OR methylphenidate OR Dexmethylphenidate OR Dextroamphetamine OR lisdexamfetamine OR Amphetamine OR aptensio OR concerta OR Ritalin OR methylin OR medikinet OR equasym OR quillivant OR metadate OR daytrana OR focalin OR Dexedrine OR dextrostat OR procentra OR zenzedi OR Adderall OR vyvanse OR elvanse OR tyvense OR dyanavel OR evekeo OR "alpha-2 agonists" OR guanfacine OR intuniv OR tenex OR estulic OR afken OR clonidine OR catapres OR clophelin OR kapvay OR nexiclon OR duraclon OR "Serotonin Norepinephrine Reuptake Inhibitors" OR Strattera OR atomoxetine OR "Tricyclic Antidepressants " OR "Desipramine" OR "Nortriptyline" OR norpramin OR pertofrane OR pamelor OR "dopamine reuptake inhibitors" OR modanifil OR Provigil OR alertec OR modavigil OR modiodal OR modalert OR armodafinil OR nuvigil OR "norepinephrine-dopamine reuptake inhibitors" OR bupropion OR Wellbutrin OR zyban OR forfivo OR "Serotonin Norepinephrine Reuptake Inhibitors" OR duloxetine OR Cymbalta OR "serotonin norepinephrine dopamine reuptake inhibitors" OR "Venlafaxine" OR Effexor OR trevilor OR (Monoamine Oxidase AND Inhibitors) OR selegiline OR eldepryl OR emsam OR selgene OR zelapar OR "n methyl d aspartate receptor agonists" OR "Amantadine" OR symmetrel OR memantine OR Namenda ) OR AB ( psychostimulants OR "CNS stimulating" OR "Central Nervous System stimulants" OR methylphenidate OR Dexmethylphenidate OR Dextroamphetamine OR lisdexamfetamine OR Amphetamine OR aptensio OR concerta OR Ritalin OR methylin OR medikinet OR equasym OR quillivant OR metadate OR daytrana OR focalin OR Dexedrine OR dextrostat OR procentra OR zenzedi OR Adderall OR vyvanse OR elvanse OR tyvense OR dyanavel OR evekeo OR "alpha-2 agonists" OR guanfacine OR intuniv OR tenex OR estulic OR afken OR clonidine OR catapres OR clophelin OR kapvay OR nexiclon OR duraclon OR "Serotonin Norepinephrine Reuptake Inhibitors" OR Strattera OR atomoxetine OR "Tricyclic Antidepressants " OR "Desipramine" OR "Nortriptyline" OR norpramin OR pertofrane OR pamelor OR "dopamine reuptake inhibitors" OR modanifil OR Provigil OR alertec OR modavigil OR modiodal OR modalert OR armodafinil OR nuvigil OR "norepinephrine-dopamine reuptake inhibitors" OR bupropion OR Wellbutrin OR zyban OR forfivo OR "Serotonin Norepinephrine Reuptake Inhibitors" OR duloxetine OR Cymbalta OR "serotonin norepinephrine dopamine reuptake inhibitors" OR "Venlafaxine" OR Effexor OR trevilor OR (Monoamine Oxidase AND Inhibitors) OR selegiline OR eldepryl OR emsam OR selgene OR zelapar OR "n methyl d aspartate receptor agonists" OR "Amantadine" OR symmetrel OR memantine OR Namenda )

Set #	Terms
#5	<p>DE "Psychotherapy" OR DE "Adolescent Psychotherapy" OR DE "Multisystemic Therapy" OR DE "Behavior Therapy" OR DE "Dialectical Behavior Therapy" OR DE "Brief Psychotherapy" OR DE "Child Psychotherapy" OR DE "Play Therapy" OR DE "Client Centered Therapy" OR DE "Cognitive Behavior Therapy" OR DE "Group Psychotherapy" OR DE "Therapeutic Community" OR DE "Integrative Psychotherapy" OR DE "Psychotherapeutic Counseling" OR DE "Family Therapy" OR DE "Supportive Psychotherapy" OR DE "Cognitive Therapy" OR DE "Parent Training" OR DE "Parent Child Relations" OR DE "Time Management" OR DE "Mindfulness" OR DE "School Based Intervention" OR DE "Memory Training" OR DE "Biofeedback Training" OR DE "Biofeedback" OR DE "Computer Assisted Instruction" OR DE "Intelligent Tutoring Systems" OR DE "Diets" OR DE "Dietary Supplements" OR DE "Food Additives" OR DE "Fatty Acids" OR DE "Acupuncture" OR DE "Remedial Education" OR DE "Early Intervention" OR DE "Alternative Medicine" OR TI ( "psychosocial therapy" OR "psychosocial intervention" OR "psychosocial interventions" OR "psychosocial approach" OR "psychosocial approaches" OR "psychosocial treatment" OR "psychosocial support" OR "psychoeducation" OR "nonpharmacologic therapy" OR "nondrug therapy" OR "non-drug therapy" OR "Play Therapy" OR "cognitive behavioral therapy" OR "cognitive behavior therapy" OR "cognitive behavioural therapy" OR "cognitive behaviour therapy" OR Mindfulness OR complementary OR "alternative medicine" OR "alternative therapy" OR "alternative therapies" OR "Interpersonal skills training" OR "Parent-Child Interaction Therapy" OR "parent training" OR "parent engagement" OR "parent management" OR "parenting skills" OR "parenting intervention" OR "parenting interventions" OR "Barkley's defiant child" OR "Teacher-Child Interaction Training" OR "Incredible Years" OR "New Forest Parenting" OR "Triple P" OR "Helping the Noncompliant Child" OR "child life and attention skills" OR "clas" OR PCIT OR "parent child interaction therapy" OR "Summer Treatment Program" OR "Daily Report Card" OR "organization skills" OR "organizational skills" OR "time management" OR "homework intervention" OR braintrain OR "memory training" OR "Captain's log mindpower builder" OR "memory gyms" OR "attention gym" OR "smartdriver plus" OR "smartmind pro" OR "RoboMemo" OR "play attention" OR metronome OR brainmaster OR mindmed OR "attention lab" OR (activate AND c8) OR "attention training" OR "CogniPlus" OR cogmed OR "working memory training" OR biofeedback OR neurofeedback OR neuroagility OR neurooptimal OR acupuncture OR "vision training" OR "visual training" OR "vision therapy" OR "education intervention" OR "cognitive remediation" OR neurotherapy OR "elimination diet" OR "diet therapy" OR (("low carb" OR "low carbohydrate" OR "low carbohydrates" OR "gluten free") AND diet) OR "feingold diet" OR "red dye" OR ((vitamin OR vitamins) AND (supplement OR supplements)) OR "herbal supplement" OR "herbal supplements" OR probiotics OR "omega 3" OR "slow cortical potentials" OR "few foods diet" OR "oligoantigenic diet" OR "restriction diet" OR "food intolerance" OR "food allergy" OR "food allergies" OR "food sensitivity" OR "food sensitivities" OR "multimodal treatment" OR homeopathy OR homeopathic OR chiropractic OR chiropractor ) OR AB ( "psychosocial therapy" OR "psychosocial intervention" OR "psychosocial interventions" OR "psychosocial approach" OR "psychosocial approaches" OR "psychosocial treatment" OR "psychosocial support" OR "psychoeducation" OR "nonpharmacologic therapy" OR "nondrug therapy" OR "non-drug therapy" OR "Play Therapy" OR "cognitive behavioral therapy" OR "cognitive behavior therapy" OR "cognitive behavioural therapy" OR "cognitive behaviour therapy" OR Mindfulness OR complementary OR "alternative medicine" OR "alternative therapy" OR "alternative therapies" OR "Interpersonal skills training" OR "Parent-Child Interaction Therapy" OR "parent training" OR "parent engagement" OR "parent management" OR "parenting skills" OR "parenting intervention" OR "parenting interventions" OR "Barkley's defiant child" OR "Teacher-Child Interaction Training" OR "Incredible Years" OR "New Forest Parenting" OR "Triple P" OR "Helping the Noncompliant Child" OR "child life and attention skills" OR "clas" OR PCIT OR "parent child interaction therapy" OR "Summer Treatment Program" OR "Daily Report Card" OR "organization skills" OR "organizational skills" OR "time management" OR "homework intervention" OR braintrain OR "memory training" OR "Captain's log mindpower builder" OR "memory gyms" OR "attention gym" OR "smartdriver plus" OR "smartmind pro" OR "RoboMemo" OR "play attention" OR metronome OR brainmaster OR mindmed OR "attention lab" OR (activate AND c8) OR "attention training" OR "CogniPlus" OR cogmed OR "working memory training" OR biofeedback OR neurofeedback OR neuroagility OR neurooptimal OR acupuncture OR "vision training" OR "visual training" OR "vision therapy" OR "education intervention" OR "cognitive remediation" OR neurotherapy OR "elimination diet" OR "diet therapy" OR (("low carb" OR "low carbohydrate" OR "low carbohydrates" OR "gluten free") AND diet) OR "feingold diet" OR "red dye" OR ((vitamin OR vitamins) AND (supplement OR supplements)) OR "herbal supplement" OR "herbal supplements" OR probiotics OR "omega 3" OR "slow cortical potentials" OR "few foods diet" OR "oligoantigenic diet" OR "restriction diet" OR "food intolerance" OR "food allergy" OR "food allergies" OR "food sensitivity" OR "food sensitivities" OR "multimodal treatment" OR homeopathy OR homeopathic OR chiropractic OR chiropractor )</p>
6	#4 OR #5



Set #	Terms
7	#3 AND #6
8	ZC "longitudinal study" OR ZC "empirical study" OR ZC "followup study" OR ZC "longitudinal study" OR ZC "meta analysis" OR ZC "prospective study" OR ZC "retrospective study" OR ZC "systematic review" OR ZC "treatment outcome/clinical trial" OR DE "Clinical Trials" OR DE "Cohort Analysis" OR DE "Followup Studies" OR DE "Longitudinal Studies" OR DE "Prospective Studies" OR DE "Meta Analysis" OR TI (randomized OR randomised OR randomization OR randomisation OR randomly OR trial OR groups OR trials OR "evaluation study" OR evaluation studies OR "intervention study" OR "intervention studies" OR "case-control" OR cohort OR longitudinal OR longitudinally OR prospective OR prospectively OR retrospective OR "comparative study" OR "meta-analysis" OR "meta-analyses" ) OR AB (randomized OR randomised OR randomization OR randomisation OR randomly OR trial OR groups OR trials OR "evaluation study" OR evaluation studies OR "intervention study" OR "intervention studies" OR "case-control" OR cohort OR longitudinal OR longitudinally OR prospective OR prospectively OR retrospective OR "comparative study" OR "meta-analysis" OR "meta-analyses" ) AND (ZZ "journal article")
9	#7 AND #8
10	#9, since 2009

### Key Question 3

Set #	Terms
#1	DE "Attention Deficit Disorder with Hyperactivity" OR TI ( "attention deficit hyperactivity disorder" OR ADHD OR "attention deficit disorder" ) OR AB ( "attention deficit hyperactivity disorder" OR ADHD OR "attention deficit disorder"
#2	AG (childhood OR adolescence ) OR DE "Pediatrics" OR TI ( child OR children OR infant OR infants OR preschool OR preschooler OR pediatric OR teenager OR teenagers OR teenaged OR teen OR teens OR adolescent OR adolescents OR adolescence OR youth ) OR AB ( child OR children OR infant OR infants OR preschool OR preschooler OR pediatric OR teenager OR teenagers OR teenaged OR teen OR teens OR adolescent OR adolescents OR adolescence OR youth )
#3	(((((DE "Continuum of Care") OR (DE "Outpatient Treatment")) OR (DE "Primary Health Care")) OR (DE "Monitoring")) OR (DE "Community Psychiatry")) OR TI ( "primary care" OR monitor OR monitored OR monitoring OR "follow up" OR "followed up" OR visit OR visits OR session OR sessions OR appointment OR appointments ) OR AB ( "primary care" OR monitor OR monitored OR monitoring OR "follow up" OR "followed up" OR visit OR visits OR session OR sessions OR appointment OR appointments )
#4	ZC "longitudinal study" OR ZC "empirical study" OR ZC "followup study" OR ZC "longitudinal study" OR ZC "meta analysis" OR ZC "prospective study" OR ZC "retrospective study" OR ZC "systematic review" OR ZC "treatment outcome/clinical trial" OR DE "Clinical Trials" OR DE "Cohort Analysis" OR DE "Followup Studies" OR DE "Longitudinal Studies" OR DE "Prospective Studies" OR DE "Meta Analysis" OR TI (randomized OR randomised OR randomization OR randomisation OR randomly OR trial OR groups OR trials OR "evaluation study" OR evaluation studies OR "intervention study" OR "intervention studies" OR "case-control" OR cohort OR longitudinal OR longitudinally OR prospective OR prospectively OR retrospective OR "comparative study" OR "meta-analysis" OR "meta-analyses" ) OR AB (randomized OR randomised OR randomization OR randomisation OR randomly OR trial OR groups OR trials OR "evaluation study" OR evaluation studies OR "intervention study" OR "intervention studies" OR "case-control" OR cohort OR longitudinal OR longitudinally OR prospective OR prospectively OR retrospective OR "comparative study" OR "meta-analysis" OR "meta-analyses" ) AND (ZZ "journal article")
#5	#1 AND #2 AND #3 AND #4
#6	#5, since 2009 and English

# Cochrane Search Strategy (November 7, 2016)

Platform: Wiley

Database searched: Cochrane Database of Systematic Reviews

## Key Question 1

Set #	Terms
#1	[mh "Attention Deficit Disorder with Hyperactivity"]
#2	"attention deficit hyperactivity disorder":ab,ti OR "ADHD":ab,ti OR "attention deficit disorder":ab,ti
#3	#1 OR #2
#4	[mh Pediatrics] OR [mh Adolescent] OR [mh Infant] OR [mh Child]
#5	child:ab,ti OR children:ab,ti OR infant:ab,ti OR infants:ab,ti OR preschool:ab,ti OR preschooler:ab,ti OR pediatric:ab,ti OR teenager:ab,ti OR teenagers:ab,ti OR teenaged:ab,ti OR teen:ab,ti OR teens:ab,ti OR adolescent:ab,ti OR adolescents:ab,ti OR adolescence:ab,ti OR youth:ab,ti
#6	#4 OR #5
#7	[mh "Attention Deficit Disorder with Hyperactivity"/DI] OR [mh "mass screening"] OR [mh questionnaires] OR [mh "Interviews as Topic"] OR [mh Psychometrics] OR [mh "Psychiatric Status Rating Scales"] OR [mh ^diagnosis] OR [mh "Diagnostic Techniques and Procedures"] OR [mh "Diagnostic and Statistical Manual of Mental Disorders"] OR [mh "Referral and Consultation"]
#8	questionnaire:ab,ti OR questionnaires:ab,ti OR screening:ab,ti OR screen:ab,ti OR scale:ab,ti OR instrument:ab,ti OR instruments:ab,ti OR interview:ab,ti OR interviews:ab,ti OR DSM*:ab,ti OR diagnosis:ab,ti OR diagnostic:ab,ti OR diagnosed:ab,ti OR (Vanderbilt:ab,ti AND scale:ab,ti) OR conners:ab,ti OR cprs:ab,ti OR ctrs:ab,ti OR cprs:ab,ti OR crs:ab,ti OR "snap-IV":ab,ti OR "snap-4":ab,ti OR "basc-2":ab,ti OR "behavioral assessment system for children":ab,ti OR dbdrs:ab,ti OR "disruptive behavior disorder rating scale":ab,ti OR adhd-rs:ab,ti OR "adhd rating scale":ab,ti OR ksads:ab,ti OR k-sads:ab,ti OR kiddie-sads:ab,ti OR DISC:ab,ti OR "dominance inducement submission and compliance":ab,ti OR "diagnostic interview schedule for children":ab,ti OR "diagnostic inventory for screening children":ab,ti OR "mini-kid":ab,ti OR "Mini Interational Neuropsychiatric interview":ab,ti OR "iva-2":ab,ti OR "iva-qs":ab,ti OR "iva-ae2":ab,ti OR tova:ab,ti OR "test of variables of attention":ab,ti OR "neuropsychiatric eeg-based assessment aid":ab,ti OR neba:ab,ti
#9	#7 OR #8
#10	#3 AND #6 AND #9
#11	#10, since 2009, in CDSR only

## Key Question 2

Set #	Terms
#1	[mh "Attention Deficit Disorder with Hyperactivity"]
#2	"attention deficit hyperactivity disorder":ab,ti OR "ADHD":ab,ti OR "attention deficit disorder":ab,ti
#3	#1 OR #2
#4	[mh Pediatrics] OR [mh Adolescent] OR [mh Infant] OR [mh Child]
#5	child:ab,ti OR children:ab,ti OR infant:ab,ti OR infants:ab,ti OR preschool:ab,ti OR preschooler:ab,ti OR pediatric:ab,ti OR teenager:ab,ti OR teenagers:ab,ti OR teenaged:ab,ti OR teen:ab,ti OR teens:ab,ti OR adolescent:ab,ti OR adolescents:ab,ti OR adolescence:ab,ti OR youth:ab,ti
#6	#4 OR #5
#7	[mh "Attention Deficit Disorder with Hyperactivity"/DT] OR [mh "Central Nervous System Stimulants"] OR [mh Methylphenidate] OR [mh Dexmethylphenidate] OR [mh Dextroamphetamine] OR [mh Amphetamine] OR [mh Guanfacine] OR [mh Sympatholytics] OR [mh Clonidine] OR [mh "Adrenergic Uptake Inhibitors"] OR [mh "alpha-2 Adrenergic Receptors"] OR [mh "Adrenergic alpha-Agonists"] OR [mh "Adrenergic alpha-2 Receptor Agonists"] OR [mh "Tricyclic Antidepressive Agents"] OR [mh Desipramine] OR [mh "Dopamine Uptake Inhibitors"] OR [mh Sympathomimetics] OR [mh "Serotonin Uptake Inhibitors"] OR [mh "Monoamine Oxidase Inhibitors"] OR [mh "Monoamine Oxidase"] OR [mh Selegiline] OR [mh Bupropion] OR [mh "N-Methyl-D-Aspartate Receptors"] OR [mh Memantine] OR [mh Amantadine]
#8	"Central Nervous System Stimulants":ab,ti OR "psychostimulant":ab,ti OR "Methylphenidate":ab,ti OR "Methylphenidate Hydrochloride":ab,ti OR "Aptensio":ab,ti OR "Concerta":ab,ti OR "Ritalin":ab,ti OR "Ritalin LA":ab,ti OR "Medikinet":ab,ti OR "Equasym":ab,ti OR "Quillivant":ab,ti OR "Metadate":ab,ti OR "Daytrana":ab,ti OR "Dexmethylphenidate":ab,ti OR "Dexmethylphenidate Hydrochloride":ab,ti OR "Focalin":ab,ti OR "Dextroamphetamine":ab,ti OR "Dexedrine":ab,ti OR "Dextrostat":ab,ti OR "ProCentra":ab,ti OR "Zenedi":ab,ti OR "mixed amphetamine salts":ab,ti OR "Adderall":ab,ti OR "lisdexamfetamine":ab,ti OR "lisdexamfetamine dimesylate":ab,ti OR "Vyvance":ab,ti OR "Venvanse":ab,ti OR "Elvanse":ab,ti OR "Tyvense":ab,ti OR "Dyanavel":ab,ti OR "Evekeo":ab,ti OR "Guanfacine":ab,ti OR "Sympatholytics":ab,ti OR "Central alpha-2 Adrenergic Agonist":ab,ti OR "Clonidine":ab,ti OR "Intuniv":ab,ti OR "Estulic":ab,ti OR "Tenex":ab,ti OR "Catapres":ab,ti OR "Clonidine":ab,ti OR "Kapvay":ab,ti OR "Nexiclon":ab,ti OR "Duraclon":ab,ti OR "Norepinephrine Reuptake Inhibitors":ab,ti OR "Selective Norepinephrine Reuptake Inhibitors":ab,ti OR "Adrenergic Uptake Inhibitors":ab,ti OR "atomoxetine":ab,ti OR "Strattera":ab,ti OR "Tricyclic antidepressants":ab,ti OR "Desipramine":ab,ti OR "Norpramin":ab,ti OR "Nortriptyline":ab,ti OR "Pamelor":ab,ti OR "Dopamine Reuptake Inhibitors":ab,ti OR "modafinil":ab,ti OR "Provigil":ab,ti OR "Armodafinil":ab,ti OR "Norepinephrine-dopamine Reuptake Inhibitors":ab,ti OR "Bupropion":ab,ti OR "Wellbutrin":ab,ti OR "Forfivo":ab,ti OR "Cymbalta":ab,ti OR "venlafaxine":ab,ti OR "reboxetine":ab,ti OR "Monoamine Oxidase Type B inhibitors":ab,ti OR "Selegiline":ab,ti OR "Eldepryl":ab,ti OR "Zelapar":ab,ti OR "NMDA receptors":ab,ti OR "N-Methyl-D-aspartate receptor Antagonists":ab,ti OR "Amantadine":ab,ti OR "Memantine":ab,ti OR "Pertofrane":ab,ti OR "Nuvigil":ab,ti OR "Cymbalta":ab,ti OR "duloxetine":ab,ti OR "Effexor":ab,ti OR "Eldepryl":ab,ti OR "Emsam":ab,ti OR "Trevilor":ab,ti OR "Symmetrel":ab,ti OR "Namenda":ab,ti OR "Zelapar":ab,ti
#9	#7 OR #8
#10	[mh "Attention Deficit Disorder with Hyperactivity"/DH] OR [mh "Attention Deficit Disorder with Hyperactivity"/RH] OR [mh Psychotherapy] OR [mh "Behavior Therapy"] OR [mh "Parent-Child Relations"] OR [mh "Play Therapy"] OR [mh "Cognitive Therapy"] OR [mh "Time Management"] OR [mh "Computer-Assisted Instruction"] OR [mh "Diet Therapy"] OR [mh "Omega-3 Fatty Acids"/TU] OR [mh Vitamins/AD] OR [mh Vitamins/TU] OR [mh "Food Additives"/AE] OR [mh Probiotics/TU] OR [mh "Acupuncture Therapy"] OR [mh "Remedial Teaching"] OR [mh "Early Intervention (Education)"] OR [mh "Complementary Therapies"] OR [mh "Combined Modality Therapy"]

Set #	Terms
#11	"psychosocial therapy":ab,ti OR "psychosocial intervention":ab,ti OR "psychosocial interventions":ab,ti OR "psychosocial approach":ab,ti OR "psychosocial approaches":ab,ti OR "psychosocial treatment":ab,ti OR "psychosocial support":ab,ti OR "psychoeducation":ab,ti OR "nonpharmacologic therapy":ab,ti OR "nondrug therapy":ab,ti OR "non-drug therapy":ab,ti OR "Play Therapy":ab,ti OR "cognitive behavioral therapy":ab,ti OR "cognitive behavior therapy":ab,ti OR "cognitive behavioural therapy":ab,ti OR "cognitive behaviour therapy":ab,ti OR Mindfulness:ab,ti OR complementary:ab,ti OR "alternative medicine":ab,ti OR "alternative therapy":ab,ti OR "alternative therapies":ab,ti OR "Interpersonal skills training":ab,ti OR "Parent-Child Interaction Therapy":ab,ti OR "parent training":ab,ti OR "parent engagement":ab,ti OR "parent management":ab,ti OR "parenting skills":ab,ti OR "parenting intervention":ab,ti OR "parenting interventions":ab,ti OR "Barkley's defiant child":ab,ti OR "Teacher-Child Interaction Training":ab,ti OR "Incredible Years":ab,ti OR "New Forest Parenting":ab,ti OR "Triple P":ab,ti OR "Helping the Noncompliant Child":ab,ti OR "child life and attention skills":ab,ti OR "clas":ab,ti OR PCIT:ab,ti OR "parent child interaction therapy":ab,ti OR "Summer Treatment Program":ab,ti OR "Daily Report Card":ab,ti OR "organization skills":ab,ti OR "organizational skills":ab,ti OR "time management":ab,ti OR "homework intervention":ab,ti OR braintrain:ab,ti OR "memory training":ab,ti OR "Captain's log mindpower builder":ab,ti OR "memory gyms":ab,ti OR "attention gym":ab,ti OR "smartdriver plus":ab,ti OR "smartmind pro":ab,ti OR "RoboMemo":ab,ti OR "play attention":ab,ti OR metronome:ab,ti OR brainmaster:ab,ti OR mindmed:ab,ti OR "attention lab":ab,ti OR (activate:ab,ti AND c8:ab,ti) OR "attention training":ab,ti OR "CogniPlus":ab,ti OR cogmed:ab,ti OR "working memory training":ab,ti OR biofeedback:ab,ti OR neurofeedback:ab,ti OR neuroagility:ab,ti OR neurooptimal:ab,ti OR acupuncture:ab,ti OR "vision training":ab,ti OR "visual training":ab,ti OR "vision therapy":ab,ti OR "education intervention":ab,ti OR "cognitive remediation":ab,ti OR neurotherapy:ab,ti OR "elimination diet":ab,ti OR "diet therapy":ab,ti OR ("low carb" OR "low carbohydrate" OR "low carbohydrates":ab,ti OR "gluten free") AND diet:ab,ti) OR "feingold diet":ab,ti OR "red dye":ab,ti OR ((vitamin:ab,ti OR vitamins:ab,ti) AND (supplement:ab,ti OR supplements:ab,ti)) OR "herbal supplement":ab,ti OR "herbal supplements":ab,ti OR probiotics:ab,ti OR "omega 3":ab,ti OR "slow cortical potentials":ab,ti OR "few foods diet":ab,ti OR "oligoantigenic diet":ab,ti OR "restriction diet":ab,ti OR "food intolerance":ab,ti OR "food allergy":ab,ti OR "food allergies":ab,ti OR "food sensitivity":ab,ti OR "food sensitivities":ab,ti OR "multimodal treatment":ab,ti OR homeopathy:ab,ti OR homeopathic:ab,ti OR chiropractic:ab,ti OR chiropractor:ab,ti
#12	#10 OR #11
#13	#12 OR #9
#14	#3 AND #6 AND #13
#15	#14, since 2009, limited to CDSR

### Key Question 3

Set #	Terms
#1	[mh "Attention Deficit Disorder with Hyperactivity"]
#2	"attention deficit hyperactivity disorder":ab,ti OR "ADHD":ab,ti OR "attention deficit disorder":ab,ti
#3	#1 OR #2
#4	[mh Pediatrics] OR [mh Adolescent] OR [mh Infant] OR [mh Child]
#5	child:ab,ti OR children:ab,ti OR infant:ab,ti OR infants:ab,ti OR preschool:ab,ti OR preschooler:ab,ti OR pediatric:ab,ti OR teenager:ab,ti OR teenagers:ab,ti OR teenaged:ab,ti OR teen:ab,ti OR teens:ab,ti OR adolescent:ab,ti OR adolescents:ab,ti OR adolescence:ab,ti OR youth:ab,ti
#6	#4 OR #5
#7	[mh "Secondary Care"] OR [mh "Comprehensive Health Care"]
#8	"primary care":ab,ti OR monitor:ab,ti OR monitored:ab,ti OR monitoring:ab,ti OR "follow up":ab,ti OR "followed up":ab,ti OR visit:ab,ti OR visits:ab,ti OR session:ab,ti OR sessions:ab,ti OR appointment:ab,ti OR appointments:ab,ti
#9	#7 OR #8
#10	#3 AND #6 AND #9
#11	#10, since 2009, limit to CDSR

## Gray Literature Searches

### ClinicalTrials.gov (November 28, 2016)

Category	Description
Conditions	ADHD OR attention deficit
Recruitment	Completed studies
Study Results	All studies
Study type	Interventional studies
Age group	Child
Phase	Phase 2, Phase 3, Phase 4

Total number of results for screening: 377

### WHO: International Clinical Trials Registry Platform Search Portal (November 28, 2016)

Category	Description
Conditions	ADHD OR attention deficit
Recruiting status	All

Total number of results exported: 945 records/828 trials

Results were imported into an excel file and refined as follows:

1. Removed records with a registration date of December 31, 2004 or earlier; records with an enrollment start date of December 31, 2004 or earlier; records of recruiting studies; records with a population age above 17 years; studies that were explicitly designated as Phase 0 or 1—497 records.
2. Removal of records originating from ClinicalTrials.gov (the ClinicalTrials.gov database was searched separately)—302 records removed, 195 remaining.

Total number of results for screening: 195

### National Guidelines Clearinghouse (November 28, 2016)

Platform: [www.guideline.gov](http://www.guideline.gov)

Category	Description
Keywords	ADHD OR "attention deficit disorder" OR "attention deficit hyperactivity disorder"
Age of Target Population	Adolescent (13 to 18 years), Child (2 to 12 years), Infant (1 to 23 months), Infant, Newborn (to 1 month)
Publication Year	2009, 2010, 2011, 2012, 2013, 2014, 2015

Total number of results: 37

# Appendix B. Data Abstraction Elements

## Study Characteristics

- Study Identifiers
  - Study Name or Acronym
  - NCT number or other trial registry identifier
  - Last name of first author
- Additional Articles Used in This Abstraction
- Study Sites
  - Single center, Multicenter, Unclear/Not reported
  - Number of sites
- Geographic Location (Select all that apply)
  - US, Canada, UK/Europe, Latin America, Middle East (including Israel), Asia, Africa, Australia/NZ, Unclear/Not reported
- Study Design
  - RCT
  - Observational
- Funding Source (Select all that apply)
  - Government, Industry, Non-government/non-industry, Unclear/Not reported
- Setting (Select all that apply)
  - Primary Care; Specialty Care; Community Resource; School; Other; Unclear/Not reported
- Study Enrollment/Study Completion
  - N enrolled/included
  - N completed
- Key Question Applicability (Select all that apply)
  - KQ1, KQ2, KQ3
- Comments

**Baseline Characteristics** – Record the following elements for Total Population, Total ADHD Population, Arm 1, Arm 2, Arm 3, and Arm 4 (as applicable)

- Number of Patients (N and %)
- Gender (N and %)
  - Male
  - Female
- Age in years
  - Mean
  - Median
  - Standard Deviation
  - Min. age
  - Max. age
  - 25% IQR
  - 75% IQR
  - Categorical
  - Other, specify

- Race/Ethnicity (N and %)
  - Hispanic or Latino
  - Black/African American
  - American Indian or Alaska Native
  - Asian
  - Native Hawaiian or Pacific Islander
  - White
  - Multiracial
  - Other (specify)
- ADHD Subtype (N and %)
  - Inattentive
  - Hyperactive
  - Combined
- Were there significant differences noted between groups in any baseline characteristic? (Yes/No)
  - If yes, please explain the differences
- Comments

### **Intervention Characteristics**

- What intervention comparison is being tested in this study? Mark all that apply.
  - Pharmacological vs. pharmacological,
  - Pharmacological vs. non-pharmacological
  - Pharmacological vs. placebo/usual care
    - Placebo, Pharmacological Usual Care, Non-pharmacological Usual Care
  - Non-pharmacological vs. non-pharmacological
  - Non-pharmacological vs. placebo/usual care
    - Placebo, Pharmacological Usual Care, Non-pharmacological Usual Care
- Intervention Descriptors
  - Describe the intervention received by each patient group (For each Arm).
- Indicate components of the intervention (For each Arm)
  - Pharmacological
  - Nonpharmacological
  - Placebo or usual/standard care
- Indicate all intervention characteristics that are varied in this study
  - Pharmacological Details
    - Psychostimulants
      - Methylphenidate, Dexmethylphenidate, Dextroamphetamine, Lisdexamphetamine, Mixed amphetamine salts, Amphetamine
    - Tricyclic antidepressants
      - Desipramine, Nortriptyline
    - Selective norepinephrine reuptake inhibitors
      - Atomoxetine
    - Alpha-2 agonists
      - Clonidine, Guanfacine extended release
    - Dopamine reuptake inhibitors
      - Modafinil

- Armodafinil
  - Norepinephrine-dopamine reuptake inhibitors
    - Bupropion
  - Serotonin-norepinephrine reuptake inhibitors
    - Duloxetine
  - Serotonin-norepinephrine-dopamine reuptake inhibitors
    - Venlafaxine
  - Monoamine oxidase type B inhibitors
    - Selegiline
  - N-methyl-D-aspartate receptor antagonists
    - Amantadine, Memantine
- Nonpharmacological Details
  - Psychosocial interventions
  - Behavioral interventions
  - Cognitive behavioral therapy
  - Play therapy
  - Mindfulness-based therapies
  - School interventions
  - Cognitive training therapies
  - Biofeedback or neurofeedback
  - Parent behavior training
  - Dietary supplements
  - Homeopathy
  - Acupuncture
  - Elimination diets
  - Vision training
  - Exercise
  - Chiropractic treatment
- Placebo/Control details
  - Placebo
  - Usual care control/optimal medical therapy
  - Other (specify)
- Indicate the intervention target
  - ADHD patients
  - Parents
  - Teachers
  - Other (Specify)
- Indicate the Intervention Setting
  - Primary Care
  - Specialty Care
  - Home
  - School
  - Other (specify)
- Duration of Follow-up reported for Total overall study f/u, Arm 1 f/u, Arm 2 f/u, Arm 3 f/u, Arm 4 f/u (Reported or Not reported)
  - Mean follow-up in months or years (include units)



- Mean Variability
    - SD, SE, IQR, NR
  - Median Follow-up in months or years (include units)
  - Median variability
    - SD, SE, IQR, NR
- Comments

### **KQ 1 Diagnostic Tools**

- Gold Standard
  - Is confirmation of diagnosis by a specialist including psychologist or psychiatrist or other care provider using a well-validated and reliable process of confirming the diagnosis of ADHD according to the DSM-IV or DSM-V the gold standard?
    - Yes (Describe the gold standard)
    - No (Article may be eligible for exclusion. Please check with the team)
  - Who performed the diagnosis?
    - Specialist, other care, provider, researcher, unclear/NR, other (specify)
- Select the outcome(s) reported on this form:
  - Diagnostic Accuracy, Misdiagnosis/risk of missed condition, labeling/stigma
- Select the Age Group
  - Under 7 with any diagnostic tool, 7-17 with a novel diagnostic tool, labeling/stigma
- Subgroup Analyses
  - Is this outcome form for a subgroup of interest? (Y or N)
    - If Y, indicate the factor being considered
      - Age
      - Sex
      - ADHD presentation
      - Comorbidity (e.g. anxiety, depression)
      - Risk factors
      - Race/ethnicity
      - Socioeconomic status
      - Insurance status
      - Geographic location
      - Clinical setting
      - Any additional description/clarification of subgroup reported on this form
- Diagnostic Accuracy
  - Timing of the outcome data
  - Test results reported for Instrument 1, Instrument 2, Instrument 3 (Select instrument used)
    - True positive (# patients)
    - True negative (# patients)
    - False positive (# patients)
    - False negative (# patients)
    - Sensitivity

- %, Std dev, Upper confidence interval bound, lower confidence interval bound
  - Specificity
    - %, Std dev, Upper confidence interval bound, lower confidence interval bound
  - Positive predictive value
    - %, Std dev, Upper confidence interval bound, lower confidence interval bound
  - Negative predictive value
    - %, Std dev, Upper confidence interval bound, lower confidence interval bound
  - Positive likelihood ratio
  - Negative likelihood ratio
- Reliability
  - Test-retest
  - Kappa statistics
  - Inter-rater
  - Intra-rater
  - Intraclass correlation
  - Diagnostic concordance of primary care provider with specialist
  - Internal consistency
- Misdiagnosis/Risk of Missed Condition Measure
  - Timing of the outcome reported
  - Describe outcome
- Labeling/Stigma
  - Timing of the outcome data reported
  - Describe outcome
- Comments

### **KQ 2 Outcomes**

- Specific RefID
- Where was this data in the article found? (pg #, table #, etc)
- Select the outcome reported on this form:
  - Academic performance
  - Acceptability of treatment
  - Aggression
  - Behavior changes
  - Cardiac arrhythmias
  - Changes in appetite
  - Changes in standardized symptom scores or progress toward patient-identified goals
  - Chemical leukoderma
  - Conduction abnormalities
  - Depression or anxiety
  - Diversion of pharmacotherapy
  - Divorce/relationship status

- Elevated blood pressure
- Functional impairment
- Gastrointestinal symptoms
- Growth suppression
- Hallucination
- Incarceration or other interactions with the legal system
- Increased heart rate
- Loss of spontaneity
- Mood disorders
- Mortality
- Motor vehicle collisions or other accidents
- Motor vehicle violations
- Obesity
- Overtreatment
- Parental stress
- Personality change
- Priapism
- Quality of peer relationships
- Risk of sudden cardiac death
- Risk-taking behaviors
- Self-injurious non-suicidal behavior
- Sleep disturbance
- Substance abuse
- Suicide (attempted or completed)
- Suicide ideation
- Tics or other movement disorders
- Time demands/opportunity cost
- Tobacco use
- Weight decrease
- Workforce participation
- Any additional description / clarification of the outcome reported on this form
- Is this outcome form for a subgroup of interest? (Yes/No)
  - What subpopulation is this outcome reported for on this form?
    - Age
    - Sex
    - ADHD presentation
    - Comorbidity
    - Risk factors
    - Race/ethnicity
    - Socioeconomic status
    - Insurance status
    - Geographic location
    - Clinical setting
  - Any additional description / clarification of subgroup reported on this form
- Total N Analyzed for this outcome
- Timepoint reported on this form

- Short-term
- Long-term
- Specify actual timing of the outcome (in months)
- For each arm:
  - N Analyzed (enter UNK if unknown)
  - Unadjusted Result
    - Number of patients with outcome
    - % of patients with outcome
    - Events/denominator
    - Odds ratio
    - Hazard ratio
    - Relative risk
    - Mean
    - Median
    - Mean within group change
    - Mean between group change
    - Other (specify)
  - Unadjusted Result Variability
    - 95% CI
    - IQR
    - Standard Error (SE)
    - Standard Deviation (SD)
    - Other % CI (specify)
    - Other (specify)
  - Unadjusted Result, p-value between groups
  - Unadjusted Result, indicate reference group (for comparison between groups)
  - Adjusted Result
    - Number of patients with outcome
    - % of patients with outcome
    - Events/denominator
    - Odds ratio
    - Hazard ratio
    - Relative risk
    - Mean
    - Median
    - Mean within group change
    - Mean between group change
    - Other (specify)
  - Adjusted Result Variability
    - 95% CI
    - IQR
    - Standard Error (SE)
    - Standard Deviation (SD)
    - Other % CI (specify)
    - Other (specify)
  - Adjusted Result, p-value between groups

- Adjusted Result, indicate reference group (for comparison between groups)
- If adjusted data is recorded, indicate the adjustments applied
- Comments

## Quality

- Study Type (select one): RCT, Observational
- If RCT, select Yes/No/Unclear for each of the following questions:
  - Sequence Generation
    - Was the allocation sequence generated adequately (e.g., random number table, computer-generated randomization)?
  - Allocation concealment
    - Was the allocation of treatment adequately concealed (e.g., pharmacy-controlled randomization or use of sequentially numbered sealed envelopes)?
  - Blinding of participants, personnel and outcome assessors
    - Was knowledge of the allocated intervention adequately prevented during the study?
  - Incomplete outcome data
    - Were incomplete outcome data adequately addressed?
  - Selective outcome reporting
    - Are reports of the study free of suggestion of selective outcome reporting?
  - Other sources of bias
    - Was the study apparently free of other problems that could put it at a high risk of bias?
  - Comments
- If Observational, Study design (select one)
  - Case-control, Cohort
- If Case-Control:
  - Selection
    - Is the case definition adequate?
      - Yes, with independent validation
      - Yes, eg record linkage or based on self reports?
      - No description
      - comments
    - Representativeness of the cases
      - Consecutive or obviously representative series of cases
      - Potential for selection biases or not stated
      - comments
    - Selection of controls
      - Community controls
      - Hospital controls
      - No description
      - Comments
    - Definition of controls
      - No history of disease (endpoint)

- No description of source
    - Comments
  - Comparability
    - Comparability of cases and controls on the basis of the design or analysis
      - Study controls for severity of ADHD
      - Study controls for any additional factor
      - Comments
  - Exposure
    - Ascertainment of exposure
      - Secure record
      - Structured interview where blind to case/control status
      - Interview not blinded to case/control status
      - Written self report or medical record only
      - No description
      - comments
    - Same method of ascertainment for cases and controls (Y, N, comments)
    - Non-response rate
      - Same rate for both groups
      - Non respondent described
      - Rate different and no designation
      - Comments
- If Cohort:
  - Selection
    - Representativeness of the exposed cohort Yes, with independent validation
      - Truly representative of the average ADHD patient in the community
      - Somewhat representative of the average ADHD patient in the community
      - Selected group of users (eg nurses, volunteers)
      - No description of the derivation of the cohort
      - Comments
    - Selection of the non-exposed cohort
      - Drawn from the same community as the exposed cohort
      - Drawn from a different source
      - No description of the derivation of the non-exposed cohort
      - Comments
    - Ascertainment of exposure
      - Secure record (e.g., surgical records)
      - Structured interview
      - Written self-report
      - No description
      - Comments
    - Demonstration that outcome of interest was not present at start of study (Y, N, Comments)

- Comparability
  - Comparability of cohorts on the basis of the design or analysis
    - Study controls for severity of ADHD
    - Study controls for any additional factor
    - Comments
- Outcome
  - Assessment of Outcome
    - Independent blind assessment
    - Record linkage
    - Self report
    - No description
    - comments
  - Was follow-up long enough for outcome to occur (Y, N, comments)
  - Adequacy of follow up of cohorts
    - Complete follow up - all subjects accounted for
    - Subjects lost to follow up unlikely to introduce bias - small number lost - >80% follow up, or description provided of those lost
    - Follow up rate
    - No statement
    - Comments
- Overall Study Rating (Good/Fair/Poor)
  - **Good** (low risk of bias). These studies have the least bias, and the results are considered valid. These studies adhere to the commonly held concepts of high quality, including the following: a clear description of the population, setting, approaches, and comparison groups; appropriate measurement of outcomes; appropriate statistical and analytical methods and reporting; no reporting errors; a low dropout rate; and clear reporting of dropouts.
  - **Fair**. These studies are susceptible to some bias, but not enough to invalidate the results. They do not meet all the criteria required for a rating of good quality because they have some deficiencies, but no flaw is likely to cause major bias. The study may be missing information, making it difficult to assess limitations and potential problems.
  - **Poor** (high risk of bias). These studies have significant flaws that may have invalidated the results. They have serious errors in design, analysis, or reporting; large amounts of missing information; or discrepancies in reporting.
  - If the study is rated as “Fair” or “Poor,” provide rationale.
- Outcome-specific quality rating
  - Do you think that any of the outcomes abstracted for this study should be assigned a quality rating DIFFERENT from the overall study rating? (No/Yes)
    - If you think any of the abstracted outcomes should have a quality rating different from the overall study, please provide the outcome(s), rating(s) and rationale(s).

**Applicability** – Use the PICOS format to identify specific issues, if any, that may limit the applicability of the study.

- Population (P)
  - Narrow eligibility criteria and exclusion of those with comorbidities
  - More complex patients than typical of the community
  - Run-in period with high exclusion rate for non-adherence or side effects
  - DSM-4/5 diagnosis unclear
- Intervention (I)
  - as recommended or commonly used in practice
  - Dosing not reflective of current practice
  - Co-intervention that are likely to modify the effectiveness of therapy
  - Highly selected intervention team or level of training/proficiency not widely available
  - Follow-up not reflective of current practice
  - Co-intervention that are likely to modify monitoring strategies
- Comparator (C)
  - Diagnostic tools used differently than as recommended or commonly used in practice
  - Comparator unclear
  - Inadequate comparison therapy or use of a substandard alternative therapy
- Outcomes (O)
  - Composite outcomes that mix outcomes of different significance
  - Short-term follow-up
  - Surrogate outcomes
- Setting (S)
  - Level of care different from that in the community
- Do you have other concerns regarding applicability of this study? (Y, N, describe concerns)
- Comment



## Appendix C. List of Included Studies

- Abikoff H, Gallagher R, Wells KC, et al. Remediating organizational functioning in children with ADHD: immediate and long-term effects from a randomized controlled trial. *J Consult Clin Psychol* 2013;81(1):113-28. PMID: 22889336.
- Abikoff HB, Thompson M, Laver-Bradbury C, et al. Parent training for preschool ADHD: a randomized controlled trial of specialized and generic programs. *J Child Psychol Psychiatry* 2015;56(6):618-31. PMID: 25318650.
- Anand P and Sachdeva A. Effect of Poly Unsaturated Fatty Acids Administration on Children with Attention Deficit Hyperactivity Disorder: A Randomized Controlled Trial. *J Clin Diagn Res* 2016;10(9):Oc01-oc05. PMID: 27790483.
- Arcieri R, Germinario EA, Bonati M, et al. Cardiovascular measures in children and adolescents with attention-deficit/hyperactivity disorder who are new users of methylphenidate and atomoxetine. *J Child Adolesc Psychopharmacol* 2012;22(6):423-431. PMID: 23362511.
- Arnold LE, Disilvestro RA, Bozzolo D, et al. Zinc for attention-deficit/hyperactivity disorder: placebo-controlled double-blind pilot trial alone and combined with amphetamine. *J Child Adolesc Psychopharmacol* 2011;21(1):1-19. PMID: 21309695.
- Bai GN, Wang YF, Yang L, et al. Effectiveness of a focused, brief psychoeducation program for parents of ADHD children: Improvement of medication adherence and symptoms. *Neuropsychiatric Disease and Treatment* 2015;11:2721-2735.
- Banaschewski T, Johnson M, Lecendreux M, et al. Health-related quality of life and functional outcomes from a randomized-withdrawal study of long-term lisdexamfetamine dimesylate treatment in children and adolescents with attention-deficit/hyperactivity disorder. *CNS Drugs* 2014;28(12):1191-203. PMID: 25139785.
- Barragan E, Breuer D and Dopfner M. Efficacy and Safety of Omega-3/6 Fatty Acids, Methylphenidate, and a Combined Treatment in Children With ADHD. *J Atten Disord* 2014. PMID: 24464327.
- Beck SJ, Hanson CA, Puffenberger SS, et al. A controlled trial of working memory training for children and adolescents with ADHD. *J Clin Child Adolesc Psychol* 2010;39(6):825-36. PMID: 21058129.
- Berger I and Goldzweig G. Objective measures of attention-deficit/hyperactivity disorder: a pilot study. *Isr Med Assoc J* 2010;12(9):531-5. PMID: 21287795.
- Bink M, van Nieuwenhuizen C, Popma A, et al. Behavioral effects of neurofeedback in adolescents with ADHD: a randomized controlled trial. *Eur Child Adolesc Psychiatry* 2015;24(9):1035-48. PMID: 25477074.
- Bloch Y, Fixman M, Maoz H, et al. Can computerized cognitive tests assist in the clinical diagnosis of attention-deficit hyperactivity disorder?. *J Neuropsychiatry Clin Neurosci* 2012;24(1):111-4. PMID: 22450621.
- Boyer BE, Geurts HM, Prins PJ, et al. Two novel CBTs for adolescents with ADHD: the value of planning skills. *Eur Child Adolesc Psychiatry* 2015;24(9):1075-90. PMID: 25549767.
- Bunte TL, Schoemaker K, Hessen DJ, et al. Clinical usefulness of the Kiddie-Disruptive Behavior Disorder Schedule in the diagnosis of DBD and ADHD in preschool children. *J Abnorm Child Psychol* 2013;41(5):681-90. PMID: 23474833.
- Carballo JJ, Rodriguez-Blanco L, Garcia-Nieto R, et al. Screening for the ADHD Phenotype Using the Strengths and Difficulties Questionnaire in a Clinical Sample of Newly Referred Children and Adolescents. *J Atten Disord* 2014. PMID: 25515677.
- Castro-Cabrera P, Gomez-Garcia J, Restrepo F, et al. Evaluation of feature extraction techniques on event-related potentials for detection of attention-deficit/hyperactivity disorder. *Conf Proc IEEE Eng Med Biol Soc* 2010;2010:851-4. PMID: 21096317.
- Caudal F. New marker using bioimpedance technology in screening for attention deficit/hyperactivity disorder (ADHD) in children as an adjunct to conventional diagnostic methods. *Psychol Res Behav Manag* 2011;4:113-7. PMID: 22114541.
- Çetin FH, Taş Torun Y and Işık Taner Y. Atomoxetine versus OROS methylphenidate in attention deficit hyperactivity disorder: A six-month follow up study for efficacy and adverse effects. *Turkiye Klinikleri Journal of Medical Sciences* 2015;35(2):88-96.
- Chacko A, Bedard AC, Marks DJ, et al. A randomized clinical trial of Cogmed Working Memory Training in school-age children with ADHD: a replication in a diverse sample using a control condition. *J Child Psychol Psychiatry* 2014;55(3):247-55. PMID: 24117656.
- Chacko A, Wymbs BT, Wymbs FA, et al. Enhancing traditional behavioral parent training for single mothers of children with ADHD. *J Clin Child Adolesc Psychol* 2009;38(2):206-18. PMID: 19283599.
- Clemow DB, Mason OW, Sarkis EH, et al. Atomoxetine monotherapy compared with combination therapy for the treatment of ADHD: a retrospective chart review study. *Expert Rev Neurother* 2015;:1-14. PMID: 26488905.
- Cortese S, Panei P, Arcieri R, et al. Safety of Methylphenidate and Atomoxetine in Children with Attention-Deficit/Hyperactivity Disorder (ADHD): Data from the Italian National ADHD Registry. *CNS Drugs* 2015;29(10):865-77. PMID: 26293742.

- Didoni A, Sequi M, Panei P, et al. One-year prospective follow-up of pharmacological treatment in children with attention-deficit/hyperactivity disorder. *Eur J Clin Pharmacol* 2011;67(10):1061-7. PMID: 21538145.
- dosReis S, Barksdale CL, Sherman A, et al. Stigmatizing experiences of parents of children with a new diagnosis of ADHD. *Psychiatric Services* 2010;61(8):811-816. PMID: 2010-16657-009.
- Dovis S, Van der Oord S, Wiers RW, et al. Improving executive functioning in children with ADHD: training multiple executive functions within the context of a computer game. a randomized double-blind placebo controlled trial. *PLoS One* 2015;10(4):e0121651. PMID: 25844638.
- Duric NS, Assmus J, Gundersen D, et al. Neurofeedback for the treatment of children and adolescents with ADHD: a randomized and controlled clinical trial using parental reports. *BMC Psychiatry* 2012;12:107. PMID: 22877086.
- Dutta B, Barua TK, Ray J, et al. A study of evaluation of safety and efficacy of memomet, a multi herbal formulation (memomet) in the treatment of behavioural disorder in children. *International Journal of Research in Pharmaceutical Sciences* 2012;3(2):282-286.
- Egeland J, Aarli AK and Saunes BK. Few effects of far transfer of working memory training in ADHD: a randomized controlled trial. *PLoS One* 2013;8(10):e75660. PMID: 24124503.
- Ercan ES, Ardic UA, Kutlu A, et al. No beneficial effects of adding parent training to methylphenidate treatment for ADHD + ODD/CD children: a 1-year prospective follow-up study. *J Atten Disord* 2014;18(2):145-57. PMID: 22522574.
- Evans SW, Langberg JM, Schultz BK, et al. Evaluation of a School-Based Treatment Program for Young Adolescents With ADHD. *Journal of Consulting and Clinical Psychology* 2015.
- Ferrin M and Vance A. Examination of neurological subtle signs in ADHD as a clinical tool for the diagnosis and their relationship to spatial working memory. *J Child Psychol Psychiatry* 2012;53(4):390-400. PMID: 22141455.
- Ferrin M, Moreno-Granados JM, Salcedo-Marin MD, et al. Evaluation of a psychoeducation programme for parents of children and adolescents with ADHD: immediate and long-term effects using a blind randomized controlled trial. *Eur Child Adolesc Psychiatry* 2014;23(8):637-47. PMID: 24292412.
- Ferrin M, Perez-Ayala V, El-Abd S, et al. A Randomized Controlled Trial Evaluating the Efficacy of a Psychoeducation Program for Families of Children and Adolescents With ADHD in the United Kingdom: Results After a 6-Month Follow-Up. *J Atten Disord* 2016. PMID: 26838557.
- Findling RL, Adeyi B, Chen G, et al. Clinical response and symptomatic remission in children treated with lisdexamfetamine dimesylate for attention-deficit/hyperactivity disorder. *CNS Spectrums* 2010;15(9):559-568.
- Gelade K, Janssen TW, Bink M, et al. Behavioral Effects of Neurofeedback Compared to Stimulants and Physical Activity in Attention-Deficit/Hyperactivity Disorder: A Randomized Controlled Trial. *J Clin Psychiatry* 2016;77(10):e1270-e1277. PMID: 27631143.
- Gevensleben H, Holl B, Albrecht B, et al. Is neurofeedback an efficacious treatment for ADHD? A randomised controlled clinical trial. *J Child Psychol Psychiatry* 2009;50(7):780-9. PMID: 19207632.
- Gonzalez JJ, Mendez LD, Manas S, et al. Performance analysis of univariate and multivariate EEG measurements in the diagnosis of ADHD. *Clin Neurophysiol* 2013;124(6):1139-50. PMID: 23332776.
- Gustafsson PA, Birberg-Thornberg U, Duchon K, et al. EPA supplementation improves teacher-rated behaviour and oppositional symptoms in children with ADHD. *Acta Paediatr* 2010;99(10):1540-9. PMID: 20491709.
- Hahn-Markowitz J, Berger I, Manor I, et al. Efficacy of Cognitive-Functional (Cog-Fun) Occupational Therapy Intervention Among Children With ADHD: An RCT. *J Atten Disord* 2016. PMID: 27637735.
- Hammerness P, Petty C, Faraone SV, et al. Do Stimulants Reduce the Risk for Alcohol and Substance Use in Youth With ADHD? A Secondary Analysis of a Prospective, 24-Month Open-Label Study of Osmotic-Release Methylphenidate. *J Atten Disord* 2012. PMID: 23264367.
- Hariri M, Djazayery A, Djalali M, et al. Effect of n-3 supplementation on hyperactivity, oxidative stress and inflammatory mediators in children with attention-deficit-hyperactivity disorder. *Malays J Nutr* 2012;18(3):329-35. PMID: 24568073.
- Hiscock H, Sciberras E, Mensah F, et al. Impact of a behavioural sleep intervention on symptoms and sleep in children with attention deficit hyperactivity disorder, and parental mental health: randomised controlled trial. *Bmj* 2015;350:h68. PMID: 25646809.
- Hong SS and Cho SH. Treating attention deficit hyperactivity disorder with acupuncture: A randomized controlled trial. *European Journal of Integrative Medicine* 2015.
- Huang YH, Chung CY, Ou HY, et al. Treatment effects of combining social skill training and parent training in Taiwanese children with attention deficit hyperactivity disorder. *Journal of the Formosan Medical Association* 2015;114(3):260-267.
- Johnson M, Ostlund S, Fransson G, et al. Omega-3/omega-6 fatty acids for attention deficit hyperactivity disorder: a randomized placebo-controlled trial in children and adolescents. *J Atten Disord* 2009;12(5):394-401. PMID: 18448859.

- Katz M, Levine AA, Kol-Degani H, et al. A compound herbal preparation (CHP) in the treatment of children with ADHD: a randomized controlled trial. *J Atten Disord* 2010;14(3):281-91. PMID: 20228219.
- Kim J, Lee Y, Han D, et al. The utility of quantitative electroencephalography and Integrated Visual and Auditory Continuous Performance Test as auxiliary tools for the Attention Deficit Hyperactivity Disorder diagnosis. *Clin Neurophysiol* 2015;126(3):532-40. PMID: 25088931.
- Kim JW, Lee J, Kim BN, et al. Theta-phase gamma-amplitude coupling as a neurophysiological marker of attention deficit/hyperactivity disorder in children. *Neurosci Lett* 2015;603:25-30. PMID: 26170246.
- Klenberg L, Jamsa S, Hayrinen T, et al. The Attention and Executive Function Rating Inventory (ATTEX): Psychometric properties and clinical utility in diagnosing ADHD subtypes. *Scand J Psychol* 2010;51(5):439-448. PMID: 20338019.
- Li JJ, Li ZW, Wang SZ, et al. Ningdong granule: a complementary and alternative therapy in the treatment of attention deficit/hyperactivity disorder. *Psychopharmacology (Berl)* 2011;216(4):501-9. PMID: 21416235.
- Liechti MD, Valko L, Muller UC, et al. Diagnostic value of resting electroencephalogram in attention-deficit/hyperactivity disorder across the lifespan. *Brain Topogr* 2013;26(1):135-51. PMID: 23053601.
- Manor I, Magen A, Keidar D, et al. The effect of phosphatidylserine containing Omega3 fatty-acids on attention-deficit hyperactivity disorder symptoms in children: a double-blind placebo-controlled trial, followed by an open-label extension. *Eur Psychiatry* 2012;27(5):335-42. PMID: 21807480.
- Markovska-Simoska S and Pop-Jordanova N. Quantitative EEG in Children and Adults With Attention Deficit Hyperactivity Disorder: Comparison of Absolute and Relative Power Spectra and Theta/Beta Ratio. *Clin EEG Neurosci* 2016. PMID: 27170672
- Martin-Martinez D, Casaseca-de-la-Higuera P, Alberola-Lopez S, et al. Nonlinear analysis of actigraphic signals for the assessment of the attention-deficit/hyperactivity disorder (ADHD). *Med Eng Phys* 2012;34(9):1317-29. PMID: 22297088.
- Mautone JA, Marshall SA, Sharman J, et al. Development of a Family-School Intervention for Young Children With Attention Deficit Hyperactivity Disorder. *School Psych Rev* 2012;41(4):447-466. PMID: 24353368.
- Milte CM, Parletta N, Buckley JD, et al. Eicosapentaenoic and docosahexaenoic acids, cognition, and behavior in children with attention-deficit/hyperactivity disorder: a randomized controlled trial. *Nutrition* 2012;28(6):670-7. PMID: 22541055.
- Mohammadpour N, Jazayeri S, Tehrani-Doost M, et al. Effect of vitamin D supplementation as adjunctive therapy to methylphenidate on ADHD symptoms: A randomized, double blind, placebo-controlled trial. *Nutr Neurosci* 2016;1-8. PMID: 27924679.
- Mohammadi MR, Mostafavi SA, Keshavarz SA, et al. Melatonin effects in methylphenidate treated children with attention deficit hyperactivity disorder: a randomized double blind clinical trial. *Iran J Psychiatry* 2012;7(2):87-92. PMID: 22952551.
- Molina BS, Hinshaw SP, Swanson JM, et al. The MTA at 8 years: prospective follow-up of children treated for combined-type ADHD in a multisite study. *J Am Acad Child Adolesc Psychiatry* 2009;48(5):484-500. PMID: 19318991.
- Moreno-García I, Delgado-Pardo G, de Reya CC-V, et al. Neurofeedback, pharmacological treatment and behavioral therapy in hyperactivity: Multilevel analysis of treatment effects on electroencephalography. *International Journal of Clinical and Health Psychology* 2015;15(3):217-225. PMID: 2015-48012-005.
- Myers K, Vander Stoep A, Zhou C, et al. Effectiveness of a telehealth service delivery model for treating attention-deficit/hyperactivity disorder: a community-based randomized controlled trial. *J Am Acad Child Adolesc Psychiatry* 2015;54(4):263-74. PMID: 25791143.
- Newcorn JH, Harpin V, Huss M, et al. Extended-release guanfacine hydrochloride in 6-17-year olds with ADHD: a randomised-withdrawal maintenance of efficacy study. *J Child Psychol Psychiatry* 2016;57(6):717-28. PMID: 26871297.
- Oberai P, Gopinadhan S, Varanasi R, et al. Homoeopathic management of attention deficit hyperactivity disorder: A randomised placebo-controlled pilot trial. *Indian Journal of Research in Homeopathy* 2013;7(4):158-67.
- Ogrim G, Kropotov J and Hestad K. The quantitative EEG theta/beta ratio in attention deficit/hyperactivity disorder and normal controls: sensitivity, specificity, and behavioral correlates. *Psychiatry Res* 2012;198(3):482-8. PMID: 22425468.
- Ohan JL, Visser TAW, Strain MC, et al. Teachers' and education students' perceptions of and reactions to children with and without the diagnostic label 'ADHD'. *Journal of School Psychology* 2011;49(1):81-105. PMID: 2011-00464-004.
- Ostberg M and Rydell AM. An efficacy study of a combined parent and teacher management training programme for children with ADHD. *Nord J Psychiatry* 2012;66(2):123-30. PMID: 22150634.
- Pane P, Arcieri R, Bonati M, et al. Safety of psychotropic drug prescribed for attention-deficit/hyperactivity disorder in Italy. *Adverse Drug Reaction Bulletin* 2010;(260):999-1002.
- Park J, Kim C, Ahn JH, et al. Clinical Use of Continuous Performance Tests to Diagnose Children With ADHD. *J Atten Disord* 2016. PMID: 27412120.

- Pelsser LM, Frankena K, Toorman J, et al. Effects of a restricted elimination diet on the behaviour of children with attention-deficit hyperactivity disorder (INCA study): a randomised controlled trial. *Lancet* 2011;377(9764):494-503. PMID: 21296237.
- Pfiffner LJ, Hinshaw SP, Owens E, et al. A two-site randomized clinical trial of integrated psychosocial treatment for ADHD-inattentive type. *J Consult Clin Psychol* 2014;82(6):1115-27. PMID: 24865871.
- Power TJ, Mautone JA, Soffer SL, et al. A family-school intervention for children with ADHD: results of a randomized clinical trial. *J Consult Clin Psychol* 2012;80(4):611-23. PMID: 22506793.
- Raz R, Carasso RL and Yehuda S. The influence of short-chain essential fatty acids on children with attention-deficit/hyperactivity disorder: a double-blind placebo-controlled study. *J Child Adolesc Psychopharmacol* 2009;19(2):167-77. PMID: 19364294.
- Salehi B, Imani R, Mohammadi MR, et al. Ginkgo biloba for attention-deficit/hyperactivity disorder in children and adolescents: a double blind, randomized controlled trial. *Prog Neuropsychopharmacol Biol Psychiatry* 2010;34(1):76-80. PMID: 19815048.
- Sallee FR, Lyne A, Wigal T, et al. Long-term safety and efficacy of guanfacine extended release in children and adolescents with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2009;19(3):215-26. PMID: 19519256.
- Sayer GR, McGough JJ, Levitt J, et al. Acute and Long-Term Cardiovascular Effects of Stimulant, Guanfacine, and Combination Therapy for Attention-Deficit/Hyperactivity Disorder. *J Child Adolesc Psychopharmacol* 2016. PMID: 27483130.
- Shakibaei F, Radmanesh M, Salari E, et al. Ginkgo biloba in the treatment of attention-deficit/hyperactivity disorder in children and adolescents. A randomized, placebo-controlled, trial. *Complement Ther Clin Pract* 2015;21(2):61-7. PMID: 25925875.
- Sibley MH, Graziano PA, Kuriyan AB, et al. Parent-teen behavior therapy + motivational interviewing for adolescents with ADHD. *J Consult Clin Psychol* 2016;84(8):699-712. PMID: 27077693.
- Soliva JC, Fauquet J, Bielsa A, et al. Quantitative MR analysis of caudate abnormalities in pediatric ADHD: proposal for a diagnostic test. *Psychiatry Res* 2010;182(3):238-43. PMID: 20488672.
- Steiner NJ, Frenette EC, Rene KM, et al. Neurofeedback and cognitive attention training for children with attention-deficit hyperactivity disorder in schools. *J Dev Behav Pediatr* 2014;35(1):18-27. PMID: 24399101.
- Storebo OJ, Gluud C, Winkel P, et al. Social-skills and parental training plus standard treatment versus standard treatment for children with ADHD--the randomised SOSTRA trial. *PLoS One* 2012;7(6):e37280. PMID: 22745657.
- Thorell LB, Eninger L, Brocki KC, et al. Childhood executive function inventory (CHEXI): a promising measure for identifying young children with ADHD?. *J Clin Exp Neuropsychol* 2010;32(1):38-43. PMID: 19381995.
- Tobaiqy M, Stewart D, Helms PJ, et al. Parental reporting of adverse drug reactions associated with attention-deficit hyperactivity disorder (ADHD) medications in children attending specialist paediatric clinics in the UK. *Drug Saf* 2011;34(3):211-9. PMID: 21332245.
- Trzepacz PT, Spencer TJ, Zhang S, et al. Effect of atomoxetine on Tanner stage sexual development in children and adolescents with attention deficit/hyperactivity disorder: 18-month results from a double-blind, placebo-controlled trial. *Curr Med Res Opin* 2011;27 Suppl 2:45-52. PMID: 21973230.
- van der Donk M, Hiemstra-Beernink AC, Tjeenk-Kalff A, et al. Cognitive training for children with ADHD: a randomized controlled trial of cogmed working memory training and 'paying attention in class'. *Front Psychol* 2015;6:1081. PMID: 26284005.
- van Dongen-Boomsma M, Vollebregt MA, Buitelaar JK, et al. Working memory training in young children with ADHD: a randomized placebo-controlled trial. *J Child Psychol Psychiatry* 2014;55(8):886-96. PMID: 24628438.
- Vidal R, Castells J, Richarte V, et al. Group therapy for adolescents with attention-deficit/hyperactivity disorder: a randomized controlled trial. *J Am Acad Child Adolesc Psychiatry* 2015;54(4):275-82. PMID: 25791144.
- Webster-Stratton CH, Reid MJ and Beauchaine T. Combining parent and child training for young children with ADHD. *J Clin Child Adolesc Psychol* 2011;40(2):191-203. PMID: 21391017.
- Widenhorn-Muller K, Schwanda S, Scholz E, et al. Effect of supplementation with long-chain omega-3 polyunsaturated fatty acids on behavior and cognition in children with attention deficit/hyperactivity disorder (ADHD): a randomized placebo-controlled intervention trial. *Prostaglandins Leukot Essent Fatty Acids* 2014;91(1-2):49-60. PMID: 24958525.
- Zelnik N, Bennett-Back O, Miari W, et al. Is the test of variables of attention reliable for the diagnosis of attention-deficit hyperactivity disorder (ADHD)?. *J Child Neurol* 2012;27(6):703-7. PMID: 22378668.
- Zhang H, Du M and Zhuang S. Impact of long-term treatment of methylphenidate on height and weight of school age children with ADHD. *Neuropediatrics* 2010;41(2):55-9. PMID: 20799150.

## Appendix D. List of Excluded Studies

All studies listed below were reviewed in their full-text version and excluded for the reasons cited. Reasons for exclusion signify only the usefulness of the articles for this study and are not intended as criticisms of the articles.

### Not a Full Publication or Full Text Not Available

Ang A, Hillhouse M, Jenkins J, et al. Methylphenidate for methamphetamine use disorders in participants with and without ADHD. *Drug and Alcohol Dependence* 2015;156:e7.

Bakhshayesh AR, Esser G and Wyschkon A. Effectiveness of EEG-biofeedback in the treatment of attention deficit/hyperactivity disorder. *Psychological Research* 2010;13(1):7-29.

Bilder RM, Loo S, McGough JJ, et al. Cognitive effects of stimulant, guanfacine, and combined treatment in child and adolescent attention-deficit/hyperactivity disorder. *Biological Psychiatry* 2016;79(9):158S.

Brittain S, Stocks J, Johnson J, et al. Adjunctive extended-release molindone (SPN-810) to manage impulsive aggression in children with attention deficit/hyperactivity disorder (ADHD) receiving optimized stimulant monotherapy and behavioral therapy. *Neurology* 2016;86(16).

Carucci S, Caddeo M, Romaniello R, et al. Effects of methylphenidate on height in ADHD children. The monitoring of bone age within the ADDUCE project. *European Neuropsychopharmacology* 2015;25:S644.

Coghill D, Hernández Otero I, Nagy P, et al. Long-term safety and efficacy of lisdexamfetamine dimesylate by age subgroup in children and adolescents with attention deficit hyperactivity disorder. *Australian and New Zealand Journal of Psychiatry* 2016;50:162.

Coghill D, Nagy P, Frick G, et al. Comparing the time-course of efficacy of lisdexamfetamine dimesylate and osmotic controlled-release methylphenidate in children and adolescents with ADHD. *Australian and New Zealand Journal of Psychiatry* 2016;50:114-115.

Coghill DR, Nagy P, Frick G, et al. Relative efficacy of lisdexamfetamine dimesylate and osmotic controlled-release methylphenidate in attention-deficit/ hyperactivity disorder patients. *European Neuropsychopharmacology* 2015;25:S647-S648.

Cutler A, Harper L, Young J, et al. Guanfacine extended release: Daytime sleepiness outcomes from a phase 3 clinical study in adolescents with attention-deficit/hyperactivity disorder. *European Neuropsychopharmacology* 2015;25:S648-S649.

Emmerson NA. Monitoring patterns of physical activity, problematic behaviors, and moods in children with and without ADHD using electronic diaries. US: ProQuest Information & Learning; 2011.

FDA-approved drugs to treat ADHD. *J Psychosoc Nurs Ment Health Serv* 2012;50(3):11-2. PMID: 22390784.

Furnell C and Finlay F. The use of weighted blankets to modify sleep in attention deficit hyperactivity disorder (ADHD). *Archives of Disease in Childhood* 2016;101:A354.

Gonring KA. Program for the education and enrichment of relational skills: Parental outcomes with an ADHD sample. 2016.

Hall CL, Walker GM and Valentine AZ. Correction. Protocol investigating the clinical utility of an objective measure of activity and attention (QbTest) on diagnostic and treatment decision-making in children and young people with ADHD - 'Assessing QbTest Utility in ADHD' (AQUA): a randomised controlled trial. *BMJ Open* 2015;5(5):e006838corr1. PMID: 25948406.

Hauser ME. Prediction of stimulant response in patients with adhd utilizing acute medication challenge studies. US: ProQuest Information & Learning; 2014.

Heishman A. Effectiveness of computerized working memory training on math achievement and other transfer effects in children with ADHD and math difficulties. 2016.

Helwig JR. Sleep disturbance in children and adolescents with adhd: Unique effects of medication, adhd subtype, and comorbid status. US: ProQuest Information & Learning; 2012.

Henriksen N. Impulsive choice in unmedicated and medicated children diagnosed with adhd: Examining the variables of reward type and adhd subtype. US: ProQuest Information & Learning; 2015.

Herbert SD. Parent training for families of hyperactive preschool-aged children. US: ProQuest Information & Learning; 2014.

Ishii-Takahashi A, Takizawa R, Nishimura Y, et al. Neuroimaging-Aided Prediction of the Effect of Methylphenidate in Children with Attention-Deficit Hyperactivity Disorder: A Randomized Controlled Trial. *Neuropsychopharmacology* 2015;40(12):2852. PMID: 26152808.

La Marca JP. Neurofeedback as an intervention to improve reading achievement in students with attention deficit hyperactivity disorder, inattentive subtype. US: ProQuest Information & Learning; 2015.

Lastra N. Predictors of response in the Multimodal Treatment of Attention Deficit and Hyperactivity Disorder trial. 2016.

Linden S. Risk of suicide and suicide attempt associated with atomoxetine compared to central nervous system stimulant treatment. 2016.

Moodi M, Alizadeh H, Bonab BG, et al. Effectiveness of cognitive behavior therapy on anger management in children with attention deficit/hyperactivity disorder. *Psychological Research* 2015;17(2):112-127.

Moore SA. Impact of two-session model of child parent relationship training on parents of children diagnosed with ADHD. 2016.

Music A. *Direct Behavior Ratings (DBR): A possible tool for monitoring the behavior and interventions of students with symptoms of Attention Deficit Hyperactivity Disorder (ADHD)*. US: ProQuest Information & Learning; 2012.

Nazer M. The effect of exercise therapy on symptoms of hyperactivity/attention deficit disorder in elementary school students in Rafsanjan. *European Psychiatry* 2016;33(Supplement):S439.

Nupdal JB. *Implementing clinical practice guidelines in family practice: Caring for children with ADHD*. US: ProQuest Information & Learning; 2015.

Peksel H, Upadhyaya H, Adams DH, et al. Maintenance of effect in Attention Deficit Hyperactivity Disorder: What do placebo-controlled randomized withdrawal studies of atomoxetine and stimulants tell us?. *Klinik Psikofarmakoloji Bulteni* 2015;25:S82.

Poh XW, Fung DSS, Lee TS, et al. Effectiveness of brain-computer interface-based programme boosters for the treatment of attention deficit hyperactivity in children-a preliminary analysis. *Annals of the Academy of Medicine Singapore* 2015;44(10):S407.

Reading R. ADHD drugs and serious cardiovascular events in children and young adults. *Child: Care, Health and Development* 2012;38(1):149-151.

Roberts AM. Randomized control study of neurofeedback with college students with ADHD. 2016.

Robinson AM. The effects of child-centered play therapy on the behavioral performance of elementary school students with ADHD. 2016.

Rostain AL. Guanfacine extended release in the treatment of attention-deficit/hyperactivity disorder. *Curr Psychiatry Rep* 2009;11(5):339-40. PMID: 19785972.

Russell EL. Auditory and visual sustained attention on tasks with varied motivation and cognitive loads in children with and without ADHD. 2016.

Rutledge KJ. *Review and comparative effectiveness of parent training and cognitive training for treating attention-deficit / hyperactivity disorder*. US: ProQuest Information & Learning; 2014.

Rynczak D. Effectiveness of mindfulness in reducing impulsivity in youth with attention-deficit/hyperactivity disorder. US: ProQuest Information & Learning; 2013.

Saheban F, Amiri S, Kajbaf MB, et al. The efficacy of short-term executive functions training on the reduction of symptoms of attention deficit and hyperactivity of elementary boy students in Esfahan metropolitan area. *Advances in Cognitive Science* 2010;12(1):52-58.

Sanal Y, Yokusoglu C and Yargic I. Compliance with methylphenidate treatment and drug abuse of adults with attention deficit hyperactivity disorder (ADHD). *Klinik Psikofarmakoloji Bulteni* 2015;25:S34-S36.

Shecter C. Mindfulness training for adolescents with ADHD and their families: A time-series evaluation. US: ProQuest Information & Learning; 2015.

Shemmassian SK. Optimizing assessment procedures for attention-deficit/hyperactivity disorder (adhd). US: ProQuest Information & Learning; 2015.

Sibley MH. Supporting Teens' Academic Needs Daily (STAND): A parent-adolescent collaborative intervention for ADHD. US: ProQuest Information & Learning; 2013.

Sidhu P. The efficacy of mindfulness meditation in increasing the attention span in children with ADHD. US: ProQuest Information & Learning; 2015.

Sobanski E, Dopfner M, Ose C, et al. A non-interventional study of extended-release methylphenidate in the routine treatment of adolescents with ADHD: effectiveness, safety and adherence to treatment. *Atten Defic Hyperact Disord* 2013;5(4):387-95. PMID: 23794192.

Sohn M. The off-label use of atypical antipsychotics and its impact on Attention Deficit/Hyperactivity Disorder (ADHD). US: ProQuest Information & Learning; 2015.

Steger CM. Combined cognitive and parent training interventions for adolescents with adhd and their mothers: A randomized, controlled trial. US: ProQuest Information & Learning; 2014.

Storebø OJ, Simonsen E and Gluud C. The evidence base of methylphenidate for children and adolescents with attention-deficit hyperactivity disorder is in fact flawed. *European Child and Adolescent Psychiatry* 2016:1-2.

Sura S, Chatterjee S, Kamble P, et al. Persistence of stimulants in children and adolescents with attention deficit hyperactivity disorder: A longitudinal study. *Pharmacoepidemiology and Drug Safety* 2015;24:501-502.

Tomoda A, Takiguchi S, Fujisawa TX, et al. Effectiveness of oral tiperidine administration for children with attention deficit/hyperactivity disorder: A 4-week, open-label clinical study. *Psychiatry and Clinical Neurosciences* 2015;69(10):658-659.

Treumer TN. Adult ADHD Self-Report Scale: Implementation in a primary care setting. 2016.



van Dongen-Boomsma M, Vollebregt MA, Slaats-Willemse D, et al. 'A randomized placebo-controlled trial of electroencephalographic (EEG) neurofeedback in children with attention-deficit/hyperactivity disorder': Reply. *Journal of Clinical Psychiatry* 2014;75(3):290-290.

Wagner SM. The effects of parent-child interaction therapy on symptoms and impairment in young children with attention-deficit/hyperactivity disorder. US: ProQuest Information & Learning; 2012.

Walker P, Jr.. The effects of Ritalin and cognitive behavioral therapy on the academic functioning of African American children diagnosed with attention deficit hyperactivity disorder: A longitudinal study. US: ProQuest Information & Learning; 2011.

Worth DE. Mindfulness meditation and attention-deficit/hyperactivity disorder symptom reduction in middle school students. US: ProQuest Information & Learning; 2014.

Zuddas A, Banaschewski T, Nagy P, et al. Long-term safety and efficacy of lisdexamfetamine dimesylate in children and adolescents with attention-deficit/hyperactivity disorder. *European Neuropsychopharmacology* 2015;25:S648.

## **Not Available in English**

Babaki ME, Ashtiani RD, Razjooyan K, et al. Comparing the effects of buspirone and methylphenidate in children with attention deficit hyperactivity disorder. *Iranian Journal of Psychiatry and Clinical Psychology* 2009;15(3):223-230.

Blasco-Fontecilla H, Gonzalez-Perez M, Garcia-Lopez R, et al. Efficacy of chess training for the treatment of ADHD: A prospective, open label study. *Rev Psiquiatr Salud Ment* 2015. PMID: 25911280.

Davari-Ashtiani R, Jazayeri F, Arabgol F, et al. Psychometric properties of Persian version of Conners' Adult Attention Deficit/Hyperactivity Disorder Rating Scale (screening form-self reporting). *Iranian Journal of Psychiatry and Clinical Psychology* 2014;20(3):243-251.

De Giacomo A, De Giambattista C, Balducci R, et al. SCQ as a tool for screening ASD comorbidities with ADHD. *Rivista di Psichiatria* 2015;50(1):34-37.

Delgado-Mejía ID, Palencia-Avenidaño ML, Mogollón-Rincón C, et al. Theta/beta ratio (NEBA) in the diagnosis of attention deficit hyperactivity disorder. *Revista de Neurologia* 2014;58(SUPPL. 1):S57-S63.

Díaz-Orueta U, Fernández-Fernández MA, Morillo-Rojas MD, et al. Efficacy of lisdexamphetamine to improve the behavioural and cognitive symptoms of attention deficit hyperactivity disorder: Treatment monitored by means of the aula nesplora virtual reality test. *Revista de Neurologia* 2016;63(1):19-27.

Fazeli Z, Shirazi E, Farid AA, et al. Effectiveness of medication and combined medication and parent management training on visuo-constructive, attentional, behavioral and emotional

indicators of children with attention deficit/hyperactivity disorder. *Iranian Journal of Psychiatry and Clinical Psychology* 2014;19(4):264-274.

Gandía-Benetó R, Mulas F, Roca P, et al. Change in the therapeutic strategy when faced with an inadequate response to the pharmacological treatment of attention deficit hyperactivity disorder. *Revista de Neurologia* 2015;60:S8-S13.

Garcia Ron A, Serrano Grasa R, Blanco Lago R, et al. Pilot study of the efficacy of empowering patients through coaching as a complementary therapy in attention deficit hyperactivity disorder. *Neurologia* 2015. PMID: 26383058.

Ghasabi S, Tajrishi MPMR and Zamani SMM. The effect of verbal self-instruction training on decreasing impulsivity symptoms in ADHD children. *Journal of Iranian Psychologists* 2009;5(19):209-220.

Jalali N, Shahrabaki ME and Sahebozamani M. The effect of exercise program in reducing symptoms of attention deficit/hyperactivity disorder in children. *Iranian Journal of Psychiatry and Clinical Psychology* 2015;20(4):309-316.

Karakurt MN, Karabekiroğlu MK, Akbaş S, et al. Association between symptom profiles and iron and ferritin serum levels in children with attention deficit hyperactivity disorder. *Noropsikiyatri Arsivi* 2011;48(2):125-128.

Khanjani Z, Amini S, Malek A, et al. The effectiveness of parents management training on improvement of attention deficit hyperactivity disorder syndrome in children. *Journal of Iranian Psychologists* 2014;10(39):311-320.

Lazaratou H. Attention-deficit hyperactivity disorder or bipolar disorder in childhood?. *Psychiatriki* 2012;23(4):304-313.

Maleki ZH, Mashhadi A, Soltanifar A, et al. Effectiveness of working memory training, Barkley's parent training program, and combination of these two interventions on improvement of working memory in children with ADHD. *Advances in Cognitive Science* 2014;15(4[60]):53-63.

Meftagh SD, Mohammadi N, Ghanizadeh A, et al. Comparison of the effectiveness of different treatment methods in children's attention deficit-hyperactivity disorders. *Journal of Isfahan Medical School* 2011;29(148):965-976.

Morichi S, Miyajima T, Yamanaka G, et al. Effect of ATX and OROS-MPH alone or in combination on QT prolongation in ADHD patients. *Journal of Tokyo Medical University* 2015;73(3):284-293.

Mulas F, Roca P, Ros-Cervera G, et al. Pharmacological management of attention deficit hyperactivity disorder with methylphenidate and atomoxetine within a context of epilepsy. *Revista de Neurologia* 2014;58(SUPPL. 1):S43-S49.

Shahrbabaki ME, Sabzevari L, Haghdoost A, et al. A randomized double blind crossover study on the effectiveness of buspirone and methylphenidate in treatment of attention deficit/hyperactivity disorder in children and adolescents. *Iranian Journal of Psychiatry and Clinical Psychology* 2013;18(4):292-297.

Yu X, Liu L, Sun L, et al. Multi-dimensional exploration of the characteristics of emotional regulation in children with attention-deficit/hyperactivity disorder. *National Medical Journal of China* 2015;95(39):3184-3189.

Zamora J, Velasquez A, Troncoso L, et al. [Zinc in the therapy of the attention-deficit/hyperactivity disorder in children. A preliminar randomized controlled trial]. *Arch Latinoam Nutr* 2011;61(3):242-6. PMID: 22696891.

## **Does Not Include Original Data**

Barbarese WJ, Katusic SK, Colligan RC, et al. Long-term stimulant medication treatment of attention-deficit/hyperactivity disorder: results from a population-based study. *J Dev Behav Pediatr* 2014;35(7):448-57. PMID: 25180895.

Bikic A, Leckman JF, Lindschou J, et al. Cognitive computer training in children with attention deficit hyperactivity disorder (ADHD) versus no intervention: study protocol for a randomized controlled trial. *Trials* 2015;16(1):480. PMID: 26499057.

Boyes C. Question 2 Should a child with ADHD and epilepsy be given ritalin?. *Arch Dis Child* 2010;95(9):759-61. PMID: 20716679.

Childress AC. Guanfacine extended release as adjunctive therapy to psychostimulants in children and adolescents with attention-deficit/hyperactivity disorder. *Adv Ther* 2012;29(5):385-400. PMID: 22610723.

Cole E. Qb test improves diagnosis of attention deficit disorder. *Nurs Child Young People* 2015;27(2):10-1. PMID: 25759995.

Cowles BJ. Update on the management of attention-deficit/hyperactivity disorder in children and adults: Patient considerations and the role of lisdexamfetamine. *Therapeutics and Clinical Risk Management* 2009;5(1):943-948.

Croxtall JD. Clonidine extended-release: in attention-deficit hyperactivity disorder. *Paediatr Drugs* 2011;13(5):329-36. PMID: 21888447.

Frances A. Better safe than sorry. *Australian and New Zealand Journal of Psychiatry* 2012;46(8):695-696.

Hansen S. Kids Together: A group therapy program for children using cognitive-behavioral play therapy interventions. In: Drewes AA, Schaefer CE, Drewes AA, Schaefer CE, eds. *Play therapy in middle childhood*. Washington, DC, US: American Psychological Association; 2016:153-69.

Hechtman L. Effects of treatment on the overall functioning of children with ADHD. *Journal of the Canadian Academy of Child and Adolescent Psychiatry / Journal de l'Académie canadienne de psychiatrie de l'enfant et de l'adolescent* 2009;18(2,Suppl):11-16.

Hennessy S, Schelleman H, Daniel GW, et al. Cardiovascular safety of ADHD medications: rationale for and design of an investigator-initiated observational study. *Pharmacoepidemiol Drug Saf* 2010;19(9):934-41. PMID: 20623519.

Hinshaw SP and Arnold LE. ADHD, Multimodal Treatment, and Longitudinal Outcome: Evidence, Paradox, and Challenge. *Wiley Interdiscip Rev Cogn Sci* 2015;6(1):39-52. PMID: 25558298.

Huang YS, Tsai MH and Guillemineault C. Pharmacological treatment of ADHD and the short and long term effects on sleep. *Curr Pharm Des* 2011;17(15):1450-8. PMID: 21476954.

Hvolby A and Bilenberg N. Use of Ball Blanket in attention-deficit/hyperactivity disorder sleeping problems. *Nord J Psychiatry* 2011;65(2):89-94. PMID: 20662681.

Johnson M. The lure of an ADHD treatment minus the meds. *US News World Rep* 2009;146(11):80-1. PMID: 20027829.

Kean JD, Camfield D, Sarris J, et al. A randomized controlled trial investigating the effects of PCSO-524, a patented oil extract of the New Zealand green lipped mussel (*Perna canaliculus*), on the behaviour, mood, cognition and neurophysiology of children and adolescents (aged 6-14 years) experiencing clinical and sub-clinical levels of hyperactivity and inattention: study protocol ACTRN12610000978066. *Nutr J* 2013;12:100. PMID: 23866813.

Keating GM. Methylphenidate transdermal system in attention-deficit hyperactivity disorder in adolescents: profile report. *Drugs R D* 2012;12(3):171-3. PMID: 22934753.

Keating GM. Methylphenidate transdermal system: in attention-deficit hyperactivity disorder in adolescents. *CNS Drugs* 2011;25(4):333-42. PMID: 21425884.

Kerson C. A proposed multisite double-blind randomized clinical trial of neurofeedback for ADHD: need, rationale, and strategy. *J Atten Disord* 2013;17(5):420-36. PMID: 23590978.

Kieling R and Rohde LA. ADHD in children and adults: diagnosis and prognosis. *Curr Top Behav Neurosci* 2012;9:1-16. PMID: 21499858.

Kohn MR, Tsang TW and Clarke SD. Efficacy and safety of atomoxetine in the treatment of children and adolescents with attention deficit hyperactivity disorder. *Clin Med Insights Pediatr* 2012;6:95-162. PMID: 23641171.

Leben N. Directive group play therapy for children with attention-deficit/hyperactivity disorder. In: Kaduson HG, Schaefer CE, Kaduson HG, Schaefer CE, eds. *Short-term play therapy for children* (3rd ed.). New York, NY, US: Guilford Press; 2015:325-52.

McCann DC, Thompson M, Daley D, et al. Study protocol for a randomized controlled trial comparing the efficacy of a specialist and a generic parenting programme for the treatment of preschool ADHD. *Trials* 2014;15:142. PMID: 24767423.

Meppelink R, de Bruin EI and Bogels SM. Meditation or Medication? Mindfulness training versus medication in the treatment of childhood ADHD: a randomized controlled trial. *BMC Psychiatry* 2016;16:267. PMID: 27460004.

Methylphenidate: growth retardation. *Prescrire Int* 2011;20(120):238-9. PMID: 21970086.

Muir VJ and Perry CM. Guanfacine extended-release: in attention deficit hyperactivity disorder. *Drugs* 2010;70(13):1693-702. PMID: 20731476.

Ondrejka I, Abali O, Paclt I, et al. A prospective observational study of attention-deficit/hyperactivity disorder in Central and Eastern Europe and Turkey: Symptom severity and treatment options in a paediatric population. *Int J Psychiatry Clin Pract* 2010;14(2):116-26. PMID: 24922471.

Parens E and Johnston J. Troubled children: diagnosing, treating, and attending to context. A Hastings Center special report. *Hastings Cent Rep* 2011;41(2):S1-32. PMID: 21495513.

Pataki C and Carlson GA. The comorbidity of ADHD and bipolar disorder: any less confusion?. *Curr Psychiatry Rep* 2013;15(7):372. PMID: 23712723.

Pelsser LM, Steijn DJ and Frankena K. 'A randomized controlled pilot study into the effects of a restricted elimination diet on family structure in families with ADHD and ODD': Comment. *Journal of Developmental and Behavioral Pediatrics* 2013;34(9):734-734.

Peyre H, Hoertel N, Cortese S, et al. Long-term effects of ADHD medication on adult height: Results from the NESARC. *Journal of Clinical Psychiatry* 2013;74(11):1123-1125.

Pulgaron ER. Childhood obesity: a review of increased risk for physical and psychological comorbidities. *Clin Ther* 2013;35(1):A18-32. PMID: 23328273.

Reddy LA. Child ADHD multimodal program: Use of cognitive-behavioral group play interventions. In: Reddy LA, Files-Hall TM, Schaefer CE, Reddy LA, Files-Hall TM, Schaefer CE, eds. *Empirically based play interventions for children* (2nd ed.). Washington, DC, US: American Psychological Association; 2016:181-201.

Ross SM. Omega-3 fatty acids, part I: the effects of n-3 polyunsaturated fatty acid in the treatment of attention-deficit hyperactivity disorder in children. *Holist Nurs Pract* 2012;26(6):356-9. PMID: 23075752.

Sciberras E, Efron D, Gerner B, et al. Study protocol: the sleeping sound with attention-deficit/hyperactivity disorder project. *BMC Pediatr* 2010;10:101. PMID: 21192797.

Srinivasaraghavan R, Kattimani S and Mahadevan S. Duration of untreated illness and early treatment response in children with attention deficit/hyperactivity disorder—A preliminary study. *Asian Journal of Psychiatry* 2014;9:87-88.

Storebo OJ, Pedersen J, Skoog M, et al. Randomised social-skills training and parental training plus standard treatment versus standard treatment of children with attention deficit hyperactivity disorder - the SOSTRA trial protocol. *Trials* 2011;12:18. PMID: 21255399.

Study shows no link between stimulant use in ADHD treatment and cardiovascular events. *Expert Review of Neurotherapeutics* 2012;12(4):369-369.

Swanson JM, Schuck S, Porter MM, et al. Categorical and dimensional definitions and evaluations of symptoms of ADHD: History of the SNAP and the SWAN rating scales. *The International Journal of Educational and Psychological Assessment* 2012;10(1):51-70.

Vaughan BS, March JS and Kratochvil CJ. The evidence-based pharmacological treatment of paediatric ADHD. *Int J Neuropsychopharmacol* 2012;15(1):27-39. PMID: 21329553.

Waxmonsky JG, Waschbusch DA, Glatt SJ, et al. Prediction of placebo response in 2 clinical trials of lisdexamfetamine dimesylate for the treatment of ADHD. *J Clin Psychiatry* 2011;72(10):1366-75. PMID: 21367347.

Weder N. Here/in this issue and there/abstract thinking: Are we there yet? Electroencephalography as a diagnostic tool for attention-deficit/hyperactivity disorder. *Journal of the American Academy of Child & Adolescent Psychiatry* 2013;52(11):1119-1120.

Zwi M, Jones H, Thorgaard C, et al. Parent training interventions for attention deficit hyperactivity disorder. *Cochrane Database Syst Rev* 2009;(3). PMID: 25419178.

## **Does Not Meet Study Design or Sample Size Requirements**

Aagaard L, Thirstrup S and Hansen EH. Opening the white boxes: the licensing documentation of efficacy and safety of psychotropic medicines for children. *Pharmacoepidemiol Drug Saf* 2009;18(5):401-11. PMID: 19326364.

Abbasi SH, Heidari S, Mohammadi MR, et al. Acetyl-L-carnitine as an adjunctive therapy in the treatment of attention-deficit/hyperactivity disorder in children and adolescents: a placebo-controlled trial. *Child Psychiatry Hum Dev* 2011;42(3):367-75. PMID: 21336630.

Abdollahian E, Mokhber N, Balaghi A, et al. The effectiveness of cognitive-behavioural play therapy on the symptoms of attention-deficit/hyperactivity disorder in children aged 7-9 years. *Atten Defic Hyperact Disord* 2013;5(1):41-6. PMID: 23179507.

Abibullaev B and An J. Decision support algorithm for diagnosis of ADHD using electroencephalograms. *J Med Syst* 2012;36(4):2675-88. PMID: 21671069.

Accorsi A, Lucci C, Di Mattia L, et al. Effect of osteopathic manipulative therapy in the attentive performance of children with attention-deficit/hyperactivity disorder. *J Am Osteopath Assoc* 2014;114(5):374-81. PMID: 24778002.

Adler LA, Wilens T, Zhang S, et al. Atomoxetine treatment outcomes in adolescents and young adults with attention-deficit/hyperactivity disorder: results from a post hoc, pooled analysis. *Clin Ther* 2012;34(2):363-73. PMID: 22285724.

Aebi M, Winkler Metzke C and Steinhausen HC. Accuracy of the DSM-oriented attention problem scale of the child behavior checklist in diagnosing attention-deficit hyperactivity disorder. *J Atten Disord* 2010;13(5):454-63. PMID: 19372495.

Ahmed R, Raynor DK, McCaffery KJ, et al. The design and user-testing of a question prompt list for attention-deficit/hyperactivity disorder. *BMJ Open* 2014;4(12):e006585. PMID: 25515843.

Albertin SV. Diagnosis of attention deficit hyperactivity disorder using a conditioned reflex approach. *Neuroscience and Behavioral Physiology* 2011;41(9):906-910.

Albrecht B, Brandeis D, Uebel H, et al. Action monitoring in children with or without a family history of ADHD--effects of gender on an endophenotype parameter. *Neuropsychologia* 2010;48(4):1171-7. PMID: 20026087.

Alda JA and Serrano-Troncoso E. Attention-deficit hyperactivity disorder: agreement between clinical impression and the SNAP-IV screening tool. *Actas Esp Psiquiatr* 2013;41(2):76-83. PMID: 23592067.

Allen R and Pammer K. The Impact of Concurrent Noise on Visual Search in Children With ADHD. *J Atten Disord* 2015. PMID: 26396146.

Altin M, El-Shafei AA, Yu M, et al. Pharmacological treatment for attention deficit hyperactivity disorder: functional outcomes in children and adolescents from non-Western countries. *Drugs Context* 2013;2013:212260. PMID: 24432046.

Amado L, Jarque S and Ceccato R. Differential impact of a multimodal versus pharmacological therapy on the core symptoms of attention deficit/hyperactivity disorder in childhood. *Research in Developmental Disabilities* 2016;59:93-104.

Amiri S, AbdollahiFakhim S, Lotfi A, et al. Effect of adenotonsillectomy on ADHD symptoms of children with adenotonsillar hypertrophy and sleep disordered breathing. *Int J Pediatr Otorhinolaryngol* 2015;79(8):1213-7. PMID: 26066853.

Arabgol F, Panaghi L and Hebrani P. Reboxetine versus methylphenidate in treatment of children and adolescents with attention deficit-hyperactivity disorder. *Eur Child Adolesc Psychiatry* 2009;18(1):53-9. PMID: 18563471.

Arabgol F, Panaghi L and Nikzad V. Risperidone Versus Methylphenidate in Treatment of Preschool Children With Attention-Deficit Hyperactivity Disorder. *Iran J Pediatr* 2015;25(1):e265. PMID: 26199694.

- Ardic UA, Ercan ES, Ercan E, et al. Osmotic release oral system methylphenidate is more effective than immediate release methylphenidate: A retrospective chart review in Turkish children with attention deficit hyperactivity disorder. *Klinik Psikofarmakoloji Bulteni* 2014;24(4):342-349.
- Ari ME, Cetin II, Ekici F, et al. Assessment of cardiovascular risks due to methylphenidate in six months of treatment in children with attention deficit and hyperactivity disorder. *Klinik Psikofarmakoloji Bulteni* 2014;24(3):248-252.
- Armstrong RB, Damaraju CV, Ascher S, et al. Time course of treatment effect of OROS(R) methylphenidate in children with ADHD. *J Atten Disord* 2012;16(8):697-705. PMID: 22084448.
- Arnold LE, Ganocy SJ, Mount K, et al. Three-year latent class trajectories of attention-deficit/hyperactivity disorder (ADHD) symptoms in a clinical sample not selected for ADHD. *J Am Acad Child Adolesc Psychiatry* 2014;53(7):745-60. PMID: 24954824.
- Arnold LE, Hurt E and Lofthouse N. Attention-deficit/hyperactivity disorder: dietary and nutritional treatments. *Child Adolesc Psychiatr Clin N Am* 2013;22(3):381-402, v. PMID: 23806311.
- Arnold LE, Lofthouse N, Hersch S, et al. EEG neurofeedback for ADHD: double-blind sham-controlled randomized pilot feasibility trial. *J Atten Disord* 2013;17(5):410-9. PMID: 22617866.
- Ashare RL, Hawk LW, Jr., Shiels K, et al. Methylphenidate enhances prepulse inhibition during processing of task-relevant stimuli in attention-deficit/hyperactivity disorder. *Psychophysiology* 2010;47(5):838-45. PMID: 20233343.
- Ashkenasi A. Effect of transdermal methylphenidate wear times on sleep in children with attention deficit hyperactivity disorder. *Pediatr Neurol* 2011;45(6):381-6. PMID: 22115000.
- Assareh M, Davari Ashtiani R, Khademi M, et al. Efficacy of Polyunsaturated Fatty Acids (PUFA) in the Treatment of Attention Deficit Hyperactivity Disorder: A Randomized, Double-Blind, Placebo-Controlled Clinical Trial. *J Atten Disord* 2012. PMID: 23160488.
- Au A, Lau KM, Wong AHC, et al. The efficacy of a group Triple P (positive parenting program) for Chinese parents with a child diagnosed with ADHD in Hong Kong: A pilot randomised controlled study. *Australian Psychologist* 2014;49(3):151-162.
- Azami S, Moghadas A, Sohrabi-Esmrood F, et al. A pilot randomized controlled trial comparing computer-assisted cognitive rehabilitation, stimulant medication, and an active control in the treatment of ADHD. *Child and Adolescent Mental Health* 2016;21(4):217-224.
- Azami S, Moghadas A, Sohrabi-Esmrood F, et al. Innovations in Practice: A pilot randomized controlled trial comparing computer-assisted cognitive rehabilitation, stimulant medication, and an active control in the treatment of ADHD. *Child and Adolescent Mental Health* 2016.
- Babinski DE, Waxmonsky JG and Pelham WE, Jr.. Treating parents with attention-deficit/hyperactivity disorder: the effects of behavioral parent training and acute stimulant



medication treatment on parent-child interactions. *J Abnorm Child Psychol* 2014;42(7):1129-40. PMID: 24687848.

Babinski DE. Treating parents with attention-deficit/hyperactivity disorder: The effects of behavioral parent training and acute medication treatment on parent-child interactions. US: ProQuest Information & Learning; 2014.

Bakar EE, Taner YI, Soysal AS, et al. Behavioral rating inventory and laboratory tests measure different aspects of executive functioning in boys: A validity study. *Klinik Psikofarmakoloji Bulteni* 2011;21(4):302-316.

Bakhshayesh AR, Hansch S, Wyszkon A, et al. Neurofeedback in ADHD: a single-blind randomized controlled trial. *Eur Child Adolesc Psychiatry* 2011;20(9):481-91. PMID: 21842168.

Ballard W, Hall MN and Kaufmann L. Clinical inquiries. Do dietary interventions improve ADHD symptoms in children?. *J Fam Pract* 2010;59(4):234-5. PMID: 20398584.

Banaschewski T, Soutullo C, Lecendreux M, et al. Health-related quality of life and functional outcomes from a randomized, controlled study of lisdexamfetamine dimesylate in children and adolescents with attention deficit hyperactivity disorder. *CNS Drugs* 2013;27(10):829-40. PMID: 23893527.

Bard DE, Wolraich ML, Neas B, et al. The psychometric properties of the Vanderbilt attention-deficit hyperactivity disorder diagnostic parent rating scale in a community population. *J Dev Behav Pediatr* 2013;34(2):72-82. PMID: 23363972.

Bart O, Raz S and Dan O. Reliability and validity of the Online Continuous Performance Test among children. *Assessment* 2014;21(5):637-43. PMID: 24752387.

Battagliese G, Caccetta M, Luppino OI, et al. Cognitive-behavioral therapy for externalizing disorders: A meta-analysis of treatment effectiveness. *Behaviour Research and Therapy* 2015;75:60-71.

Baumeister S, Wolf I, Holz N, et al. Neurofeedback training effects on inhibitory brain activation in ADHD: A matter of learning?. *Neuroscience* 2016. PMID: 27659116.

Bayoumy IM, Khaleel SH, Nada M, et al. Efficacy and attributes of repetitive transcranial magnetic stimulation (rTMS) in treatment of a sample of children with attention deficit hyperactivity disorder (ADHD). *Egyptian Journal of Neurology, Psychiatry and Neurosurgery* 2014;51(3):361-367.

Beauchaine TP, Neuhaus E, Gatzke-Kopp LM, et al. Electrodermal responding predicts responses to, and may be altered by, preschool intervention for ADHD. *J Consult Clin Psychol* 2015;83(2):293-303. PMID: 25486374.

Bedard AC, Schulz KP, Krone B, et al. Neural mechanisms underlying the therapeutic actions of guanfacine treatment in youth with ADHD: a pilot fMRI study. *Psychiatry Res* 2015;231(3):353-6. PMID: 25659477.

Bedard AC, Stein MA, Halperin JM, et al. Differential impact of methylphenidate and atomoxetine on sustained attention in youth with attention-deficit/hyperactivity disorder. *J Child Psychol Psychiatry* 2015;56(1):40-8. PMID: 24942409.

Behdani F, Hebrani P, Naseraee A, et al. Does omega-3 supplement enhance the therapeutic results of methylphenidate in attention deficit hyperactivity disorder patients?. *J Res Med Sci* 2013;18(8):653-8. PMID: 24379840.

Belanger SA, Vanasse M, Spahis S, et al. Omega-3 fatty acid treatment of children with attention-deficit hyperactivity disorder: A randomized, double-blind, placebo-controlled study. *Paediatr Child Health* 2009;14(2):89-98. PMID: 19436468.

Berek M, Kordon A, Hargarter L, et al. Improved functionality, health related quality of life and decreased burden of disease in patients with ADHD treated with OROS(R) MPH: is treatment response different between children and adolescents?. *Child Adolesc Psychiatry Ment Health* 2011;5:26. PMID: 21791096.

Beriault M, Turgeon L, Labrosse M, et al. Comorbidity of ADHD and Anxiety Disorders in School-Age Children: Impact on Sleep and Response to a Cognitive-Behavioral Treatment. *J Atten Disord* 2015. PMID: 26396144.

Beyer von Morgenstern S, Becker I and Sinzig J. Improvement of facial affect recognition in children and adolescents with attention-deficit/hyperactivity disorder under methylphenidate. *Acta Neuropsychiatr* 2014;26(4):202-8. PMID: 25142287.

Bishry Z, Ramy HA, El-Shahawi HH, et al. Screening for ADHD in a Sample of Egyptian Adolescent School Students. *J Atten Disord* 2014. PMID: 24891559.

Blader JC, Schooler NR, Jensen PS, et al. Adjunctive divalproex versus placebo for children with ADHD and aggression refractory to stimulant monotherapy. *Am J Psychiatry* 2009;166(12):1392-401. PMID: 19884222.

Bloch MH, Panza KE, Landeros-Weisenberger A, et al. Meta-analysis: treatment of attention-deficit/hyperactivity disorder in children with comorbid tic disorders. *J Am Acad Child Adolesc Psychiatry* 2009;48(9):884-93. PMID: 19625978.

Block SL, Kelsey D, Coury D, et al. Once-daily atomoxetine for treating pediatric attention-deficit/hyperactivity disorder: comparison of morning and evening dosing. *Clin Pediatr (Phila)* 2009;48(7):723-33. PMID: 19420182.

Blum NJ, Jawad AF, Clarke AT, et al. Effect of osmotic-release oral system methylphenidate on different domains of attention and executive functioning in children with attention-deficit-hyperactivity disorder. *Dev Med Child Neurol* 2011;53(9):843-9. PMID: 21585365.

Boellner SW, Stark JG, Krishnan S, et al. Pharmacokinetics of lisdexamfetamine dimesylate and its active metabolite, d-amphetamine, with increasing oral doses of lisdexamfetamine dimesylate in children with attention-deficit/hyperactivity disorder: a single-dose, randomized, open-label, crossover study. *Clin Ther* 2010;32(2):252-64. PMID: 20206783.

Bor W, Heath F, Heussler H, et al. Can a multi-disciplinary assessment approach improve outcomes for children with attention deficit hyperactivity disorder?. *Australasian Psychiatry* 2013;21(5):499-503.

Bouwman C, van der Kolk A, Oppe M, et al. Validity and responsiveness of the EQ-5D and the KIDSCREEN-10 in children with ADHD. *Eur J Health Econ* 2014;15(9):967-77. PMID: 24233919.

Brams M, Turnbow J, Pestreich L, et al. A randomized, double-blind study of 30 versus 20 mg dexamethylphenidate extended-release in children with attention-deficit/hyperactivity disorder: late-day symptom control. *J Clin Psychopharmacol* 2012;32(5):637-44. PMID: 22926597.

Bruchmuller K, Margraf J and Schneider S. Is ADHD diagnosed in accord with diagnostic criteria? Overdiagnosis and influence of client gender on diagnosis. *J Consult Clin Psychol* 2012;80(1):128-38. PMID: 22201328.

Bruxel EM, Salatino-Oliveira A, Akutagava-Martins GC, et al. LPHN3 and attention-deficit/hyperactivity disorder: a susceptibility and pharmacogenetic study. *Genes Brain Behav* 2015;14(5):419-27. PMID: 25989180.

Bubnik MG, Hawk LW, Jr., Pelham WE, Jr., et al. Reinforcement enhances vigilance among children with ADHD: comparisons to typically developing children and to the effects of methylphenidate. *J Abnorm Child Psychol* 2015;43(1):149-61. PMID: 24931776.

Buchhorn R, Conzelmann A, Willaschek C, et al. Heart rate variability and methylphenidate in children with ADHD. *Atten Defic Hyperact Disord* 2012;4(2):85-91. PMID: 22328340.

Buitelaar J, Asherson P, Soutullo C, et al. Differences in maintenance of response upon discontinuation across medication treatments in attention-deficit/hyperactivity disorder. *Eur Neuropsychopharmacol* 2015;25(10):1611-21. PMID: 26169574.

Bukstein OG and Head J. Guanfacine ER for the treatment of adolescent attention-deficit/hyperactivity disorder. *Expert Opin Pharmacother* 2012;13(15):2207-13. PMID: 22957772.

Burns GL, Servera M, Bernad Mdel M, et al. Ratings of ADHD symptoms and academic impairment by mothers, fathers, teachers, and aides: construct validity within and across settings as well as occasions. *Psychol Assess* 2014;26(4):1247-58. PMID: 24932644.

Bushe CJ and Savill NC. Suicide related events and attention deficit hyperactivity disorder treatments in children and adolescents: a meta-analysis of atomoxetine and methylphenidate comparator clinical trials. *Child Adolesc Psychiatry Ment Health* 2013;7:19. PMID: 23777626.

Bussing R, Fernandez M, Harwood M, et al. Parent and teacher SNAP-IV ratings of attention deficit hyperactivity disorder symptoms: Psychometric properties and normative ratings from a school district sample. *Circulation* 2011;124(9):317-328.

Callahan L, Cocozza J, Steadman HJ, et al. A national survey of U.S. juvenile mental health courts. *Psychiatr Serv* 2012;63(2):130-4. PMID: 22302329.

Cannon M, Pelham WH, Sallee FR, et al. Effects of clonidine and methylphenidate on family quality of life in attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2009;19(5):511-7. PMID: 19877975.

Cannon RL. Parietal foci for attention deficit/hyperactivity disorder: Targets for LORETA neurofeedback with outcomes. *Biofeedback* 2014;42(2):47-57.

Cantrill A, Wilkes-Gillan S, Bundy A, et al. An eighteen-month follow-up of a pilot parent-delivered play-based intervention to improve the social play skills of children with attention deficit hyperactivity disorder and their playmates. *Australian Occupational Therapy Journal* 2015;62(3):197-207.

Carboni JA, Roach AT and Fredrick LD. Impact of mindfulness training on the behavior of elementary students with attention-deficit/hyperactive disorder. *Research in Human Development* 2013;10(3):234-251.

Cardo E, Porsdal V, Quail D, et al. Fast vs. slow switching from stimulants to atomoxetine in children and adolescents with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2013;23(4):252-61. PMID: 23683140.

Chan GFC, Lai KYC, Luk ESL, et al. Clinical utility of the Chinese Strengths and Weaknesses of ADHD-Symptoms and Normal-behaviors questionnaire (SWAN) when compared with DISC-IV. *Neuropsychiatric Disease and Treatment* 2014;10:1533-1542.

Chan GF-C, Lai KY-C, Luk ES-L, et al. Clinical utility of the Chinese Version of the Strengths and Weaknesses of ADHD-Symptoms and Normal-Behaviors questionnaire (SWAN) when compared with DISC-IV. *Neuropsychiatric Disease and Treatment* 2014;10.

Chang Y-K, Hung C-L, Huang C-J, et al. Effects of an aquatic exercise program on inhibitory control in children with ADHD: A preliminary study. *Archives of Clinical Neuropsychology* 2014;29(3):217-223.

Chang YK, Liu S, Yu HH, et al. Effect of acute exercise on executive function in children with attention deficit hyperactivity disorder. *Arch Clin Neuropsychol* 2012;27(2):225-37. PMID: 22306962.

Charach A, Chen S, Hogg-Johnson S, et al. Using the Conners' Teacher Rating Scale-Revised in school children referred for assessment. *Can J Psychiatry* 2009;54(4):232-41. PMID: 19321029.

Chen TH, Wu SW, Welge JA, et al. Reduced short interval cortical inhibition correlates with atomoxetine response in children with attention-deficit hyperactivity disorder (ADHD). *J Child Neurol* 2014;29(12):1672-9. PMID: 24413361.

Childress AC, Arnold V, Adeyi B, et al. The effects of lisdexamfetamine dimesylate on emotional lability in children 6 to 12 years of age with ADHD in a double-blind placebo-controlled trial. *J Atten Disord* 2014;18(2):123-32. PMID: 22740112.

Childress AC, Brams M, Cutler AJ, et al. The Efficacy and Safety of Evekeo, Racemic Amphetamine Sulfate, for Treatment of Attention-Deficit/Hyperactivity Disorder Symptoms: A Multicenter, Dose-Optimized, Double-Blind, Randomized, Placebo-Controlled Crossover Laboratory Classroom Study. *J Child Adolesc Psychopharmacol* 2015;25(5):402-14. PMID: 25692608.

Childress AC, Spencer T, Lopez F, et al. Efficacy and safety of dexamethylphenidate extended-release capsules administered once daily to children with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2009;19(4):351-61. PMID: 19702487.

Childress AC. A critical appraisal of atomoxetine in the management of ADHD. *Ther Clin Risk Manag* 2016;12:27-39. PMID: 26730199.

Cho S, Lee SI, Yoo H, et al. A randomized, open-label assessment of response to various doses of atomoxetine in Korean pediatric outpatients with attention-deficit/hyperactivity disorder. *Psychiatry Investig* 2011;8(2):141-8. PMID: 21852991.

Choi JW, Han DH, Kang KD, et al. Aerobic exercise and attention deficit hyperactivity disorder: brain research. *Med Sci Sports Exerc* 2015;47(1):33-9. PMID: 24824770.

Chou TL, Chia S, Shang CY, et al. Differential therapeutic effects of 12-week treatment of atomoxetine and methylphenidate on drug-naïve children with attention deficit/hyperactivity disorder: A counting Stroop functional MRI study. *Eur Neuropsychopharmacol* 2015. PMID: 26409297.

Chou WJ, Chou MC, Tzang RF, et al. Better efficacy for the osmotic release oral system methylphenidate among poor adherents to immediate-release methylphenidate in the three ADHD subtypes. *Psychiatry Clin Neurosci* 2009;63(2):167-75. PMID: 19335386.

Christiansen H, Reh V, Schmidt MH, et al. Slow cortical potential neurofeedback and self-management training in outpatient care for children with ADHD: study protocol and first preliminary results of a randomized controlled trial. *Front Hum Neurosci* 2014;8:943. PMID: 25505396.

Cockcroft K, Ashwal J and Bentley A. Sleep and daytime sleepiness in methylphenidate medicated and un-medicated children with attention-deficit/hyperactivity disorder (ADHD). *Afr J Psychiatry (Johannesbg)* 2009;12(4):275-9. PMID: 20033109.

Coelho LF, Barbosa DLF, Rizzutti S, et al. Use of cognitive behavioral therapy and token economy to alleviate dysfunctional behavior in children with attention-deficit hyperactivity disorder. *Frontiers in Psychiatry* 2015;6(NOV).

Coghill D, Banaschewski T, Lecendreux M, et al. European, randomized, phase 3 study of lisdexamfetamine dimesylate in children and adolescents with attention-deficit/hyperactivity disorder. *Eur Neuropsychopharmacol* 2013;23(10):1208-18. PMID: 23332456.

Coghill DR, Banaschewski T, Lecendreux M, et al. Efficacy of lisdexamfetamine dimesylate throughout the day in children and adolescents with attention-deficit/hyperactivity disorder: results from a randomized, controlled trial. *Eur Child Adolesc Psychiatry* 2014;23(2):61-8. PMID: 23708466.

Coghill DR, Banaschewski T, Lecendreux M, et al. Maintenance of efficacy of lisdexamfetamine dimesylate in children and adolescents with attention-deficit/hyperactivity disorder: randomized-withdrawal study design. *J Am Acad Child Adolesc Psychiatry* 2014;53(6):647-657.e1. PMID: 24839883.

Coghill DR, Banaschewski T, Lecendreux M, et al. Post hoc analyses of the impact of previous medication on the efficacy of lisdexamfetamine dimesylate in the treatment of attention-deficit/hyperactivity disorder in a randomized, controlled trial. *Neuropsychiatr Dis Treat* 2014;10:2039-47. PMID: 25378930.

Cohen SC, Mulqueen JM, Ferracioli-Oda E, et al. Meta-Analysis: Risk of Tics Associated With Psychostimulant Use in Randomized, Placebo-Controlled Trials. *J Am Acad Child Adolesc Psychiatry* 2015;54(9):728-36. PMID: 26299294.

Cohen-Yavin I, Yoran-Hegesh R, Strous RD, et al. Efficacy of reboxetine in the treatment of attention-deficit/hyperactivity disorder in boys with intolerance to methylphenidate: an open-label, 8-week, methylphenidate-controlled trial. *Clin Neuropharmacol* 2009;32(4):179-82. PMID: 19644227.

Coker TR, Elliott MN, Toomey SL, et al. Racial and ethnic disparities in ADHD diagnosis and treatment. *Pediatrics* 2016;138(3).

Connor DF, Findling RL, Kollins SH, et al. Effects of guanfacine extended release on oppositional symptoms in children aged 6-12 years with attention-deficit hyperactivity disorder and oppositional symptoms: a randomized, double-blind, placebo-controlled trial. *CNS Drugs* 2010;24(9):755-68. PMID: 20806988.

Conzelmann A, Gerdes AB, Mucha RF, et al. Autonomic hypoactivity in boys with attention-deficit/hyperactivity disorder and the influence of methylphenidate. *World J Biol Psychiatry* 2014;15(1):56-65. PMID: 24410179.

Cook A, Johnson C and Bradley-Johnson S. White noise to decrease problem behaviors in the classroom for a child with Attention Deficit Hyperactivity Disorder (ADHD). *Child & Family Behavior Therapy* 2015;37(1):38-50.

Coon ER, Quinonez RA, Moyer VA, et al. Overdiagnosis: how our compulsion for diagnosis may be harming children. *Pediatrics* 2014;134(5):1013-23. PMID: 25287462.

Cordier R, Munro N, Wilkes-Gillan S, et al. The pragmatic language abilities of children with ADHD following a play-based intervention involving peer-to-peer interactions. *Int J Speech Lang Pathol* 2013;15(4):416-28. PMID: 22974071.

Coughlin CG, Cohen SC, Mulqueen JM, et al. Meta-Analysis: Reduced Risk of Anxiety with Psychostimulant Treatment in Children with Attention-Deficit/Hyperactivity Disorder. *J Child Adolesc Psychopharmacol* 2015;25(8):611-7. PMID: 26402485.

Cubero-Millan I, Molina-Carballo A, Machado-Casas I, et al. Methylphenidate ameliorates depressive comorbidity in ADHD children without any modification on differences in serum melatonin concentration between ADHD subtypes. *Int J Mol Sci* 2014;15(9):17115-29. PMID: 25257531.

Curchack-Lichtin JT, Chacko A and Halperin JM. Changes in ADHD symptom endorsement: preschool to school age. *J Abnorm Child Psychol* 2014;42(6):993-1004. PMID: 24343794.

Cutler AJ, Brams M, Bukstein O, et al. Response/remission with guanfacine extended-release and psychostimulants in children and adolescents with attention-deficit/hyperactivity disorder. *J Am Acad Child Adolesc Psychiatry* 2014;53(10):1092-101. PMID: 25245353.

Cuypers K, De Ridder K and Strandheim A. The effect of therapeutic horseback riding on 5 children with attention deficit hyperactivity disorder: a pilot study. *J Altern Complement Med* 2011;17(10):901-8. PMID: 22010778.

Daley D and O'Brien M. A small-scale randomized controlled trial of the self-help version of the New Forest Parent Training Programme for children with ADHD symptoms. *Eur Child Adolesc Psychiatry* 2013;22(9):543-52. PMID: 23463179.

Dalsgaard S, Kvist AP, Leckman JF, et al. Cardiovascular safety of stimulants in children with attention-deficit/hyperactivity disorder: a nationwide prospective cohort study. *J Child Adolesc Psychopharmacol* 2014;24(6):302-10. PMID: 24956171.

Dalsgaard S, Leckman JF, Nielsen HS, et al. Gender and injuries predict stimulant medication use. *J Child Adolesc Psychopharmacol* 2014;24(5):253-9. PMID: 24813570.

Daniels B, Volpe RJ, Briesch AM, et al. Development of a problem-focused behavioral screener linked to evidence-based intervention. *Sch Psychol Q* 2014;29(4):438-51. PMID: 25485466.

Dashti N, Hekmat H, Soltani HR, et al. Comparison of therapeutic effects of omega-3 and methylphenidate (ritalin((R))) in treating children with attention deficit hyperactivity disorder. *Iran J Psychiatry Behav Sci* 2014;8(4):7-11. PMID: 25798168.

Davari-Ashtiani R, Shahrababaki ME, Razjouyan K, et al. Bupirone versus methylphenidate in the treatment of attention deficit hyperactivity disorder: a double-blind and randomized trial. *Child Psychiatry Hum Dev* 2010;41(6):641-8. PMID: 20517641.

- Deans P, O'Laughlin L, Brubaker B, et al. Use of eye movement tracking in the differential diagnosis of Attention Deficit Hyperactivity Disorder (ADHD) and reading disability. *Psychology* 2010;1(4):238-246.
- Dell'Agnello G, Maschietto D, Bravaccio C, et al. Atomoxetine hydrochloride in the treatment of children and adolescents with attention-deficit/hyperactivity disorder and comorbid oppositional defiant disorder: A placebo-controlled Italian study. *Eur Neuropsychopharmacol* 2009;19(11):822-34. PMID: 19716683.
- Devena SE and Watkins MW. Diagnostic utility of WISC-IV general abilities index and cognitive proficiency index difference scores among children with ADHD. *Journal of Applied School Psychology* 2012;28(2):133-154.
- Dickson RA, Maki E, Gibbins C, et al. Time courses of improvement and symptom remission in children treated with atomoxetine for attention-deficit/hyperactivity disorder: analysis of Canadian open-label studies. *Child Adolesc Psychiatry Ment Health* 2011;5:14. PMID: 21569378.
- Dittmann RW, Cardo E, Nagy P, et al. Efficacy and safety of lisdexamfetamine dimesylate and atomoxetine in the treatment of attention-deficit/hyperactivity disorder: a head-to-head, randomized, double-blind, phase IIIb study. *CNS Drugs* 2013;27(12):1081-92. PMID: 23959815.
- Dittmann RW, Cardo E, Nagy P, et al. Treatment response and remission in a double-blind, randomized, head-to-head study of lisdexamfetamine dimesylate and atomoxetine in children and adolescents with attention-deficit hyperactivity disorder. *CNS Drugs* 2014;28(11):1059-69. PMID: 25038977.
- Dittmann RW, Schacht A, Helsberg K, et al. Atomoxetine versus placebo in children and adolescents with attention-deficit/hyperactivity disorder and comorbid oppositional defiant disorder: a double-blind, randomized, multicenter trial in Germany. *J Child Adolesc Psychopharmacol* 2011;21(2):97-110. PMID: 21488751.
- Docking K, Munro N, Cordier R, et al. Examining the language skills of children with ADHD following a play-based intervention. *Child Language Teaching and Therapy* 2013;29(3):291-304.
- Döpfner M, Ise E, Wolff Metternich-Kaizman T, et al. Adaptive multimodal treatment for children with attention-deficit-/hyperactivity disorder: An 18 month follow-up. *Child Psychiatry and Human Development* 2015;46(1):44-56.
- Döpfner M, Ose C, Fischer R, et al. Comparison of the efficacy of two different modified release methylphenidate preparations for children and adolescents with attention-deficit/hyperactivity disorder in a natural setting: comparison of the efficacy of Medikinet((R)) retard and Concerta((R))--a randomized, controlled, double-blind multicenter clinical crossover trial. *J Child Adolesc Psychopharmacol* 2011;21(5):445-54. PMID: 21790298.
- Dubnov-Raz G, Khoury Z, Wright I, et al. The effect of alpha-linolenic acid supplementation on ADHD symptoms in children: a randomized controlled double-blind study. *Front Hum Neurosci* 2014;8:780. PMID: 25339885.



- DuPaul GJ, Kern L, Gormley MJ, et al. Early intervention for young children with ADHD: Academic outcomes for responders to behavioral treatment. *School Mental Health* 2011;3(3):117-126. PMID: 2011-18575-002.
- Durand-Rivera A, Alatorre-Miguel E, Zambrano-Sánchez E, et al. Methylphenidate efficacy: Immediate versus extended release at short term in mexican children with ADHD assessed by conners scale and EEG. *Neurology Research International* 2015;2015.
- Edwards C and Howlett E. Putting knowledge to trial: 'ADHD parents' and the evaluation of alternative therapeutic regimes. *Soc Sci Med* 2013;81:34-41. PMID: 23422058.
- Edwards MC and Sigel BA. Estimates of the Utility of Child Behavior Checklist/Teacher Report Form Attention Problems Scale in the Diagnosis of ADHD in Children Referred to a Specialty Clinic. *Journal of Psychopathology and Behavioral Assessment* 2015;37(1):50-59.
- Efron D, Sciberras E, Anderson V, et al. Functional status in children with ADHD at age 6-8: a controlled community study. *Pediatrics* 2014;134(4):e992-e1000. PMID: 25266432.
- El Baza F, AlShahawi HA, Zahra S, et al. Magnesium supplementation in children with attention deficit hyperactivity disorder. *Egyptian Journal of Medical Human Genetics* 2015.
- Elliott GR, Blasey C, Rekshan W, et al. Cognitive Testing to Identify Children With ADHD Who Do and Do Not Respond to Methylphenidate. *J Atten Disord* 2014. PMID: 25122732.
- Epstein JN, Brinkman WB, Froehlich T, et al. Effects of stimulant medication, incentives, and event rate on reaction time variability in children with ADHD. *Neuropsychopharmacology* 2011;36(5):1060-72. PMID: 21248722.
- Epstein JN, Kelleher KJ, Baum R, et al. Variability in ADHD care in community-based pediatrics. *Pediatrics* 2014;134(6):1136-43. PMID: 25367532.
- Erder MH, Xie J, Signorovitch JE, et al. Cost effectiveness of guanfacine extended-release versus atomoxetine for the treatment of attention-deficit/hyperactivity disorder: application of a matching-adjusted indirect comparison. *Appl Health Econ Health Policy* 2012;10(6):381-95. PMID: 23113551.
- Escobar R, Montoya A, Polavieja P, et al. Evaluation of patients' and parents' quality of life in a randomized placebo-controlled atomoxetine study in attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2009;19(3):253-63. PMID: 19519260.
- Evans SW, Schultz BK, Demars CE, et al. Effectiveness of the Challenging Horizons After-School Program for young adolescents with ADHD. *Behav Ther* 2011;42(3):462-74. PMID: 21658528.
- Fabiano GA, Vujnovic RK, Pelham WE, et al. Enhancing the effectiveness of special education programming for children with attention deficit hyperactivity disorder using a daily report card. *School Psychology Review* 2010;39(2):219-239.

Faedda GL, Ohashi K, Hernandez M, et al. Actigraph measures discriminate pediatric bipolar disorder from attention-deficit/hyperactivity disorder and typically developing controls. *J Child Psychol Psychiatry* 2016;57(6):706-16. PMID: 26799153.

Faraone SV, Glatt SJ, Bukstein OG, et al. Effects of once-daily oral and transdermal methylphenidate on sleep behavior of children with ADHD. *J Atten Disord* 2009;12(4):308-15. PMID: 18400982.

Faraone SV, Newcorn JH, Antshel KM, et al. The Groundskeeper Gaming Platform as a Diagnostic Tool for Attention-Deficit/Hyperactivity Disorder: Sensitivity, Specificity, and Relation to Other Measures. *J Child Adolesc Psychopharmacol* 2016. PMID: 27105181.

Farmer CA, Brown NV, Gadow KD, et al. Comorbid symptomatology moderates response to risperidone, stimulant, and parent training in children with severe aggression, disruptive behavior disorder, and attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2015;25(3):213-24. PMID: 25885011.

Fernandes Azevedo A, Seabra-Santos MJ, Gaspar MF, et al. A parent-based intervention programme involving preschoolers with AD/HD behaviours: are children's and mothers' effects sustained over time?. *Eur Child Adolesc Psychiatry* 2014;23(6):437-50. PMID: 23999733.

Findling RL, Adeyi B, Dirks B, et al. Parent-reported executive function behaviors and clinician ratings of attention-deficit/hyperactivity disorder symptoms in children treated with lisdexamfetamine dimesylate. *J Child Adolesc Psychopharmacol* 2013;23(1):28-35. PMID: 23410139.

Findling RL, Childress AC, Cutler AJ, et al. Efficacy and safety of lisdexamfetamine dimesylate in adolescents with attention-deficit/hyperactivity disorder. *J Am Acad Child Adolesc Psychiatry* 2011;50(4):395-405. PMID: 21421179.

Findling RL, McBurnett K, White C, et al. Guanfacine extended release adjunctive to a psychostimulant in the treatment of comorbid oppositional symptoms in children and adolescents with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2014;24(5):245-52. PMID: 24945085.

Findling RL, Turnbow J, Burnside J, et al. A randomized, double-blind, multicenter, parallel-group, placebo-controlled, dose-optimization study of the methylphenidate transdermal system for the treatment of ADHD in adolescents. *CNS Spectr* 2010;15(7):419-30. PMID: 20625364.

Fosco WD, White CN and Hawk LW, Jr.. Acute Stimulant Treatment and Reinforcement Increase the Speed of Information Accumulation in Children with ADHD. *J Abnorm Child Psychol* 2016. PMID: 27787672.

Fox O, Adi-Japha E and Karni A. The effect of a skipped dose (placebo) of methylphenidate on the learning and retention of a motor skill in adolescents with Attention Deficit Hyperactivity Disorder. *Eur Neuropsychopharmacol* 2014;24(3):391-6. PMID: 24332892.

Funabiki Y, Kawagishi H, Uwatoko T, et al. Development of a multi-dimensional scale for PDD and ADHD. *Res Dev Disabil* 2011;32(3):995-1003. PMID: 21353761.

Gadow KD and Nolan EE. Methylphenidate and comorbid anxiety disorder in children with both chronic multiple tic disorder and ADHD. *J Atten Disord* 2011;15(3):246-56. PMID: 20378921.

Garcia SP, Guimaraes J, Zampieri JF, et al. Response to methylphenidate in children and adolescents with ADHD: does comorbid anxiety disorders matters?. *J Neural Transm (Vienna)* 2009;116(5):631-6. PMID: 19370390.

Garcia-Barrera MA, Karr JE, Duran V, et al. Cross-Cultural Validation of a Behavioral Screener for Executive Functions: Guidelines for Clinical Use Among Colombian Children With and Without ADHD. *Psychological Assessment* 2015.

Garcia-Gomez A, Rodriguez-Jimenez M, Guerrero-Barona E, et al. Benefits of an experimental program of equestrian therapy for children with ADHD. *Res Dev Disabil* 2016;59:176-185. PMID: 27614276.

Garg J, Arun P and Chavan BS. Comparative efficacy of methylphenidate and atomoxetine in oppositional defiant disorder comorbid with attention deficit hyperactivity disorder. *Int J Appl Basic Med Res* 2015;5(2):114-8. PMID: 26097819.

Garg J, Arun P and Chavan BS. Comparative short term efficacy and tolerability of methylphenidate and atomoxetine in attention deficit hyperactivity disorder. *Indian Pediatr* 2014;51(7):550-4. PMID: 25031133.

Garnock-Jones KP and Keating GM. Spotlight on atomoxetine in attention-deficit hyperactivity disorder in children and adolescents. *CNS Drugs* 2010;24(1):85-8. PMID: 20030421.

Gau SS, Ni HC, Shang CY, et al. Psychiatric comorbidity among children and adolescents with and without persistent attention-deficit hyperactivity disorder. *Aust N Z J Psychiatry* 2010;44(2):135-43. PMID: 20113302.

Georgiopoulos AM and Hua LL. The diagnosis and treatment of attention deficit-hyperactivity disorder in children and adolescents with cystic fibrosis: a retrospective study. *Psychosomatics* 2011;52(2):160-6. PMID: 21397109.

Gerber WD, Gerber-von Muller G, Andrasik F, et al. The impact of a multimodal Summer Camp Training on neuropsychological functioning in children and adolescents with ADHD: an exploratory study. *Child Neuropsychol* 2012;18(3):242-55. PMID: 21824010.

Gerdes AC, Kapke TL, Lawton KE, et al. Culturally adapting parent training for Latino youth with ADHD: Development and pilot. *Journal of Latina/o Psychology* 2015;3(2):71-87. PMID: 2015-18959-001.

Ghanizadeh A, Sayyari Z and Mohammadi MR. Effect of methylphenidate and folic Acid on ADHD symptoms and quality of life and aggression: a randomized double blind placebo controlled clinical trial. *Iran J Psychiatry* 2013;8(3):108-12. PMID: 24454418.

Gharebaghy S, Rassafiani M and Cameron D. Effect of cognitive intervention on children with ADHD. *Phys Occup Ther Pediatr* 2015;35(1):13-23. PMID: 25246134.

Giana G, Romano E, Porfirio MC, et al. Detection of auto-antibodies to DAT in the serum: interactions with DAT genotype and psycho-stimulant therapy for ADHD. *J Neuroimmunol* 2015;278:212-22. PMID: 25468771.

Giblin JM and Strobel AL. Effect of lisdexamfetamine dimesylate on sleep in children with ADHD. *J Atten Disord* 2011;15(6):491-8. PMID: 20574056.

Gibson BS, Gondoli DM, Johnson AC, et al. Component analysis of verbal versus spatial working memory training in adolescents with ADHD: a randomized, controlled trial. *Child Neuropsychol* 2011;17(6):546-63. PMID: 21390920.

Gill KE, Chappell AM, Beveridge TJR, et al. Chronic methylphenidate treatment during early life is associated with greater ethanol intake in socially isolated rats. *Alcoholism: Clinical and Experimental Research* 2014;38(8):2260-2268.

Goez HR, Scott O, Nevo N, et al. Using the test of variables of attention to determine the effectiveness of modafinil in children with attention-deficit hyperactivity disorder (ADHD): a prospective methylphenidate-controlled trial. *J Child Neurol* 2012;27(12):1547-52. PMID: 22447850.

Gonzalez-Heydrich J, Whitney J, Waber D, et al. Adaptive phase I study of OROS methylphenidate treatment of attention deficit hyperactivity disorder with epilepsy. *Epilepsy Behav* 2010;18(3):229-37. PMID: 20493783.

Gray KM, Riggs PD, Min SJ, et al. Cigarette and cannabis use trajectories among adolescents in treatment for attention-deficit/hyperactivity disorder and substance use disorders. *Drug Alcohol Depend* 2011;117(2-3):242-7. PMID: 21411243.

Gray L, Miller BS and Evans SW. Training children with ADHD to minimize impulsivity in auditory contralateral masking. *Int J Pediatr Otorhinolaryngol* 2012;76(4):483-7. PMID: 22297209.

Graziano PA, Geffken GR and Lall AS. Heterogeneity in the pharmacological treatment of children with ADHD: cognitive, behavioral, and social functioning differences. *J Atten Disord* 2011;15(5):382-91. PMID: 20495162.

Green CT, Long DL, Green D, et al. Will working memory training generalize to improve off-task behavior in children with attention-deficit/hyperactivity disorder?. *Neurotherapeutics* 2012;9(3):639-48. PMID: 22752960.

Green JG, Avenevoli S, Finkelman M, et al. Attention deficit hyperactivity disorder: concordance of the adolescent version of the Composite International Diagnostic Interview Version 3.0 (CIDI) with the K-SADS in the US National Comorbidity Survey Replication Adolescent (NCS-A) supplement. *Int J Methods Psychiatr Res* 2010;19(1):34-49. PMID: 20191660.

Grizenko N, Cai E, Jolicoeur C, et al. Effects of methylphenidate on acute math performance in children with attention-deficit hyperactivity disorder. *Can J Psychiatry* 2013;58(11):632-9. PMID: 24246434.

Grizenko N, Qi Zhang DD, Polotskaia A, et al. Efficacy of Methylphenidate in ADHD Children across the Normal and the Gifted Intellectual Spectrum. *J Can Acad Child Adolesc Psychiatry* 2012;21(4):282-8. PMID: 23133462.

Grizenko N, Zhang DDQ, Polotskaia A, et al. Efficacy of methylphenidate in ADHD children across the normal and the gifted intellectual spectrum. *Journal of the Canadian Academy of Child and Adolescent Psychiatry* 2012;21(4):282-288.

Groom MJ, Scerif G, Liddle PF, et al. Effects of motivation and medication on electrophysiological markers of response inhibition in children with attention-deficit/hyperactivity disorder. *Biological Psychiatry* 2010;67(7):624-631.

Guertin J, LeLorier J, Durand M, et al. Impact of a restrictive drug access program on the risk of cardiovascular encounters in children exposed to ADHD medications. *J Popul Ther Clin Pharmacol* 2014;21(3):e357-69. PMID: 25326915.

Gunther T, Herpertz-Dahlmann B and Konrad K. Sex differences in attentional performance and their modulation by methylphenidate in children with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2010;20(3):179-86. PMID: 20578930.

Gunther T, Kahraman-Lanzerath B, Knospe EL, et al. Modulation of attention-deficit/hyperactivity disorder symptoms by short- and long-acting methylphenidate over the course of a day. *J Child Adolesc Psychopharmacol* 2012;22(2):131-8. PMID: 22364402.

Gupta K and Mamidi P. A comparative study on Naladadi Ghrita in attention-deficit/hyperactivity disorder with Kushmanda Ghrita. *International Journal of Green Pharmacy* 2013;7(4):322-327.

Haack LM, Villodas MT, McBurnett K, et al. Parenting Mediates Symptoms and Impairment in Children With ADHD-Inattentive Type. *J Clin Child Adolesc Psychol* 2014:1-12. PMID: 25411896.

Haertling F, Mueller B and Bilke-Hentsch O. Effectiveness and safety of a long-acting, once-daily, two-phase release formulation of methylphenidate (Ritalin (R) LA) in school children under daily practice conditions. *Atten Defic Hyperact Disord* 2015;7(2):157-64. PMID: 25346231.

Haghshenas S, Hosseini MS and Aminjan AS. A possible correlation between vestibular stimulation and auditory comprehension in children with attention-deficit/hyperactivity disorder. *Psychology and Neuroscience* 2014;7(2):159-162.

Hahn-Markowitz J, Manor I and Maeir A. Effectiveness of cognitive-functional (Cog-Fun) intervention with children with attention deficit hyperactivity disorder: a pilot study. *Am J Occup Ther* 2011;65(4):384-92. PMID: 21834453.

Hailpern SM, Egan BM, Lewis KD, et al. Blood Pressure, Heart Rate, and CNS Stimulant Medication Use in Children with and without ADHD: Analysis of NHANES Data. *Front Pediatr* 2014;2:100. PMID: 25285304.

Hale JB, Reddy LA, Semrud-Clikeman M, et al. Executive impairment determines ADHD medication response: implications for academic achievement. *J Learn Disabil* 2011;44(2):196-212. PMID: 21383110.

Hall CL, Walker GM, Valentine AZ, et al. Protocol investigating the clinical utility of an objective measure of activity and attention (QbTest) on diagnostic and treatment decision-making in children and young people with ADHD-'Assessing QbTest Utility in ADHD' (AQUA): a randomised controlled trial. *BMJ Open* 2014;4(12):e006838. PMID: 25448628.

Hamidovic A, Dlugos A, Palmer AA, et al. Polymorphisms in dopamine transporter (SLC6A3) are associated with stimulant effects of D-amphetamine: an exploratory pharmacogenetic study using healthy volunteers. *Behav Genet* 2010;40(2):255-61. PMID: 20091113.

Hammer R, Cooke GE, Stein MA, et al. Functional neuroimaging of visuospatial working memory tasks enables accurate detection of attention deficit and hyperactivity disorder. *NeuroImage: Clinical* 2015;9:244-252.

Hammerness P, Georgiopoulos A, Doyle RL, et al. An open study of adjunct OROS-methylphenidate in children who are atomoxetine partial responders: II. Tolerability and pharmacokinetics. *J Child Adolesc Psychopharmacol* 2009;19(5):493-9. PMID: 19877973.

Hannesdottir DK, Ingvarsdottir E and Bjornsson A. The OutSMARTers Program for Children With ADHD: A Pilot Study on the Effects of Social Skills, Self-Regulation, and Executive Function Training. *J Atten Disord* 2014. PMID: 24505061.

Hantson J, Wang PP, Grizenko-Vida M, et al. Effectiveness of a therapeutic summer camp for children with ADHD: Phase I Clinical Intervention Trial. *J Atten Disord* 2012;16(7):610-7. PMID: 21856955.

Harfterkamp M, van de Loo-Neus G, Minderaa RB, et al. A randomized double-blind study of atomoxetine versus placebo for attention-deficit/hyperactivity disorder symptoms in children with autism spectrum disorder. *J Am Acad Child Adolesc Psychiatry* 2012;51(7):733-41. PMID: 22721596.

Hartanto TA, Krafft CE, Iosif AM, et al. A trial-by-trial analysis reveals more intense physical activity is associated with better cognitive control performance in attention-deficit/hyperactivity disorder. *Child Neuropsychol* 2015:1-9. PMID: 26059476.

Hashemian P and Nazemian A. Evaluation of bupropion and venlafaxine in children with ADHD. *African Journal of Psychiatry (South Africa)* 2015;18(2).

Hautmann C, Rothenberger A and Dopfner M. An observational study of response heterogeneity in children with attention deficit hyperactivity disorder following treatment switch to modified-release methylphenidate. *BMC Psychiatry* 2013;13:219. PMID: 24004962.

Hautmann C, Rothenberger A and Dopfner M. Daily Symptom Profiles of Children With ADHD Treated With Modified-Release Methylphenidate: An Observational Study. *J Atten Disord* 2013. PMID: 24062276.

Haydicky J, Shecter C, Wiener J, et al. Evaluation of MBCT for adolescents with ADHD and their parents: Impact on individual and family functioning. *Journal of Child and Family Studies* 2015;24(1):76-94.

Haydicky J, Wiener J, Badali P, et al. Evaluation of a mindfulness-based intervention for adolescents with learning disabilities and co-occurring ADHD and anxiety. *Mindfulness* 2012;3(2):151-164.

Hazell PL, Kohn MR, Dickson R, et al. Core ADHD symptom improvement with atomoxetine versus methylphenidate: a direct comparison meta-analysis. *J Atten Disord* 2011;15(8):674-83. PMID: 20837981.

Heinrich H, Busch K, Studer P, et al. Refining the picture of reduced alerting responses in ADHD - a single-trial analysis of event-related potentials. *Neurosci Lett* 2014;582:49-53. PMID: 25218713.

Helgadottir H, Gudmundsson OO, Baldursson G, et al. Electroencephalography as a clinical tool for diagnosing and monitoring attention deficit hyperactivity disorder: a cross-sectional study. *BMJ Open* 2015;5(1):e005500. PMID: 25596195.

Heller MD, Roots K, Srivastava S, et al. A Machine Learning-Based Analysis of Game Data for Attention Deficit Hyperactivity Disorder Assessment. *Games Health J* 2013;2(5):291-8. PMID: 26196929.

Hellwig-Brida S, Daseking M, Keller F, et al. Effects of methylphenidate on intelligence and attention components in boys with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2011;21(3):245-53. PMID: 21663427.

Hervas A, Huss M, Johnson M, et al. Efficacy and safety of extended-release guanfacine hydrochloride in children and adolescents with attention-deficit/hyperactivity disorder: a randomized, controlled, phase III trial. *Eur Neuropsychopharmacol* 2014;24(12):1861-72. PMID: 25453486.

Hirayama S, Terasawa K, Rabeler R, et al. The effect of phosphatidylserine administration on memory and symptoms of attention-deficit hyperactivity disorder: a randomised, double-blind, placebo-controlled clinical trial. *J Hum Nutr Diet* 2014;27(Suppl 2):284-91. PMID: 23495677.

Holzer B, Lopes V and Lehman R. Combination use of atomoxetine hydrochloride and olanzapine in the treatment of attention-deficit/hyperactivity disorder with comorbid disruptive behavior disorder in children and adolescents 10-18 years of age. *J Child Adolesc Psychopharmacol* 2013;23(6):415-8. PMID: 23952189.

Hong M, Lee WH, Moon DS, et al. A 36 month naturalistic retrospective study of clinic-treated youth with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2014;24(6):341-6. PMID: 24955936.

Hosainzadeh Maleki Z, Mashhadi A, Soltanifar A, et al. Barkley's Parent Training Program, Working Memory Training and their Combination for Children with ADHD: Attention Deficit Hyperactivity Disorder. *Iran J Psychiatry* 2014;9(2):47-54. PMID: 25632280.

Iannaccone R, Hauser TU, Ball J, et al. Classifying adolescent attention-deficit/hyperactivity disorder (ADHD) based on functional and structural imaging. *Eur Child Adolesc Psychiatry* 2015;24(10):1279-89. PMID: 25613588.

Ince Tasdelen B, Karakaya E and Oztop DB. Effects of Atomoxetine and Osmotic Release Oral System-Methylphenidate on Executive Functions in Patients with Combined Type Attention-Deficit/Hyperactivity Disorder. *J Child Adolesc Psychopharmacol* 2015;25(6):494-500. PMID: 26218871.

Ironside S, Davidson F and Corkum P. Circadian motor activity affected by stimulant medication in children with attention-deficit/hyperactivity disorder. *J Sleep Res* 2010;19(4):546-51. PMID: 20629940.

Isaksson J, Nilsson KW and Lindblad F. The Pressure-Activation-Stress scale in relation to ADHD and cortisol. *Eur Child Adolesc Psychiatry* 2015;24(2):153-61. PMID: 24737123.

Iseman JS and Naglieri JA. A cognitive strategy instruction to improve math calculation for children with ADHD and LD: a randomized controlled study. *J Learn Disabil* 2011;44(2):184-95. PMID: 21383109.

Jafari N, Mohammadi MR, Khanbani M, et al. Effect of play therapy on behavioral problems of maladjusted preschool children. *Iran J Psychiatry* 2011;6(1):37-42. PMID: 22952519.

Jafarinia M, Mohammadi MR, Modabbernia A, et al. Bupropion versus methylphenidate in the treatment of children with attention-deficit/hyperactivity disorder: randomized double-blind study. *Hum Psychopharmacol* 2012;27(4):411-8. PMID: 22806822.

Jain R, Babcock T, Burtea T, et al. Efficacy and safety of lisdexamfetamine dimesylate in children with attention-deficit/hyperactivity disorder and recent methylphenidate use. *Adv Ther* 2013;30(5):472-86. PMID: 23681505.

Jain R, Babcock T, Burtea T, et al. Efficacy of lisdexamfetamine dimesylate in children with attention-deficit/hyperactivity disorder previously treated with methylphenidate: a post hoc analysis. *Child Adolesc Psychiatry Ment Health* 2011;5(1):35. PMID: 22054243.

Jain R, Segal S, Kollins SH, et al. Clonidine extended-release tablets for pediatric patients with attention-deficit/hyperactivity disorder. *J Am Acad Child Adolesc Psychiatry* 2011;50(2):171-9. PMID: 21241954.



Janssen M, Wensing M, van der Gaag RJ, et al. Improving patient care for attention deficit hyperactivity disorder in children by organizational redesign (Tornado program) and enhanced collaboration between psychiatry and general practice: a controlled before and after study. *Implement Sci* 2014;9:155. PMID: 25359002.

Jensen LS, Pagsberg AK and Dalhoff KP. Differences in abuse potential of ADHD drugs measured by contrasting poison centre and therapeutic use data. *Clin Toxicol (Phila)* 2015;53(4):210-4. PMID: 25738696.

Johnson KA, Barry E, Lambert D, et al. Methylphenidate side effect profile is influenced by genetic variation in the attention-deficit/hyperactivity disorder-associated CES1 gene. *J Child Adolesc Psychopharmacol* 2013;23(10):655-64. PMID: 24350812.

Johnston C, Weiss MD, Murray C, et al. The effects of instructions on mothers' ratings of attention-deficit/hyperactivity disorder symptoms in referred children. *J Abnorm Child Psychol* 2014;42(3):479-88. PMID: 23963544.

Johnstone SJ, Roodenrys S, Phillips E, et al. A pilot study of combined working memory and inhibition training for children with AD/HD. *Atten Defic Hyperact Disord* 2010;2(1):31-42. PMID: 21432588.

Jonkman LM, Hurks PP and Schleepen TM. Effects of memory strategy training on performance and event-related brain potentials of children with ADHD in an episodic memory task. *Neuropsychol Rehabil* 2015:1-32. PMID: 26251965.

Kahbazi M, Ghoreishi A, Rahiminejad F, et al. A randomized, double-blind and placebo-controlled trial of modafinil in children and adolescents with attention deficit and hyperactivity disorder. *Psychiatry Res* 2009;168(3):234-7. PMID: 19439364.

Kaiser ML, Schoemaker MM, Albaret JM, et al. What is the evidence of impaired motor skills and motor control among children with attention deficit hyperactivity disorder (ADHD)? Systematic review of the literature. *Res Dev Disabil* 2014;36c:338-357. PMID: 25462494.

Katic A, Dirks B, Babcock T, et al. Treatment outcomes with lisdexamfetamine dimesylate in children who have attention-deficit/hyperactivity disorder with emotional control impairments. *J Child Adolesc Psychopharmacol* 2013;23(6):386-93. PMID: 23952185.

Katzmann J, Hautmann C, Greimel L, et al. Behavioral and Nondirective Guided Self-Help for Parents of Children with Externalizing Behavior: Mediating Mechanisms in a Head-To-Head Comparison. *J Abnorm Child Psychol* 2016. PMID: 27488368.

Kean JD, Kaufman J, Lomas J, et al. A Randomized Controlled Trial Investigating the Effects of a Special Extract of *Bacopa monnieri* (CDRI 08) on Hyperactivity and Inattention in Male Children and Adolescents: BACHI Study Protocol (ANZCTRN12612000827831). *Nutrients* 2015;7(12):9931-45. PMID: 26633481.

Kendall L. 'The teacher said I'm thick!' Experiences of children with Attention Deficit Hyperactivity Disorder within a school setting. *Support for Learning* 2016;31(2):122-137.

Kennel S, Taylor AG, Lyon D, et al. Pilot feasibility study of binaural auditory beats for reducing symptoms of inattention in children and adolescents with attention-deficit/hyperactivity disorder. *J Pediatr Nurs* 2010;25(1):3-11. PMID: 20117669.

Keshavarzi Z, Bajoghli H, Mohamadi MR, et al. In a randomized case-control trial with 10-years olds suffering from attention deficit/hyperactivity disorder (ADHD) sleep and psychological functioning improved during a 12-week sleep-training program. *World J Biol Psychiatry* 2014;15(8):609-19. PMID: 24957753.

Khanna D, Shaw J, Dolan M, et al. Does diagnosis affect the predictive accuracy of risk assessment tools for juvenile offenders: Conduct Disorder and Attention Deficit Hyperactivity Disorder. *J Adolesc* 2014;37(7):1171-9. PMID: 25173178.

Kim BN, Kim YN, Cheong US, et al. Switching from methylphenidate-immediate release (MPH-IR) to methylphenidate-OROS (OROS-MPH): A multi-center, open-label study in Korea. *Clinical Psychopharmacology and Neuroscience* 2011;9(1):29-35.

Kim JW, Park S, Kim BN, et al. Parental perceived benefits of OROS-methylphenidate treatment for the child with attention-deficit/hyperactivity disorder and for parents themselves. *Pharmacopsychiatry* 2013;46(4):137-46. PMID: 23364873.

Kim JW, Sharma V and Ryan ND. Predicting Methylphenidate Response in ADHD Using Machine Learning Approaches. *Int J Neuropsychopharmacol* 2015;18(11). PMID: 25964505.

Klein RG, Mannuzza S, Olazagasti MAR, et al. Clinical and functional outcome of childhood attention-deficit/hyperactivity disorder 33 years later. *JAMA Psychiatry* 2012;69(12):1295-1303.

Knebel W, Rogers J, Polhamus D, et al. Modeling and simulation of the exposure-response and dropout pattern of guanfacine extended-release in pediatric patients with ADHD. *J Pharmacokinet Pharmacodyn* 2015;42(1):45-65. PMID: 25373474.

Kollins SH, Jain R, Brams M, et al. Clonidine extended-release tablets as add-on therapy to psychostimulants in children and adolescents with ADHD. *Pediatrics* 2011;127(6):e1406-13. PMID: 21555501.

Kollins SH, Lopez FA, Vince BD, et al. Psychomotor functioning and alertness with guanfacine extended release in subjects with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2011;21(2):111-20. PMID: 21476931.

Kratochvil CJ, Vaughan BS, Stoner JA, et al. A double-blind, placebo-controlled study of atomoxetine in young children with ADHD. *Pediatrics* 2011;127(4):e862-8. PMID: 21422081.

Kratz O, Studer P, Baack J, et al. Differential effects of methylphenidate and atomoxetine on attentional processes in children with ADHD: an event-related potential study using the Attention Network Test. *Prog Neuropsychopharmacol Biol Psychiatry* 2012;37(1):81-9. PMID: 22227291.

- Kray J, Karbach J, Haenig S, et al. Can task-switching training enhance executive control functioning in children with attention deficit/-hyperactivity disorder?. *Front Hum Neurosci* 2011;5:180. PMID: 22291628.
- Kubas HA, Backenson EM, Wilcox G, et al. The effects of methylphenidate on cognitive function in children with attention-deficit/hyperactivity disorder. *Postgrad Med* 2012;124(5):33-48. PMID: 23095424.
- Lachaine J, Beauchemin C, Sasane R, et al. Treatment patterns, adherence, and persistence in ADHD: a Canadian perspective. *Postgrad Med* 2012;124(3):139-48. PMID: 22691908.
- Lamberti M, Italiano D, Guerriero L, et al. Evaluation of acute cardiovascular effects of immediate-release methylphenidate in children and adolescents with attention-deficit hyperactivity disorder. *Neuropsychiatric Disease and Treatment* 2015;11:1169-1174.
- Langberg JM, Epstein JN, Becker SP, et al. Evaluation of the Homework, Organization, and Planning Skills (HOPS) Intervention for Middle School Students with ADHD as Implemented by School Mental Health Providers. *School Psych Rev* 2012;41(3):342-364. PMID: 25355991.
- Langberg JM, Vaughn AJ, Williamson P, et al. Refinement of an Organizational Skills Intervention for Adolescents with ADHD for Implementation by School Mental Health Providers. *School Ment Health* 2011;3(3):143-155. PMID: 23599833.
- Lanzetta-Valdo BP, Oliveira GAD, Ferreira JTC, et al. Auditory Processing Assessment in Children with Attention Deficit Hyperactivity Disorder: An Open Study Examining Methylphenidate Effects. *International Archives of Otorhinolaryngology* 2015.
- Larranaga-Fragoso P, Noval S, Rivero JC, et al. The effects of methylphenidate on refraction and anterior segment parameters in children with attention deficit hyperactivity disorder. *J aapos* 2015;19(4):322-6. PMID: 26235791.
- Larson T, Kerekes N, Selinus EN, et al. Reliability of Autism-Tics, AD/HD, and other Comorbidities (A-TAC) inventory in a test-retest design. *Psychol Rep* 2014;114(1):93-103. PMID: 24765712.
- Lecendreux M, Konofal E, Cortese S, et al. A 4-year follow-up of attention-deficit/hyperactivity disorder in a population sample. *J Clin Psychiatry* 2015;76(6):712-9. PMID: 26132672.
- Lee J, Grizenko N, Bhat V, et al. Relation between therapeutic response and side effects induced by methylphenidate as observed by parents and teachers of children with ADHD. *BMC Psychiatry* 2011;11:70. PMID: 21510895.
- Lee MS, Lee SI, Hong SD, et al. Two different solicitation methods for obtaining information on adverse events associated with methylphenidate in adolescents: a 12-week multicenter, open-label study. *J Child Adolesc Psychopharmacol* 2013;23(1):22-7. PMID: 23347125.
- Lee SH, Seo WS, Sung HM, et al. Effect of methylphenidate on sleep parameters in children with ADHD. *Psychiatry Investig* 2012;9(4):384-90. PMID: 23251204.

Lee SH, Song DH, Kim BN, et al. Variability of response time as a predictor of methylphenidate treatment response in Korean children with attention deficit hyperactivity disorder. *Yonsei Med J* 2009;50(5):650-5. PMID: 19881968.

Levy S, Katusic SK, Colligan RC, et al. Childhood ADHD and risk for substance dependence in adulthood: a longitudinal, population-based study. *PLoS One* 2014;9(8):e105640. PMID: 25162629.

Li L, Yang L, Zhuo CJ, et al. A randomised controlled trial of combined EEG feedback and methylphenidate therapy for the treatment of ADHD. *Swiss Med Wkly* 2013;143:w13838. PMID: 23986461.

Liddle EB, Hollis C, Batty MJ, et al. Task-related default mode network modulation and inhibitory control in ADHD: effects of motivation and methylphenidate. *J Child Psychol Psychiatry* 2011;52(7):761-71. PMID: 21073458.

Liechti MD, Maurizio S, Heinrich H, et al. First clinical trial of tomographic neurofeedback in attention-deficit/hyperactivity disorder: evaluation of voluntary cortical control. *Clin Neurophysiol* 2012;123(10):1989-2005. PMID: 22608481.

Lloyd A, Brett D and Wesnes K. Coherence training in children with attention-deficit hyperactivity disorder: cognitive functions and behavioral changes. *Altern Ther Health Med* 2010;16(4):34-42. PMID: 20653294.

Loh PR, Piek JP and Barrett NC. Comorbid ADHD and DCD: examining cognitive functions using the WISC-IV. *Res Dev Disabil* 2011;32(4):1260-9. PMID: 21377321.

Looyeh MY, Kamali K and Shafieian R. An exploratory study of the effectiveness of group narrative therapy on the school behavior of girls with attention-deficit/hyperactivity symptoms. *Arch Psychiatr Nurs* 2012;26(5):404-10. PMID: 22999036.

Lopez FA, Childress A, Adeyi B, et al. ADHD Symptom Rebound and Emotional Lability With Lisdexamfetamine Dimesylate in Children Aged 6 to 12 Years. *J Atten Disord* 2013. PMID: 23407278.

Lopez FA, Scheckner B and Childress AC. Physician perception of clinical improvement in children with attention-deficit/hyperactivity disorder: a post hoc comparison of lisdexamfetamine dimesylate and mixed amphetamine salts extended release in a crossover analog classroom study. *Neuropsychiatr Dis Treat* 2011;7:267-73. PMID: 21654872.

Luman M, Goos V and Oosterlaan J. Instrumental learning in ADHD in a context of reward: intact learning curves and performance improvement with methylphenidate. *J Abnorm Child Psychol* 2015;43(4):681-91. PMID: 25212229.

Luman M, Papanikolaou A and Oosterlaan J. The Unique and Combined Effects of Reinforcement and Methylphenidate on Temporal Information Processing in Attention-Deficit/Hyperactivity Disorder. *J Clin Psychopharmacol* 2015;35(4):414-21. PMID: 26075486.

Lyon GJ, Samar SM, Conelea C, et al. Testing tic suppression: comparing the effects of dexamethylphenidate to no medication in children and adolescents with attention-deficit/hyperactivity disorder and Tourette's disorder. *J Child Adolesc Psychopharmacol* 2010;20(4):283-9. PMID: 20807066.

Maeir A, Fisher O, Bar-Ilan RT, et al. Effectiveness of Cognitive-Functional (Cog-Fun) occupational therapy intervention for young children with attention deficit hyperactivity disorder: a controlled study. *Am J Occup Ther* 2014;68(3):260-7. PMID: 24797189.

Manos MJ, Caserta DA, Short EJ, et al. Evaluation of the duration of action and comparative effectiveness of lisdexamfetamine dimesylate and behavioral treatment in youth with ADHD in a quasi-naturalistic setting. *Journal of Attention Disorders* 2015;19(7):578-590.

Maric M, van Steensel FJ and Bogels SM. Parental Involvement in CBT for Anxiety-Disordered Youth Revisited: Family CBT Outperforms Child CBT in the Long Term for Children With Comorbid ADHD Symptoms. *J Atten Disord* 2015. PMID: 25755259.

Martenyi F, Zavadenko NN, Jarkova NB, et al. Atomoxetine in children and adolescents with attention-deficit/hyperactivity disorder: a 6-week, randomized, placebo-controlled, double-blind trial in Russia. *Eur Child Adolesc Psychiatry* 2010;19(1):57-66. PMID: 19568826.

Marx AM, Ehlis AC, Furdea A, et al. Near-infrared spectroscopy (NIRS) neurofeedback as a treatment for children with attention deficit hyperactivity disorder (ADHD)-a pilot study. *Front Hum Neurosci* 2014;8:1038. PMID: 25610390.

Matos M, Bauermeister JJ and Bernal G. Parent-child interaction therapy for Puerto Rican preschool children with ADHD and behavior problems: a pilot efficacy study. *Fam Process* 2009;48(2):232-52. PMID: 19579907.

Matsuura N, Ishitobi M, Arai S, et al. Distinguishing between autism spectrum disorder and attention deficit hyperactivity disorder by using behavioral checklists, cognitive assessments, and neuropsychological test battery. *Asian Journal of Psychiatry* 2014;12:50-57.

Matsuura N, Ishitobi M, Arai S, et al. Effects of methylphenidate in children with attention deficit hyperactivity disorder: A near-infrared spectroscopy study with CANTAB®. *Child and Adolescent Psychiatry and Mental Health* 2014;8.

Maurizio S, Liechti MD, Heinrich H, et al. Comparing tomographic EEG neurofeedback and EMG biofeedback in children with attention-deficit/hyperactivity disorder. *Biol Psychol* 2014;95:31-44. PMID: 24211870.

Mazaheri A, Fassbender C, Coffey-Corina S, et al. Differential oscillatory electroencephalogram between attention-deficit/hyperactivity disorder subtypes and typically developing adolescents. *Biological Psychiatry* 2014;76(5):422-429.

Mazzone L, Postorino V, Reale L, et al. Self-esteem evaluation in children and adolescents suffering from ADHD. *Clin Pract Epidemiol Ment Health* 2013;9:96-102. PMID: 23878614.

McAfee AT, Landon J, Jones M, et al. A cohort study of the risk of seizures in a pediatric population treated with atomoxetine or stimulant medications. *Pharmacoepidemiol Drug Saf* 2013;22(4):386-93. PMID: 23280590.

McCracken JT, Badashova KK, Posey DJ, et al. Positive effects of methylphenidate on hyperactivity are moderated by monoaminergic gene variants in children with autism spectrum disorders. *Pharmacogenomics J* 2014;14(3):295-302. PMID: 23856854.

McGough JJ, Greenbaum M, Adeyi B, et al. Sex subgroup analysis of treatment response to lisdexamfetamine dimesylate in children aged 6 to 12 years with attention-deficit/hyperactivity disorder. *Journal of Clinical Psychopharmacology* 2012;32(1):138-140. PMID: 2012-02030-029.

McGough JJ, Loo SK, Sturm A, et al. An eight-week, open-trial, pilot feasibility study of trigeminal nerve stimulation in youth with attention-deficit/hyperactivity disorder. *Brain Stimul* 2015;8(2):299-304. PMID: 25533244.

Medina JA, Netto TL, Muszkat M, et al. Exercise impact on sustained attention of ADHD children, methylphenidate effects. *Atten Defic Hyperact Disord* 2010;2(1):49-58. PMID: 21432590.

Meguid N, Effat S, Hussien H, et al. Role of plasma fatty acids in Egyptian children with attention deficit hyperactivity disorder. *International Journal of Pharmaceutical and Clinical Research* 2016;8(7):671-675.

Meisel V, Servera M, Garcia-Banda G, et al. Neurofeedback and standard pharmacological intervention in ADHD: a randomized controlled trial with six-month follow-up. *Biol Psychol* 2013;94(1):12-21. PMID: 23665196.

Meisel V, Servera M, Garcia-Banda G, et al. Reprint of "Neurofeedback and standard pharmacological intervention in ADHD: a randomized controlled trial with six-month follow-up". *Biol Psychol* 2014;95:116-25. PMID: 24055220.

Menezes A, Dias NM, Trevisan BT, et al. Intervention for executive functions in attention deficit and hyperactivity disorder. *Arq Neuropsiquiatr* 2015;73(3):227-36. PMID: 25807129.

Michellini G, Kitsune GL, Cheung CH, et al. Attention-Deficit/Hyperactivity Disorder Remission Is Linked to Better Neurophysiological Error Detection and Attention-Vigilance Processes. *Biol Psychiatry* 2016. PMID: 27591125.

Mikami AY, Cox DJ, Davis MT, et al. Sex differences in effectiveness of extended-release stimulant medication among adolescents with attention-deficit/hyperactivity disorder. *J Clin Psychol Med Settings* 2009;16(3):233-42. PMID: 19418208.

Mikami AY, Griggs MS, Lerner MD, et al. A randomized trial of a classroom intervention to increase peers' social inclusion of children with attention-deficit/hyperactivity disorder. *J Consult Clin Psychol* 2013;81(1):100-12. PMID: 22866680.

Miranda A, Presentacion MJ, Siegenthaler R, et al. Effects of a psychosocial intervention on the executive functioning in children with ADHD. *J Learn Disabil* 2013;46(4):363-76. PMID: 22064952.

Mitchell TB, Cooley JL, Evans SC, et al. The moderating effect of physical activity on the association between ADHD symptoms and peer victimization in middle childhood. *Child Psychiatry and Human Development* 2016;47(6):871-882.

Miyahara M, Healey DM and Halperin JM. One-week temporal stability of hyperactivity in preschoolers with ADHD during psychometric assessment. *Psychiatry Clin Neurosci* 2014;68(2):120-6. PMID: 24552632.

Mohammadi MR, Hafezi P, Galeiha A, et al. Buspirone versus methylphenidate in the treatment of children with attention- deficit/ hyperactivity disorder: randomized double-blind study. *Acta Med Iran* 2012;50(11):723-8. PMID: 23292622.

Mohammadi MR, Kazemi MR, Zia E, et al. Amantadine versus methylphenidate in children and adolescents with attention deficit/hyperactivity disorder: a randomized, double-blind trial. *Hum Psychopharmacol* 2010;25(7-8):560-5. PMID: 21312290.

Mohammadi MR, Mohammadzadeh S and Akhondzadeh S. Memantine versus methylphenidate in children and adolescents with attention deficit hyperactivity disorder: A double-blind, randomized clinical trial. *Iranian Journal of Psychiatry* 2015;10(2):106-114.

Mohammadi MR, Soleimani AA, Ahmadi N, et al. A Comparison of Effectiveness of Parent Behavioral Management Training and Methylphenidate on Reduction of Symptoms of Attention Deficit Hyperactivity Disorder. *Acta Med Iran* 2016;54(8):503-509. PMID: 27701720.

Mohammadi MR, Soleimani AA, Farahmand Z, et al. A comparison of effectiveness of regulation of working memory function and methylphenidate on remediation of attention deficit hyperactivity disorder (ADHD). *Iran J Psychiatry* 2014;9(1):25-30. PMID: 25561945.

Montoya A, Hervas A, Cardo E, et al. Evaluation of atomoxetine for first-line treatment of newly diagnosed, treatment-naïve children and adolescents with attention deficit/hyperactivity disorder. *Curr Med Res Opin* 2009;25(11):2745-54. PMID: 19785510.

Moreno A, Duno L, Hoekzema E, et al. Striatal volume deficits in children with ADHD who present a poor response to methylphenidate. *Eur Child Adolesc Psychiatry* 2014;23(9):805-12. PMID: 24395136.

Morgan PL, Li H, Cook M, et al. Which Kindergarten Children Are at Greatest Risk for Attention-Deficit/Hyperactivity and Conduct Disorder Symptomatology as Adolescents?. *Sch Psychol Q* 2015. PMID: 26192391.

Moshe K, Karni A and Tirosh E. Anxiety and methylphenidate in attention deficit hyperactivity disorder: a double-blind placebo-drug trial. *Atten Defic Hyperact Disord* 2012;4(3):153-8. PMID: 22622628.

Munkvold LH, Manger T and Lundervold AJ. Conners' continuous performance test (CCPT-II) in children with ADHD, ODD, or a combined ADHD/ODD diagnosis. *Child Neuropsychol* 2014;20(1):106-26. PMID: 23244393.

Munz MT, Prehn-Kristensen A, Thielking F, et al. Slow oscillating transcranial direct current stimulation during non-rapid eye movement sleep improves behavioral inhibition in attention-deficit/hyperactivity disorder. *Front Cell Neurosci* 2015;9:307. PMID: 26321911.

Murray DW, Childress A, Giblin J, et al. Effects of OROS methylphenidate on academic, behavioral, and cognitive tasks in children 9 to 12 years of age with attention-deficit/hyperactivity disorder. *Clin Pediatr (Phila)* 2011;50(4):308-20. PMID: 21436147.

Murrell AR, Steinberg DS, Connally ML, et al. Acting out to ACTing on: A preliminary investigation in youth with ADHD and co-morbid disorders. *Journal of Child and Family Studies* 2015;24(7):2174-2181.

Nagashima M, Monden Y, Dan I, et al. Neuropharmacological effect of atomoxetine on attention network in children with attention deficit hyperactivity disorder during oddball paradigms as assessed using functional near-infrared spectroscopy. *Neurophotonics* 2014;1(2):025007. PMID: 26157979.

Nagashima M, Monden Y, Dan I, et al. Neuropharmacological effect of methylphenidate on attention network in children with attention deficit hyperactivity disorder during oddball paradigms as assessed using functional near-infrared spectroscopy. *Neurophotonics* 2014;1(1):015001. PMID: 26157971.

Nagy P, Hage A, Coghill DR, et al. Functional outcomes from a head-to-head, randomized, double-blind trial of lisdexamfetamine dimesylate and atomoxetine in children and adolescents with attention-deficit/hyperactivity disorder and an inadequate response to methylphenidate. *Eur Child Adolesc Psychiatry* 2015. PMID: 25999292.

Neguț A, Jurma AM and David D. Virtual-reality-based attention assessment of ADHD: ClinicaVR: Classroom-CPT versus a traditional continuous performance test. *Child Neuropsychology* 2016:1-21.

Newcorn JH and Donnelly C. Cardiovascular safety of medication treatments for attention-deficit/hyperactivity disorder. *Mt Sinai J Med* 2009;76(2):198-203. PMID: 19306385.

Newcorn JH, Stein MA and Cooper KM. Dose-response characteristics in adolescents with attention-deficit/hyperactivity disorder treated with OROS methylphenidate in a 4-week, open-label, dose-titration study. *J Child Adolesc Psychopharmacol* 2010;20(3):187-96. PMID: 20578931.

Newcorn JH, Stein MA, Childress AC, et al. Randomized, double-blind trial of guanfacine extended release in children with attention-deficit/hyperactivity disorder: morning or evening administration. *J Am Acad Child Adolesc Psychiatry* 2013;52(9):921-30. PMID: 23972694.



Newcorn JH, Sutton VK, Weiss MD, et al. Clinical responses to atomoxetine in attention-deficit/hyperactivity disorder: the Integrated Data Exploratory Analysis (IDEA) study. *J Am Acad Child Adolesc Psychiatry* 2009;48(5):511-8. PMID: 19318988.

Niederhofer H. Agomelatine treatment with adolescents with ADHD. *J Atten Disord* 2012;16(6):530-2. PMID: 22668524.

Niederhofer H. Treating ADHD with agomelatine. *J Atten Disord* 2012;16(4):346-8. PMID: 22491963.

Ogrim G and Hestad KA. Effects of neurofeedback versus stimulant medication in attention-deficit/hyperactivity disorder: a randomized pilot study. *J Child Adolesc Psychopharmacol* 2013;23(7):448-57. PMID: 23808786.

Ogrim G, Hestad KA, Brunner JF, et al. Predicting acute side effects of stimulant medication in pediatric attention deficit/hyperactivity disorder: data from quantitative electroencephalography, event-related potentials, and a continuous-performance test. *Neuropsychiatr Dis Treat* 2013;9:1301-9. PMID: 24043939.

O'Mahony N, Florentino-Liano B, Carballo JJ, et al. Objective diagnosis of ADHD using IMUs. *Med Eng Phys* 2014;36(7):922-6. PMID: 24657100.

O'Neill S, Schneiderman RL, Rajendran K, et al. Reliable ratings or reading tea leaves: can parent, teacher, and clinician behavioral ratings of preschoolers predict ADHD at age six?. *J Abnorm Child Psychol* 2014;42(4):623-34. PMID: 24085388.

Owens J, Weiss M, Nordbrock E, et al. Effect of Aptensio XR (Methylphenidate HCl Extended-Release) Capsules on Sleep in Children with Attention-Deficit/Hyperactivity Disorder. *J Child Adolesc Psychopharmacol* 2016. PMID: 27754700.

Ozbaran B, Kose S, Yuzuguldu O, et al. Combined methylphenidate and atomoxetine pharmacotherapy in attention deficit hyperactivity disorder. *World Journal of Biological Psychiatry* 2015;16(8):619-624.

Palma SMM, Natale ACMP and Calil HM. A 4-year follow-up study of attention-deficit hyperactivity symptoms, comorbidities, and psychostimulant use in a Brazilian sample of children and adolescents with attention-deficit/hyperactivity disorder. *Frontiers in Psychiatry* 2015;6(OCT).

Park P, Caballero J and Omidian H. Use of serotonin norepinephrine reuptake inhibitors in the treatment of attention-deficit hyperactivity disorder in pediatrics. *Ann Pharmacother* 2014;48(1):86-92. PMID: 24259607.

Park S, Kim BN, Cho SC, et al. Baseline severity of parent-perceived inattentiveness is predictive of the difference between subjective and objective methylphenidate responses in children with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2013;23(6):410-4. PMID: 23952188.

- Park S, Kim BN, Cho SC, et al. The metabotropic glutamate receptor subtype 7 rs3792452 polymorphism is associated with the response to methylphenidate in children with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2014;24(4):223-7. PMID: 24815731.
- Park S, Kim B-N, Kim J-W, et al. Neurotrophin 3 genotype and emotional adverse effects of osmotic-release oral system methylphenidate (OROS-MPH) in children with attention-deficit/hyperactivity disorder. *Journal of Psychopharmacology* 2014;28(3):220-226. PMID: 2014-10977-004.
- Park S, Kim JW, Kim BN, et al. Catechol-O-methyltransferase Val158-Met polymorphism and a response of hyperactive-impulsive symptoms to methylphenidate: A replication study from South Korea. *J Psychopharmacol* 2014;28(7):671-676. PMID: 24763183.
- Pelham WE, Burrows-MacLean L, Gnagy EM, et al. A dose-ranging study of behavioral and pharmacological treatment in social settings for children with ADHD. *J Abnorm Child Psychol* 2014;42(6):1019-31. PMID: 24429997.
- Pelham WE, Jr., Gnagy EM, Sibley MH, et al. Attributions and Perception of Methylphenidate Effects in Adolescents With ADHD. *J Atten Disord* 2013. PMID: 23893533.
- Pelsser LM, Frankena K, Toorman J, et al. A randomised controlled trial into the effects of food on ADHD. *Eur Child Adolesc Psychiatry* 2009;18(1):12-9. PMID: 18431534.
- Pelsser LM, van Steijn DJ, Frankena K, et al. A randomized controlled pilot study into the effects of a restricted elimination diet on family structure in families with ADHD and ODD. *Child and Adolescent Mental Health* 2013;18(1):39-45.
- Percinel I, Yazici KU and Ustundag B. Iron Deficiency Parameters in Children and Adolescents with Attention-Deficit/Hyperactivity Disorder. *Child Psychiatry Hum Dev* 2015. PMID: 26092605.
- Perreau-Linck E, Lessard N, Lévesque J, et al. Effects of neurofeed back training on inhibitory capacities in ADHD children: A single-blind, randomized, placebo-controlled study. *Journal of Neurotherapy* 2010;14(3):229-242.
- Peyre H, Speranza M, Cortese S, et al. Do ADHD children with and without Child Behavior Checklist–Dysregulation Profile have different clinical characteristics, cognitive features, and treatment outcomes?. *Journal of Attention Disorders* 2015;19(1):63-71.
- Pierce D, Katic A, Buckwalter M, et al. Single- and multiple-dose pharmacokinetics of methylphenidate administered as methylphenidate transdermal system or osmotic-release oral system methylphenidate to children and adolescents with attention deficit hyperactivity disorder. *J Clin Psychopharmacol* 2010;30(5):554-64. PMID: 20814325.
- Pontifex MB, Saliba BJ, Raine LB, et al. Exercise improves behavioral, neurocognitive, and scholastic performance in children with attention-deficit/hyperactivity disorder. *J Pediatr* 2013;162(3):543-51. PMID: 23084704.

Posner J, Siciliano F, Wang Z, et al. A multimodal MRI study of the hippocampus in medication-naive children with ADHD: what connects ADHD and depression?. *Psychiatry Res* 2014;224(2):112-8. PMID: 25220159.

Posserud MB, Ullebø AK, Plessen KJ, et al. Influence of assessment instrument on ADHD diagnosis. *European Child and Adolescent Psychiatry* 2014;23(4):197-205.

Power TJ, Mautone JA, Marshall SA, et al. Feasibility and potential effectiveness of integrated services for children with ADHD in urban primary care practices. *Clinical Practice in Pediatric Psychology* 2014;2(4):412-426.

Prehn-Kristensen A, Krauel K, Hinrichs H, et al. Methylphenidate does not improve interference control during a working memory task in young patients with attention-deficit hyperactivity disorder. *Brain Research* 2011;1388:56-68.

Prehn-Kristensen A, Munz M, Goder R, et al. Transcranial oscillatory direct current stimulation during sleep improves declarative memory consolidation in children with attention-deficit/hyperactivity disorder to a level comparable to healthy controls. *Brain Stimul* 2014;7(6):793-9. PMID: 25153776.

Pringsheim T, Hirsch L, Gardner D, et al. The pharmacological management of oppositional behaviour, conduct problems, and Aggression in children and adolescents with Attention-deficit hyperactivity disorder, oppositional defiant disorder, and conduct disorder: A systematic review and meta-analysis. Part 2: Antipsychotics and traditional mood stabilizers. *Canadian Journal of Psychiatry* 2015;60(2):52-61.

Punja S, Nikles CJ, Senior H, et al. Melatonin in Youth: N-of-1 trials in a stimulant-treated ADHD Population (MYNAP): Study protocol for a randomized controlled trial. *Trials* 2016;17(1).

Quantitative electroencephalography as a diagnostic aid for attention-deficit/hyperactivity disorder in children. *Technol Eval Cent Assess Program Exec Summ* 2014;29(1):1-6. PMID: 25577822.

Rajender G, Malhotra S, Bhatia MS, et al. Efficacy of cognitive retraining techniques in children with attention deficit hyperactivity disorder. *German Journal of Psychiatry* 2011;14(2):55-60.

Raman SR, Marshall SW, Haynes K, et al. Stimulant treatment and injury among children with attention deficit hyperactivity disorder: an application of the self-controlled case series study design. *Inj Prev* 2013;19(3):164-70. PMID: 23143347.

Ramtvedt BE, Aabech HS and Sundet K. Minimizing adverse events while maintaining clinical improvement in a pediatric attention-deficit/hyperactivity disorder crossover trial with dextroamphetamine and methylphenidate. *J Child Adolesc Psychopharmacol* 2014;24(3):130-9. PMID: 24666268.

Ramtvedt BE, Roinas E, Aabech HS, et al. Clinical gains from including both dextroamphetamine and methylphenidate in stimulant trials. *J Child Adolesc Psychopharmacol* 2013;23(9):597-604. PMID: 23659360.

Re AM, Capodiceci A and Cornoldi C. Effect of training focused on executive functions (attention, inhibition, and working memory) in preschoolers exhibiting ADHD symptoms. *Frontiers in Psychology* 2015;6.

Rheims S, Herbillon V, Villeneuve N, et al. ADHD in childhood epilepsy: Clinical determinants of severity and of the response to methylphenidate. *Epilepsia* 2016;57(7):1069-77. PMID: 27237724.

Richardson M, Moore DA, Gwernan-Jones R, et al. Non-pharmacological interventions for attention-deficit/hyperactivity disorder (ADHD) delivered in school settings: systematic reviews of quantitative and qualitative research. *Health Technol Assess* 2015;19(45):1-470. PMID: 26129788.

Riggs PD, Winhusen T, Davies RD, et al. Randomized controlled trial of osmotic-release methylphenidate with cognitive-behavioral therapy in adolescents with attention-deficit/hyperactivity disorder and substance use disorders. *J Am Acad Child Adolesc Psychiatry* 2011;50(9):903-14. PMID: 21871372.

Rimvall MK, Elberling H, Rask CU, et al. Predicting ADHD in school age when using the Strengths and Difficulties Questionnaire in preschool age: a longitudinal general population study, CCC2000. *Eur Child Adolesc Psychiatry* 2014;23(11):1051-60. PMID: 24737124.

Robb AS, Findling RL, Childress AC, et al. Efficacy, Safety, and Tolerability of a Novel Methylphenidate Extended-Release Oral Suspension (MEROS) in ADHD. *J Atten Disord* 2014. PMID: 24874348.

Rodriguez C, Gonzalez-Castro P, Cueli M, et al. Attention Deficit/Hyperactivity Disorder (ADHD) Diagnosis: An Activation-Executive Model. *Front Psychol* 2016;7:1406. PMID: 27708600.

Rommel AS, Lichtenstein P, Rydell M, et al. Is Physical Activity Causally Associated With Symptoms of Attention-Deficit/Hyperactivity Disorder?. *J Am Acad Child Adolesc Psychiatry* 2015;54(7):565-70. PMID: 26088661.

Rosch KS, Fosco WD, Pelham WE, Jr., et al. Reinforcement and Stimulant Medication Ameliorate Deficient Response Inhibition in Children with Attention-Deficit/Hyperactivity Disorder. *J Abnorm Child Psychol* 2015. PMID: 25985978.

Rosenberg L, Maeir A, Yochman A, et al. Effectiveness of a cognitive-functional group intervention among preschoolers with attention deficit hyperactivity disorder: A pilot study. *American Journal of Occupational Therapy* 2015;69(3):p1-p8.

Rubia K, Halari R, Cubillo A, et al. Methylphenidate normalises activation and functional connectivity deficits in attention and motivation networks in medication-naive children with

ADHD during a rewarded continuous performance task. *Neuropharmacology* 2009;57(7-8):640-52. PMID: 19715709.

Rubia K, Halari R, Cubillo A, et al. Methylphenidate normalizes fronto-striatal underactivation during interference inhibition in medication-naïve boys with attention-deficit hyperactivity disorder. *Neuropsychopharmacology* 2011;36(8):1575-86. PMID: 21451498.

Ruggiero S, Rafaniello C, Bravaccio C, et al. Safety of attention-deficit/hyperactivity disorder medications in children: an intensive pharmacosurveillance monitoring study. *J Child Adolesc Psychopharmacol* 2012;22(6):415-22. PMID: 23234585.

Rugino TA. Effect on Primary Sleep Disorders When Children With ADHD Are Administered Guanfacine Extended Release. *J Atten Disord* 2014. PMID: 25376194.

Sallee FR, Kollins SH and Wigal TL. Efficacy of guanfacine extended release in the treatment of combined and inattentive only subtypes of attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2012;22(3):206-14. PMID: 22612526.

Sallee FR, McGough J, Wigal T, et al. Guanfacine extended release in children and adolescents with attention-deficit/hyperactivity disorder: a placebo-controlled trial. *J Am Acad Child Adolesc Psychiatry* 2009;48(2):155-65. PMID: 19106767.

Sander C, Arns M, Olbrich S, et al. EEG-vigilance and response to stimulants in paediatric patients with attention deficit/hyperactivity disorder. *Clin Neurophysiol* 2010;121(9):1511-8. PMID: 20382071.

Sanefuji M, Yamashita H, Torisu H, et al. Altered strategy in short-term memory for pictures in children with attention-deficit/hyperactivity disorder: a near-infrared spectroscopy study. *Psychiatry Res* 2014;223(1):37-42. PMID: 24840133.

Santisteban JA, Stein MA, Bergmame L, et al. Effect of extended-release dexamethylphenidate and mixed amphetamine salts on sleep: a double-blind, randomized, crossover study in youth with attention-deficit hyperactivity disorder. *CNS Drugs* 2014;28(9):825-33. PMID: 25056567.

Sasaki T, Hashimoto K, Tachibana M, et al. Tiperidine in children with attention deficit/hyperactivity disorder: a 4-week, open-label, preliminary study. *Neuropsychiatr Dis Treat* 2014;10:147-51. PMID: 24493927.

Schawo S, van der Kolk A, Bouwmans C, et al. Probabilistic Markov Model Estimating Cost Effectiveness of Methylphenidate Osmotic-Release Oral System Versus Immediate-Release Methylphenidate in Children and Adolescents: Which Information is Needed?. *Pharmacoeconomics* 2015;33(5):489-509. PMID: 25715975.

Schelleman H, Bilker WB, Strom BL, et al. Cardiovascular events and death in children exposed and unexposed to ADHD agents. *Pediatrics* 2011;127(6):1102-10. PMID: 21576311.

Schlochtermeyer L, Stoy M, Schlagenhauf F, et al. Childhood methylphenidate treatment of ADHD and response to affective stimuli. *Eur Neuropsychopharmacol* 2011;21(8):646-54. PMID: 20570115.

Schuck SE, Emmerson NA, Fine AH, et al. Canine-assisted therapy for children with ADHD: preliminary findings from the positive assertive cooperative kids study. *J Atten Disord* 2015;19(2):125-37. PMID: 24062278.

Schulz E, Fleischhaker C, Hennighausen K, et al. A double-blind, randomized, placebo/active controlled crossover evaluation of the efficacy and safety of Ritalin (R) LA in children with attention-deficit/hyperactivity disorder in a laboratory classroom setting. *J Child Adolesc Psychopharmacol* 2010;20(5):377-85. PMID: 20973708.

Schulz E, Fleischhaker C, Hennighausen K, et al. A randomized, rater-blinded, crossover study comparing the clinical efficacy of Ritalin((R)) LA (methylphenidate) treatment in children with attention-deficit hyperactivity disorder under different breakfast conditions over 2 weeks. *Atten Defic Hyperact Disord* 2010;2(3):133-8. PMID: 21432599.

Schwartz BS, Bailey-Davis L, Bandeen-Roche K, et al. Attention deficit disorder, stimulant use, and childhood body mass index trajectory. *Pediatrics* 2014;133(4):668-76. PMID: 24639278.

Schwenck C and Freitag CM. Differentiation between attention-deficit/hyperactivity disorder and autism spectrum disorder by the social communication questionnaire. *Atten Defic Hyperact Disord* 2014;6(3):221-9. PMID: 24966019.

Sciberras E, Bisset M, Hazell P, et al. Health-related impairments in young children with ADHD: A community-based study. *Child: Care, Health and Development* 2016;42(5):709-717.

Sciberras E, Lycett K, Efron D, et al. Anxiety in children with attention-deficit/hyperactivity disorder. *Pediatrics* 2014;133(5):801-8. PMID: 24753534.

Sciberras E, Mulraney M, Anderson V, et al. Managing Anxiety in Children With ADHD Using Cognitive-Behavioral Therapy: A Pilot Randomized Controlled Trial. *J Atten Disord* 2015. PMID: 25939582.

Seeley JR, Small JW, Walker HM, et al. Efficacy of the First Step to Success intervention for students with attention-deficit/hyperactivity disorder. *School Mental Health* 2009;1(1):37-48.

Seida JC, Schouten JR, Mousavi SS, et al. AHRQ Comparative Effectiveness Reviews. 2012. PMID: 22439156.

Setyawati J, Yang H, Cheng D, et al. Developing a Risk Score to Guide Individualized Treatment Selection in Attention Deficit/Hyperactivity Disorder. *Value Health* 2015;18(6):824-31. PMID: 26409610.

Shahani SA, Evans WN, Mayman GA, et al. Attention deficit hyperactivity disorder screening electrocardiograms: a community-based perspective. *Pediatr Cardiol* 2014;35(3):485-9. PMID: 24141829.

- Shang CY and Gau SS. Improving visual memory, attention, and school function with atomoxetine in boys with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2012;22(5):353-63. PMID: 23083022.
- Shang CY, Pan YL, Lin HY, et al. An Open-Label, Randomized Trial of Methylphenidate and Atomoxetine Treatment in Children with Attention-Deficit/Hyperactivity Disorder. *J Child Adolesc Psychopharmacol* 2015;25(7):566-73. PMID: 26222447.
- Shaywitz S, Shaywitz B, Wietecha L, et al. Effect of Atomoxetine Treatment on Reading and Phonological Skills in Children with Dyslexia or Attention-Deficit/Hyperactivity Disorder and Comorbid Dyslexia in a Randomized, Placebo-Controlled Trial. *J Child Adolesc Psychopharmacol* 2016. PMID: 27410907.
- Shemmassian SK and Lee SS. Comparing four methods of integrating parent and teacher symptom ratings of attention-deficit/hyperactivity disorder (ADHD). *Journal of Psychopathology and Behavioral Assessment* 2012;34(1):1-10.
- Shin MS, Jeon H, Kim M, et al. Effects of smart-tablet-based neurofeedback training on cognitive function in children with attention problems. *Journal of Child Neurology* 2015;31(6):750-760.
- Sibley MH, Altszuler AR, Morrow AS, et al. Mapping the academic problem behaviors of adolescents with ADHD. *Sch Psychol Q* 2014;29(4):422-37. PMID: 24933215.
- Sibley MH, Pelham Jr WE, Derefinko KJ, et al. A pilot trial of supporting teens' academic needs daily (STAND): A parent-adolescent collaborative intervention for ADHD. *Journal of Psychopathology and Behavioral Assessment* 2013;35(4):436-449.
- Sibley MH, Pelham WE, Evans SW, et al. An Evaluation of a Summer Treatment Program for Adolescents With ADHD. *Cognitive and Behavioral Practice* 2011;18(4):530-544.
- Sigi Hale T, Wiley JF, Smalley SL, et al. A parietal biomarker for ADHD liability: As predicted by the distributed effects perspective model of ADHD. *Frontiers in Psychiatry* 2015;6(MAY).
- Signorovitch J, Erder MH, Xie J, et al. Comparative effectiveness research using matching-adjusted indirect comparison: an application to treatment with guanfacine extended release or atomoxetine in children with attention-deficit/hyperactivity disorder and comorbid oppositional defiant disorder. *Pharmacoepidemiol Drug Saf* 2012;21(Suppl 2):130-7. PMID: 22552988.
- Sikirica V, Findling RL, Signorovitch J, et al. Comparative efficacy of guanfacine extended release versus atomoxetine for the treatment of attention-deficit/hyperactivity disorder in children and adolescents: applying matching-adjusted indirect comparison methodology. *CNS Drugs* 2013;27(11):943-53. PMID: 23975660.
- Sikirica V, Haim Erder M, Xie J, et al. Cost effectiveness of guanfacine extended release as an adjunctive therapy to a stimulant compared with stimulant monotherapy for the treatment of attention-deficit hyperactivity disorder in children and adolescents. *Pharmacoeconomics* 2012;30(8):e1-15. PMID: 22788263.

Silk TJ, Newman DP, Eramudugolla R, et al. Influence of methylphenidate on spatial attention asymmetry in adolescents with attention deficit hyperactivity disorder (ADHD): preliminary findings. *Neuropsychologia* 2014;56:178-83. PMID: 24486422.

Silva RR, Brams M, McCague K, et al. Extended-release dexamethylphenidate 30 mg/d versus 20 mg/d: duration of attention, behavior, and performance benefits in children with attention-deficit/hyperactivity disorder. *Clin Neuropharmacol* 2013;36(4):117-21. PMID: 23860345.

Simonoff E, Taylor E, Baird G, et al. Randomized controlled double-blind trial of optimal dose methylphenidate in children and adolescents with severe attention deficit hyperactivity disorder and intellectual disability. *J Child Psychol Psychiatry* 2013;54(5):527-35. PMID: 22676856.

Siu AFY and Zhou Y. Behavioral Assessment of the Dysexecutive Syndrome for Children: An examination of clinical utility for children with attention-deficit hyperactivity disorder (ADHD). *Journal of Child Neurology* 2014;29(5):608-616.

Sjowall D, Bohlin G, Rydell AM, et al. Neuropsychological deficits in preschool as predictors of ADHD symptoms and academic achievement in late adolescence. *Child Neuropsychol* 2015:1-18. PMID: 26212755.

Skogan AH, Zeiner P, Egeland J, et al. Parent ratings of executive function in young preschool children with symptoms of attention-deficit/-hyperactivity disorder. *Behav Brain Funct* 2015;11:16. PMID: 25889243.

Slama H, Fery P, Verheulpen D, et al. Cognitive Improvement of Attention and Inhibition in the Late Afternoon in Children With Attention-Deficit Hyperactivity Disorder (ADHD) Treated With Osmotic-Release Oral System Methylphenidate. *J Child Neurol* 2015;30(8):1000-9. PMID: 25296928.

Smith A, Cubillo A, Barrett N, et al. Neurofunctional effects of methylphenidate and atomoxetine in boys with attention-deficit/hyperactivity disorder during time discrimination. *Biol Psychiatry* 2013;74(8):615-22. PMID: 23731741.

Snircova E, Hrtanek I, Kulhan T, et al. Atomoxetine and methylphenidate treatment in ADHD. *Acta Medica Martiniana* 2015;15(1):20-26.

Socanski D, Aurlien D, Herigstad A, et al. Attention deficit/hyperactivity disorder and interictal epileptiform discharges: it is safe to use methylphenidate?. *Seizure* 2015;25:80-3. PMID: 25645642.

Solanto M, Newcorn J, Vail L, et al. Stimulant drug response in the predominantly inattentive and combined subtypes of attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2009;19(6):663-71. PMID: 20035584.

Song DH, Choi S, Joung YS, et al. Titrating Optimal Dose of Osmotic-Controlled Release Oral Delivery (OROS)-Methylphenidate and Its Efficacy and Safety in Korean Children with ADHD: A Multisite Open Labeled Study. *Psychiatry Investig* 2012;9(3):257-62. PMID: 22993525.



Sonnby K, Skordas K, Olofsdotter S, et al. Validation of the World Health Organization Adult ADHD Self-Report Scale for adolescents. *Nord J Psychiatry* 2015;69(3):216-23. PMID: 25348323.

Soutullo C, Banaschewski T, Lecendreux M, et al. A post hoc comparison of the effects of lisdexamfetamine dimesylate and osmotic-release oral system methylphenidate on symptoms of attention-deficit hyperactivity disorder in children and adolescents. *CNS Drugs* 2013;27(9):743-51. PMID: 23801529.

Spencer TJ, Greenbaum M, Ginsberg LD, et al. Safety and effectiveness of coadministration of guanfacine extended release and psychostimulants in children and adolescents with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2009;19(5):501-10. PMID: 19877974.

Sprich SE, Burbridge J, Lerner JA, et al. Cognitive-behavioral therapy for ADHD in adolescents: Clinical considerations and a case series. *Cognitive and Behavioral Practice* 2015;22(2):116-126.

Sprich SE, Safren SA, Finkelstein D, et al. A randomized controlled trial of cognitive behavioral therapy for ADHD in medication-treated adolescents. *J Child Psychol Psychiatry* 2016. PMID: 26990084.

Steenhuis MP, Serra M, Minderaa RB, et al. An Internet version of the Diagnostic Interview Schedule for Children (DISC-IV): correspondence of the ADHD section with the paper-and-pencil version. *Psychol Assess* 2009;21(2):231-4. PMID: 19485678.

Stein MA, Sikirica V, Weiss MD, et al. Does Guanfacine Extended Release Impact Functional Impairment in Children with Attention-Deficit/Hyperactivity Disorder? Results from a Randomized Controlled Trial. *CNS Drugs* 2015. PMID: 26547425.

Stein MA, Waldman I, Newcorn J, et al. Dopamine transporter genotype and stimulant dose-response in youth with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2014;24(5):238-44. PMID: 24813374.

Stein MA, Waldman ID, Charney E, et al. Dose effects and comparative effectiveness of extended release dexamethylphenidate and mixed amphetamine salts. *J Child Adolesc Psychopharmacol* 2011;21(6):581-8. PMID: 22136094.

Steiner NJ, Sheldrick RC, Gotthelf D, et al. Computer-based attention training in the schools for children with attention deficit/hyperactivity disorder: a preliminary trial. *Clin Pediatr (Phila)* 2011;50(7):615-22. PMID: 21561933.

Steinhausen HC and Bisgaard C. Substance use disorders in association with attention-deficit/hyperactivity disorder, co-morbid mental disorders, and medication in a nationwide sample. *Eur Neuropsychopharmacol* 2014;24(2):232-41. PMID: 24314850.

Storebo OJ, Skoog M, Rasmussen PD, et al. Attachment Competences in Children With ADHD During the Social-Skills Training and Attachment (SOSTRA) Randomized Clinical Trial. *J Atten Disord* 2015;19(10):865-71. PMID: 24532801.

- Strand MT, Hawk LW, Jr., Bubnik M, et al. Improving working memory in children with attention-deficit/hyperactivity disorder: the separate and combined effects of incentives and stimulant medication. *J Abnorm Child Psychol* 2012;40(7):1193-207. PMID: 22477205.
- Su Y, Yang L, Stein MA, et al. Osmotic Release Oral System Methylphenidate Versus Atomoxetine for the Treatment of Attention-Deficit/Hyperactivity Disorder in Chinese Youth: 8-Week Comparative Efficacy and 1-Year Follow-Up. *J Child Adolesc Psychopharmacol* 2016;26(4):362-71. PMID: 26779845.
- Svanborg P, Thernlund G, Gustafsson PA, et al. Atomoxetine improves patient and family coping in attention deficit/hyperactivity disorder: a randomized, double-blind, placebo-controlled study in Swedish children and adolescents. *Eur Child Adolesc Psychiatry* 2009;18(12):725-35. PMID: 19466476.
- Svanborg P, Thernlund G, Gustafsson PA, et al. Efficacy and safety of atomoxetine as add-on to psychoeducation in the treatment of attention deficit/hyperactivity disorder: a randomized, double-blind, placebo-controlled study in stimulant-naive Swedish children and adolescents. *Eur Child Adolesc Psychiatry* 2009;18(4):240-9. PMID: 19156355.
- Symmes A, Winters KC, Fahnhorst T, et al. The Association Between Attention-Deficit Hyperactivity Disorder and Nicotine Use Among Adolescents and Young Adults. *J Child Adolesc Subst Abuse* 2015;24(1):37-45. PMID: 25632218.
- Takahashi J, Yasumura A, Nakagawa E, et al. Changes in negative and positive EEG shifts during slow cortical potential training in children with attention-deficit/hyperactivity disorder: A preliminary investigation. *NeuroReport: For Rapid Communication of Neuroscience Research* 2014;25(8):618-624. PMID: 2014-17071-013.
- Takahashi M, Takita Y, Yamazaki K, et al. A randomized, double-blind, placebo-controlled study of atomoxetine in Japanese children and adolescents with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2009;19(4):341-50. PMID: 19702486.
- Ter-Stepanian M, Grizenko N, Zappitelli M, et al. Clinical response to methylphenidate in children diagnosed with attention-deficit hyperactivity disorder and comorbid psychiatric disorders. *Can J Psychiatry* 2010;55(5):305-12. PMID: 20482957.
- Teuscher NS, Adjei A, Findling RL, et al. Population pharmacokinetics of methylphenidate hydrochloride extended-release multiple-layer beads in pediatric subjects with attention deficit hyperactivity disorder. *Drug Des Devel Ther* 2015;9:2767-75. PMID: 26060393.
- Thompson MJ, Laver-Bradbury C, Ayres M, et al. A small-scale randomized controlled trial of the revised new forest parenting programme for preschoolers with attention deficit hyperactivity disorder. *Eur Child Adolesc Psychiatry* 2009;18(10):605-16. PMID: 19404717.
- Thurstone C, Riggs PD, Salomonsen-Sautel S, et al. Randomized, controlled trial of atomoxetine for attention-deficit/hyperactivity disorder in adolescents with substance use disorder. *J Am Acad Child Adolesc Psychiatry* 2010;49(6):573-82. PMID: 20494267.

Timler GR. Use of the Children's Communication Checklist-2 for classification of language impairment risk in young school-age children with attention-deficit/hyperactivity disorder. *Am J Speech Lang Pathol* 2014;23(1):73-83. PMID: 24018696.

Toufic Seblany H, Ștefania Dinu I, Safer M, et al. Pharmacological treatment in stabilizing the symptoms in children with ADHD symptoms. *Farmacacia* 2013;61(5):1000-1008.

Tramontina S, Zeni CP, Ketzer CR, et al. Aripiprazole in children and adolescents with bipolar disorder comorbid with attention-deficit/hyperactivity disorder: a pilot randomized clinical trial. *J Clin Psychiatry* 2009;70(5):756-64. PMID: 19389329.

Tse YJ, McCarty CA, Stoep AV, et al. Teletherapy delivery of caregiver behavior training for children with attention-deficit hyperactivity disorder. *Telemed J E Health* 2015;21(6):451-8. PMID: 25719609.

Tsheringla S, Simon A, Russell PS, et al. ADD-H-Comprehensive Teacher's Rating Scale (ACTeRS): a measure for attention deficit hyperactivity disorder among children with intellectual disability in India. *Indian J Pediatr* 2014;81(Suppl 2):S161-4. PMID: 25265891.

Tucha O, Tucha L, Kaumann G, et al. Training of attention functions in children with attention deficit hyperactivity disorder. *Atten Defic Hyperact Disord* 2011;3(3):271-83. PMID: 21597880.

Umar MU, Obindo JT and Omigbodun OO. Prevalence and Correlates of ADHD Among Adolescent Students in Nigeria. *J Atten Disord* 2015. PMID: 26220786.

Upadhyaya H, Kratochvil C, Ghuman J, et al. Efficacy and Safety Extrapolation Analyses for Atomoxetine in Young Children with Attention-Deficit/Hyperactivity Disorder. *J Child Adolesc Psychopharmacol* 2014. PMID: 25265343.

van de Weijer-Bergsma E, Formsma AR, Bruin EI, et al. The effectiveness of mindfulness training on behavioral problems and attentional functioning in adolescents with ADHD. *Journal of Child and Family Studies* 2012;21(5):775-787.

van den Ban EF, Souverein PC, van Engeland H, et al. Differences in ADHD medication usage patterns in children and adolescents from different cultural backgrounds in the Netherlands. *Soc Psychiatry Psychiatr Epidemiol* 2015;50(7):1153-62. PMID: 26017546.

van den Hoofdakker BJ, Hoekstra PJ, van der Veen-Mulders L, et al. Paternal influences on treatment outcome of behavioral parent training in children with attention-deficit/hyperactivity disorder. *Eur Child Adolesc Psychiatry* 2014;23(11):1071-9. PMID: 24878676.

van der Donk ML, Hiemstra-Beernink AC, Tjeenk-Kalff AC, et al. Interventions to improve executive functioning and working memory in school-aged children with AD(H)D: a randomised controlled trial and stepped-care approach. *BMC Psychiatry* 2013;13:23. PMID: 23311304.

van der Kolk A, Bouwmans CA, Schawo SJ, et al. Association between quality of life and treatment response in children with attention Deficit Hyperactivity Disorder and their parents. *J Ment Health Policy Econ* 2014;17(3):119-29. PMID: 25543115.

van der Oord S, Ponsioen AJ, Geurts HM, et al. A pilot study of the efficacy of a computerized executive functioning remediation training with game elements for children with ADHD in an outpatient setting: outcome on parent- and teacher-rated executive functioning and ADHD behavior. *J Atten Disord* 2014;18(8):699-712. PMID: 22879577.

van der Oord S, Prins PJ, Oosterlaan J, et al. The adolescent outcome of children with attention deficit hyperactivity disorder treated with methylphenidate or methylphenidate combined with multimodal behaviour therapy: results of a naturalistic follow-up study. *Clin Psychol Psychother* 2012;19(3):270-8. PMID: 21404369.

Van Der Schans J, Kotsopoulos N, Hoekstra PJ, et al. Cost-effectiveness of extended-release methylphenidate in children and adolescents with attention-deficit/hyperactivity disorder sub-optimally treated with immediate release methylphenidate. *PLoS ONE* 2015;10(5).

van Dongen-Boomsma M, Vollebregt MA, Slaats-Willemse D, et al. A randomized placebo-controlled trial of electroencephalographic (EEG) neurofeedback in children with attention-deficit/hyperactivity disorder. *J Clin Psychiatry* 2013;74(8):821-7. PMID: 24021501.

van Rooij D, Hoekstra PJ, Mennes M, et al. Distinguishing Adolescents With ADHD From Their Unaffected Siblings and Healthy Comparison Subjects by Neural Activation Patterns During Response Inhibition. *Am J Psychiatry* 2015;172(7):674-83. PMID: 25615565.

Vander Stoep A and Myers K. Methodology for conducting the children's attention-deficit hyperactivity disorder telemental health treatment study in multiple underserved communities. *Clin Trials* 2013;10(6):949-58. PMID: 23897950.

Vaughn AJ and Hoza B. The incremental utility of behavioral rating scales and a structured diagnostic interview in the assessment of attention-deficit/hyperactivity disorder. *Journal of Emotional and Behavioral Disorders* 2013;21(4):227-239. PMID: 2013-38804-001.

Verkuijl N, Perkins M and Fazel M. Childhood attention-deficit/hyperactivity disorder. *Bmj* 2015;350:h2168. PMID: 25994532.

Vigliano P, Galloni GB, Bagnasco I, et al. Sleep in children with attention-deficit/hyperactivity disorder (ADHD) before and after 6-month treatment with methylphenidate: a pilot study. *European Journal of Pediatrics* 2016;175(5):695-704.

Villemonteix T, De Brito SA, Kavec M, et al. Grey matter volumes in treatment naive vs. chronically treated children with attention deficit/hyperactivity disorder: a combined approach. *Eur Neuropsychopharmacol* 2015;25(8):1118-27. PMID: 25934396.

Vogt C and Shameli A. Assessments for attention-deficit hyperactivity disorder: Use of objective measurements. *Psychiatrist* 2011;35(10):380-383.

Vollebregt MA, van Dongen-Boomsma M, Buitelaar JK, et al. Does EEG-neurofeedback improve neurocognitive functioning in children with attention-deficit/hyperactivity disorder? A systematic review and a double-blind placebo-controlled study. *J Child Psychol Psychiatry* 2014;55(5):460-72. PMID: 24168522.

Wagner DJ, Vallerand IA and McLennan JD. Treatment receipt and outcomes from a clinic employing the attention-deficit/hyperactivity disorder treatment guideline of the children's medication algorithm project. *J Child Adolesc Psychopharmacol* 2014;24(9):472-80. PMID: 25329880.

Wang LJ, Hsiao CC, Huang YS, et al. Association of salivary dehydroepiandrosterone levels and symptoms in patients with attention deficit hyperactivity disorder during six months of treatment with methylphenidate. *Psychoneuroendocrinology* 2011;36(8):1209-16. PMID: 21411231.

Waxmonsky JG, Waschbusch DA, Akinnusi O, et al. A comparison of atomoxetine administered as once versus twice daily dosing on the school and home functioning of children with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2011;21(1):21-32. PMID: 21288121.

Waxmonsky JG, Waschbusch DA, Pelham WE, et al. Effects of atomoxetine with and without behavior therapy on the school and home functioning of children with attention-deficit/hyperactivity disorder. *J Clin Psychiatry* 2010;71(11):1535-51. PMID: 20673557.

Waxmonsky JG, Wymbs FA, Pariseau ME, et al. A novel group therapy for children with ADHD and severe mood dysregulation. *J Atten Disord* 2013;17(6):527-41. PMID: 22373865.

Weaver L, Rostain AL, Mace W, et al. Transcranial magnetic stimulation (TMS) in the treatment of attention-deficit/hyperactivity disorder in adolescents and young adults: a pilot study. *J ect* 2012;28(2):98-103. PMID: 22551775.

Wehmeier PM, Dittmann RW, Banaschewski T, et al. Does stimulant pretreatment modify atomoxetine effects on core symptoms of ADHD in children assessed by quantitative measurement technology?. *J Atten Disord* 2014;18(2):105-16. PMID: 22617861.

Wehmeier PM, Kipp L, Banaschewski T, et al. Does comorbid disruptive behavior modify the effects of atomoxetine on ADHD symptoms as measured by a continuous performance test and a motion tracking device?. *Journal of Attention Disorders* 2015;19(7):591-602. PMID: 2015-29687-004.

Wehmeier PM, Schacht A, Dittmann RW, et al. Effect of atomoxetine on quality of life and family burden: results from a randomized, placebo-controlled, double-blind study in children and adolescents with ADHD and comorbid oppositional defiant or conduct disorder. *Qual Life Res* 2011;20(5):691-702. PMID: 21136299.

Wehmeier PM, Schacht A, Escobar R, et al. Health-related quality of life in ADHD: a pooled analysis of gender differences in five atomoxetine trials. *Atten Defic Hyperact Disord* 2012;4(1):25-35. PMID: 22271466.

Wehmeier PM, Schacht A, Ulberstad F, et al. Does atomoxetine improve executive function, inhibitory control, and hyperactivity? Results from a placebo-controlled trial using quantitative measurement technology. *J Clin Psychopharmacol* 2012;32(5):653-60. PMID: 22926599.

Wehmeier PM, Schacht A, Wolff C, et al. Neuropsychological outcomes across the day in children with attention-deficit/hyperactivity disorder treated with atomoxetine: results from a placebo-controlled study using a computer-based continuous performance test combined with an infra-red motion-tracking device. *J Child Adolesc Psychopharmacol* 2011;21(5):433-44. PMID: 22040189.

Weisler RH, Adler LA, Kollins SH, et al. Analysis of individual items on the attention-deficit/hyperactivity disorder symptom rating scale in children and adults: the effects of age and sex in pivotal trials of lisdexamfetamine dimesylate. *Neuropsychiatr Dis Treat* 2014;10:1-12. PMID: 24363557.

Weiss M, Panagiotopoulos C, Giles L, et al. A naturalistic study of predictors and risks of atypical antipsychotic use in an attention-deficit/hyperactivity disorder clinic. *J Child Adolesc Psychopharmacol* 2009;19(5):575-82. PMID: 19877982.

Wentz E, Nyden A and Krevers B. Development of an internet-based support and coaching model for adolescents and young adults with ADHD and autism spectrum disorders: a pilot study. *Eur Child Adolesc Psychiatry* 2012;21(11):611-22. PMID: 22736195.

Whalen CK, Henker B, Ishikawa SS, et al. Atomoxetine versus stimulants in the community treatment of children with ADHD: an electronic diary study. *J Atten Disord* 2010;13(4):391-400. PMID: 19474461.

Wiesner M, Windle M, Kanouse DE, et al. DISC Predictive Scales (DPS): Factor Structure and Uniform Differential Item Functioning Across Gender and Three Racial/Ethnic Groups for ADHD, Conduct Disorder, and Oppositional Defiant Disorder Symptoms. *Psychol Assess* 2015. PMID: 25774639.

Wietecha L, Williams D, Shaywitz S, et al. Atomoxetine improved attention in children and adolescents with attention-deficit/hyperactivity disorder and dyslexia in a 16 week, acute, randomized, double-blind trial. *J Child Adolesc Psychopharmacol* 2013;23(9):605-13. PMID: 24206099.

Wietecha LA, Ruff DD, Allen AJ, et al. Atomoxetine tolerability in pediatric and adult patients receiving different dosing strategies. *J Clin Psychiatry* 2013;74(12):1217-23. PMID: 24434090.

Wigal SB, Childress AC, Belden HW, et al. NWP06, an extended-release oral suspension of methylphenidate, improved attention-deficit/hyperactivity disorder symptoms compared with placebo in a laboratory classroom study. *J Child Adolesc Psychopharmacol* 2013;23(1):3-10. PMID: 23289899.

Wigal SB, Greenhill LL, Nordbrock E, et al. A randomized placebo-controlled double-blind study evaluating the time course of response to methylphenidate hydrochloride extended-release capsules in children with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2014;24(10):562-9. PMID: 25470572.

Wigal SB, Jun A, Wong AA, et al. Does prior exposure to stimulants in children with ADHD impact cardiovascular parameters from lisdexamfetamine dimesylate?. *Postgrad Med* 2010;122(5):27-34. PMID: 20861585.

Wigal SB, Kollins SH, Childress AC, et al. A 13-hour laboratory school study of lisdexamfetamine dimesylate in school-aged children with attention-deficit/hyperactivity disorder. *Child Adolesc Psychiatry Ment Health* 2009;3(1):17. PMID: 19508731.

Wigal SB, Kollins SH, Childress AC, et al. Efficacy and tolerability of lisdexamfetamine dimesylate in children with attention-deficit/hyperactivity disorder: sex and age effects and effect size across the day. *Child Adolesc Psychiatry Ment Health* 2010;4:32. PMID: 21156071.

Wigal SB, Nordbrock E, Adjei AL, et al. Efficacy of Methylphenidate Hydrochloride Extended-Release Capsules (Aptensio XR) in Children and Adolescents with Attention-Deficit/Hyperactivity Disorder: A Phase III, Randomized, Double-Blind Study. *CNS Drugs* 2015;29(4):331-40. PMID: 25877989.

Wigal SB, Wigal T, Schuck S, et al. Academic, behavioral, and cognitive effects of OROS(R) methylphenidate on older children with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2011;21(2):121-31. PMID: 21488750.

Wigal SB, Wong AA, Jun A, et al. Adverse events in medication treatment-naive children with attention-deficit/hyperactivity disorder: results from a small, controlled trial of lisdexamfetamine dimesylate. *J Child Adolesc Psychopharmacol* 2012;22(2):149-56. PMID: 22372513.

Wilens TE, Bukstein O, Brams M, et al. A controlled trial of extended-release guanfacine and psychostimulants for attention-deficit/hyperactivity disorder. *J Am Acad Child Adolesc Psychiatry* 2012;51(1):74-85.e2. PMID: 22176941.

Wilens TE, Gault LM, Childress A, et al. Safety and efficacy of ABT-089 in pediatric attention-deficit/hyperactivity disorder: results from two randomized placebo-controlled clinical trials. *J Am Acad Child Adolesc Psychiatry* 2011;50(1):73-84.e1. PMID: 21156272.

Wilens TE, Hammerness P, Martelon M, et al. A controlled trial of the methylphenidate transdermal system on before-school functioning in children with attention-deficit/hyperactivity disorder. *J Clin Psychiatry* 2010;71(5):548-56. PMID: 20492851.

Wilens TE, Hammerness P, Utzinger L, et al. An open study of adjunct OROS-methylphenidate in children and adolescents who are atomoxetine partial responders: I. Effectiveness. *J Child Adolesc Psychopharmacol* 2009;19(5):485-92. PMID: 19877972.

Wilens TE, McBurnett K, Turnbow J, et al. Morning and Evening Effects of Guanfacine Extended Release Adjunctive to Psychostimulants in Pediatric ADHD: Results From a Phase III Multicenter Trial. *J Atten Disord* 2013. PMID: 24071772.

Wilens TE, Robertson B, Sikirica V, et al. A Randomized, Placebo-Controlled Trial of Guanfacine Extended Release in Adolescents With Attention-Deficit/Hyperactivity Disorder. *J Am Acad Child Adolesc Psychiatry* 2015;54(11):916-925.e2. PMID: 26506582.

Wilkes S, Cordier R, Bundy A, et al. A play-based intervention for children with ADHD: a pilot study. *Aust Occup Ther J* 2011;58(4):231-40. PMID: 21770958.

Wilkes-Gillan S, Bundy A, Cordier R, et al. Eighteen-month follow-up of a play-based intervention to improve the social play skills of children with attention deficit hyperactivity disorder. *Aust Occup Ther J* 2014;61(5):299-307. PMID: 24762264.

Williamson D, Murray DW, Damaraju CV, et al. Methylphenidate in children with ADHD with or without learning disability. *J Atten Disord* 2014;18(2):95-104. PMID: 22628142.

Wills HP and Mason BA. Implementation of a self-monitoring application to improve on-task behavior: A high-school pilot study. *Journal of Behavioral Education* 2014;23(4):421-434.

Winter W and Sheridan M. Previous reward decreases errors of commission on later 'No-Go' trials in children 4 to 12 years of age: Evidence for a context monitoring account. *Developmental Science* 2014;17(5):797-807.

Winterstein AG, Gerhard T, Kubilis P, et al. Cardiovascular safety of central nervous system stimulants in children and adolescents: population based cohort study. *Bmj* 2012;345:e4627. PMID: 22809800.

Wolraich ML, Bard DE, Neas B, et al. The psychometric properties of the Vanderbilt attention-deficit hyperactivity disorder diagnostic teacher rating scale in a community population. *J Dev Behav Pediatr* 2013;34(2):83-93. PMID: 23363973.

Wong CG and Stevens MC. The effects of stimulant medication on working memory functional connectivity in attention-deficit/hyperactivity disorder. *Biol Psychiatry* 2012;71(5):458-66. PMID: 22209640.

Woodruff DB, El-Mallakh RS and Thiruvengadam AP. A potential diagnostic blood test for attention deficit hyperactivity disorder. *Atten Defic Hyperact Disord* 2011;3(3):265-9. PMID: 21523444.

Wrońska N, Garcia-Zapirain B and Mendez-Zorrilla A. An iPad-based tool for improving the skills of children with attention deficit disorder. *International Journal of Environmental Research and Public Health* 2015;12(6):6261-6280.

Xiaoli Y, Chao J, Wen P, et al. Prevalence of psychiatric disorders among children and adolescents in northeast China. *PLoS One* 2014;9(10):e111223. PMID: 25360718.

Xie Y, Dixon JF, Yee OM, et al. A study on the effectiveness of videoconferencing on teaching parent training skills to parents of children with ADHD. *Telemed J E Health* 2013;19(3):192-9. PMID: 23405952.

Yang L, Cao Q, Shuai L, et al. Comparative study of OROS-MPH and atomoxetine on executive function improvement in ADHD: a randomized controlled trial. *Int J Neuropsychopharmacol* 2012;15(1):15-26. PMID: 22017969.



Yang R, Gao W, Li R, et al. Effect of Atomoxetine on the Cognitive Functions in Treatment of Attention Deficit Hyperactivity Disorder in Children with Congenital Hypothyroidism: A Pilot Study. *Int J Neuropsychopharmacol* 2015;18(8). PMID: 25896257.

Yazd SN, Ayatizadeh F, Dehghan F, et al. Comparing the effects of drug therapy, perceptual motor training, and both combined on the motor skills of school-aged attention deficit hyperactivity disorder children. *CNS Neurol Disord Drug Targets* 2015. PMID: 26556079.

Yildiz O, Sismanlar SG, Memik NC, et al. Atomoxetine and methylphenidate treatment in children with ADHD: the efficacy, tolerability and effects on executive functions. *Child Psychiatry Hum Dev* 2011;42(3):257-69. PMID: 21165694.

Young J, Rugino T, Dammerman R, et al. Efficacy of guanfacine extended release assessed during the morning, afternoon, and evening using a modified Conners' Parent Rating Scale-revised: Short Form. *J Child Adolesc Psychopharmacol* 2014;24(8):435-41. PMID: 25286026.

Yousefi Chaijan P, Sharafkhah M, Salehi B, et al. Attention deficit hyperactivity disorder in children with early stages of chronic kidney disease. *Med J Islam Repub Iran* 2015;29:181. PMID: 26034734.

Zarinara AR, Mohammadi MR, Hazrati N, et al. Venlafaxine versus methylphenidate in pediatric outpatients with attention deficit hyperactivity disorder: a randomized, double-blind comparison trial. *Hum Psychopharmacol* 2010;25(7-8):530-5. PMID: 20860068.

Zeni CP, Tramontina S, Ketzer CR, et al. Methylphenidate combined with aripiprazole in children and adolescents with bipolar disorder and attention-deficit/hyperactivity disorder: a randomized crossover trial. *J Child Adolesc Psychopharmacol* 2009;19(5):553-61. PMID: 19877980.

Zheng Y, Wang YF, Qin J, et al. Prospective, naturalistic study of open-label OROS methylphenidate treatment in Chinese school-aged children with attention-deficit/hyperactivity disorder. *Chin Med J (Engl)* 2011;124(20):3269-74. PMID: 22088519.

Ziereis S and Jansen P. Effects of physical activity on executive function and motor performance in children with ADHD. *Res Dev Disabil* 2015;38:181-91. PMID: 25561359.

## **Does Not Report Data for a Study Population of Interest**

Adler LA, Shaw DM, Spencer TJ, et al. Preliminary reliability and validity of a new time-sensitive ADHD symptom scale in adolescents with ADHD. *Postgrad Med* 2011;123(5):7-13. PMID: 21904082.

Aghebati A, Gharraee B, Hakim Shoshtari M, et al. Triple p-positive parenting program for mothers of ADHD children. *Iran J Psychiatry Behav Sci* 2014;8(1):59-65. PMID: 24995031.

Algorta GP, Dodd AL, Stringaris A, et al. Diagnostic efficiency of the SDQ for parents to identify ADHD in the UK: a ROC analysis. *Eur Child Adolesc Psychiatry* 2016. PMID: 26762184.

Alqaryouti IA, Abu Hilar MM and Ibrahim MM. Validity and reliability of an attention deficit and hyperactivity disorder measure among a sample of Omani children. *Electronic Journal of Research in Educational Psychology* 2011;9(2):911-930.

Aman MG, Bukstein OG, Gadow KD, et al. What does risperidone add to parent training and stimulant for severe aggression in child attention-deficit/hyperactivity disorder?. *J Am Acad Child Adolesc Psychiatry* 2014;53(1):47-60.e1. PMID: 24342385.

Anastopoulos AD and King KA. A Cognitive-Behavior Therapy and Mentoring Program for College Students With ADHD. *Cognitive and Behavioral Practice* 2015;22(2):141-151.

Arnold LE, Gadow KD, Farmer CA, et al. Comorbid anxiety and social avoidance in treatment of severe childhood aggression: response to adding risperidone to stimulant and parent training; mediation of disruptive symptom response. *J Child Adolesc Psychopharmacol* 2015;25(3):203-12. PMID: 25885010.

Azevedo AF, Seabra-Santos MJ, Gaspar MF, et al. The Incredible Years Basic Parent Training for Portuguese preschoolers with AD/HD behaviors: Does it make a difference?. *Child & Youth Care Forum* 2013;42(5):403-424..

Barnard-Brak L, To YM and Fearon DD. Protopathic stimulant use among children with symptoms of ADHD. *Atten Defic Hyperact Disord* 2011;3(3):245-51. PMID: 21452045.

Baskin BM, Dwoskin LP and Kantak KM. Methylphenidate treatment beyond adolescence maintains increased cocaine self-administration in the spontaneously hypertensive rat model of attention deficit/hyperactivity disorder. *Pharmacol Biochem Behav* 2015;131:51-6. PMID: 25643872.

Batzle CS, Weyandt LL, Janusis GM, et al. Potential impact of ADHD with stimulant medication label on teacher expectations. *Journal of Attention Disorders* 2010;14(2):157-166.

Bledsoe JC, Xiao D, Chaovalitwongse A, et al. Diagnostic Classification of ADHD Versus Control: Support Vector Machine Classification Using Brief Neuropsychological Assessment. *J Atten Disord* 2016. PMID: 27231214.

Breda V, Rovaris DL, Vitola ES, et al. Does collateral retrospective information about childhood attention-deficit/hyperactivity disorder symptoms assist in the diagnosis of attention-deficit/hyperactivity disorder in adults? Findings from a large clinical sample. *Aust N Z J Psychiatry* 2015. PMID: 26460329.

Brown TE, Brams M, Gasior M, et al. Clinical utility of ADHD symptom thresholds to assess normalization of executive function with lisdexamfetamine dimesylate treatment in adults. *Curr Med Res Opin* 2011;27(Suppl 2):23-33. PMID: 21973229.

Burns GL, Walsh JA, Servera M, et al. Construct validity of ADHD/ODD rating scales: recommendations for the evaluation of forthcoming DSM-V ADHD/ODD scales. *J Abnorm Child Psychol* 2013;41(1):15-26. PMID: 22773361.

Burton B, Grant M, Feigenbaum A, et al. A randomized, placebo-controlled, double-blind study of sapropterin to treat ADHD symptoms and executive function impairment in children and adults with sapropterin-responsive phenylketonuria. *Molecular Genetics and Metabolism* 2015;114(3):415-424.

Calarge CA, Schlechte JA, Burns TL, et al. The effect of psychostimulants on skeletal health in boys co-treated with risperidone. *Journal of Pediatrics* 2015;166(6):1449-1454.e1.

Camporeale A, Day KA, Ruff D, et al. Profile of sexual and genitourinary treatment-emergent adverse events associated with atomoxetine treatment: a pooled analysis. *Drug Saf* 2013;36(8):663-71. PMID: 23775507.

Canivez GL and Gaboury AR. Construct Validity and Diagnostic Utility of the Cognitive Assessment System for ADHD. *J Atten Disord* 2013. PMID: 23757332.

Canu WH and Bearman SK. Community-clinic-based parent intervention addressing noncompliance in children with attention-deficit/hyperactivity disorder. *Cognitive and Behavioral Practice* 2011;18(4):491-501.

Chang Z, Lichtenstein P, Halldner L, et al. Stimulant ADHD medication and risk for substance abuse. *Journal of Child Psychology and Psychiatry* 2014;55(8):878-885.

Charach A, Lin E and To T. Evaluating the Hyperactivity/Inattention Subscale of the National Longitudinal Survey of Children and Youth. *Health Rep* 2010;21(2):43-50. PMID: 20632524.

Chen CY, Yeh HH, Chen KH, et al. Differential effects of predictors on methylphenidate initiation and discontinuation among young people with newly diagnosed attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2011;21(3):265-73. PMID: 21663429.

Chen Q, Sjolander A, Runeson B, et al. Drug treatment for attention-deficit/hyperactivity disorder and suicidal behaviour: register based study. *Bmj* 2014;348:g3769. PMID: 24942388.

Coben R and Myers TE. Sensitivity and specificity of long wave infrared imaging for attention-deficit/hyperactivity disorder. *J Atten Disord* 2009;13(1):56-65. PMID: 19429882.

Cooper WO, Habel LA, Sox CM, et al. ADHD drugs and serious cardiovascular events in children and young adults. *N Engl J Med* 2011;365(20):1896-904. PMID: 22043968.

Cordeiro ML, Farias AC, Whybrow PC, et al. Receiver Operating Characteristic Curve Analysis of Screening Tools for Bipolar Disorder Comorbid With ADHD in Schoolchildren. *J Atten Disord* 2015. PMID: 26721636.

Corkum P, Elik N, Blotnick-Gallant PA, et al. Web-Based Intervention for Teachers of Elementary Students With ADHD: Randomized Controlled Trial. *J Atten Disord* 2015. PMID: 26362259.

Croft S, Stride C, Maughan B, et al. Validity of the strengths and difficulties questionnaire in preschool-aged children. *Pediatrics* 2015;135(5):e1210-9. PMID: 25847804.

Dalsgaard S, Leckman JF, Mortensen PB, et al. Effect of drugs on the risk of injuries in children with attention deficit hyperactivity disorder: a prospective cohort study. *Lancet Psychiatry* 2015;2(8):702-9. PMID: 26249301.

Dalsgaard S, Nielsen HS and Simonsen M. Consequences of ADHD medication use for children's outcomes. *Journal of Health Economics* 2014;37(1):137-151.

de la Osa N, Granero R, Penelo E, et al. The short and very short forms of the Children's Behavior Questionnaire in a community sample of preschoolers. *Assessment* 2014;21(4):463-76. PMID: 24235176.

Delavarian M, Towhidkhan F, Dibajnia P, et al. Designing a decision support system for distinguishing ADHD from similar children behavioral disorders. *J Med Syst* 2012;36(3):1335-43. PMID: 20878211.

Delavarian M, Towhidkhan F, Gharibzadeh S, et al. Automatic classification of hyperactive children: comparing multiple artificial intelligence approaches. *Neurosci Lett* 2011;498(3):190-3. PMID: 21396979.

Doerfler LA, Connor DF and Toscano PF, Jr.. Aggression, ADHD symptoms, and dysphoria in children and adolescents diagnosed with bipolar disorder and ADHD. *J Affect Disord* 2011;131(1-3):312-9. PMID: 21168917.

Durell TM, Adler LA, Williams DW, et al. Atomoxetine treatment of attention-deficit/hyperactivity disorder in young adults with assessment of functional outcomes: a randomized, double-blind, placebo-controlled clinical trial. *J Clin Psychopharmacol* 2013;33(1):45-54. PMID: 23277268.

Efstratopoulou M, Simons J and Janssen R. Concordance among physical educators', teachers', and parents' perceptions of attention problems in children. *J Atten Disord* 2013;17(5):437-43. PMID: 22323118.

Eichelberger I, Plück J, Hautmann C, et al. Effectiveness of the Prevention Program for Externalizing Problem Behavior (PEP) in Preschoolers with Severe and No or Mild ADHD Symptoms. *Zeitschrift für Kinder- und Jugendpsychiatrie und Psychotherapie* 2016;44(3):231-239.

Elkins RM, Carpenter AL, Pincus DB, et al. Inattention symptoms and the diagnosis of comorbid attention-deficit/hyperactivity disorder among youth with generalized anxiety disorder. *J Anxiety Disord* 2014;28(8):754-60. PMID: 25260213.

- Epstein JN, Langberg JM, Lichtenstein PK, et al. Use of an Internet portal to improve community-based pediatric ADHD care: a cluster randomized trial. *Pediatrics* 2011;128(5):e1201-8. PMID: 22007005.
- Evans WN, Morrill MS and Parente ST. Measuring inappropriate medical diagnosis and treatment in survey data: The case of ADHD among school-age children. *J Health Econ* 2010;29(5):657-73. PMID: 20739076.
- Follan M, Anderson S, Huline-Dickens S, et al. Discrimination between attention deficit hyperactivity disorder and reactive attachment disorder in school aged children. *Res Dev Disabil* 2011;32(2):520-6. PMID: 21257287.
- Fowler PJ, Henry DB, Schoeny M, et al. Effects of the SAFE Children preventive intervention on developmental trajectories of attention-deficit/hyperactivity disorder symptoms. *Dev Psychopathol* 2014;26(4 Pt 1):1161-79. PMID: 24713426.
- Franke N, Keown LJ and Sanders MR. An RCT of an Online Parenting Program for Parents of Preschool-Aged Children With ADHD Symptoms. *J Atten Disord* 2016. PMID: 27609783.
- Freeman NC, Gray KM, Taffe JR, et al. Development of a new attention rating scale for children with intellectual disability: The Scale of Attention in Intellectual Disability (SAID). *American Journal on Intellectual and Developmental Disabilities* 2015;120(2):91-109.
- Frindik JP, Morales A, Fowlkes J, et al. Stimulant medication use and response to growth hormone therapy: an NCGS database analysis. *Horm Res* 2009;72(3):160-6. PMID: 19729947.
- Fujibayashi H, Kitayama S and Matsuo M. Score of inattention subscale of ADHD rating scale-IV is significantly higher for AD/HD than PDD. *Kobe J Med Sci* 2010;56(1):E12-7. PMID: 21063141.
- Gadow KD, Arnold LE, Molina BS, et al. Risperidone added to parent training and stimulant medication: effects on attention-deficit/hyperactivity disorder, oppositional defiant disorder, conduct disorder, and peer aggression. *J Am Acad Child Adolesc Psychiatry* 2014;53(9):948-959.e1. PMID: 25151418.
- Garcia Fernandez T, Gonzalez-Pienda JA, Rodriguez Perez C, et al. Psychometric characteristics of the BRIEF scale for the assessment of executive functions in Spanish clinical population. *Psicothema* 2014;26(1):47-52. PMID: 24444729.
- Ghanizadeh A. Psychometric analysis of the new ADHD DSM-V derived symptoms. *BMC Psychiatry* 2012;12:21. PMID: 22433111.
- Gjevik E, Sandstad B, Andreassen OA, et al. Exploring the agreement between questionnaire information and DSM-IV diagnoses of comorbid psychopathology in children with autism spectrum disorders. *Autism* 2015;19(4):433-42. PMID: 24637430.
- Gonzalez-Heydrich J, Hsin O, Gumlak S, et al. Comparing stimulant effects in youth with ADHD symptoms and epilepsy. *Epilepsy Behav* 2014;36:102-7. PMID: 24907495.

Goodman D, Faraone SV, Adler LA, et al. Interpreting ADHD rating scale scores: Linking ADHD rating scale scores and CGI levels in two randomized controlled trials of lisdexamfetamine dimesylate in ADHD. *Primary Psychiatry* 2010;17(3):44-52.

Gordon HA, Rucklidge JJ, Blampied NM, et al. Clinically Significant Symptom Reduction in Children with Attention-Deficit/Hyperactivity Disorder Treated with Micronutrients: An Open-Label Reversal Design Study. *J Child Adolesc Psychopharmacol* 2015;25(10):783-98. PMID: 26682999.

Hagen KA and Ogden T. Predictors of changes in child behaviour following parent management training: Child, context, and therapy factors. *Int J Psychol* 2016. PMID: 27425781.

Handen BL, Aman MG, Arnold LE, et al. Atomoxetine, Parent Training, and Their Combination in Children With Autism Spectrum Disorder and Attention-Deficit/Hyperactivity Disorder. *J Am Acad Child Adolesc Psychiatry* 2015;54(11):905-15. PMID: 26506581.

Harfterkamp M, van der Meer D, van der Loo-Neus G, et al. No evidence for predictors of response to atomoxetine treatment of attention-deficit/hyperactivity disorder symptoms in children and adolescents with autism spectrum disorder. *Journal of Child and Adolescent Psychopharmacology* 2015;25(4):372-375.

Hatakenaka Y, Kotani H, Yasumitsu-Lovell K, et al. Infant Motor Delay and Early Symptomatic Syndromes Eliciting Neurodevelopmental Clinical Examinations in Japan. *Pediatr Neurol* 2016;54:55-63. PMID: 26706480.

Herbert SD, Harvey EA, Roberts JL, et al. A randomized controlled trial of a parent training and emotion socialization program for families of hyperactive preschool-aged children. *Behav Ther* 2013;44(2):302-16. PMID: 23611079.

Heubeck BG, Otte TA and Lauth GW. Consumer evaluation and satisfaction with individual versus group parent training for children with hyperkinetic disorder (HKD). *Br J Clin Psychol* 2016;55(3):305-19. PMID: 26660709.

Hodgkins P, Sasane R, Christensen L, et al. Treatment outcomes with methylphenidate formulations among patients with ADHD: retrospective claims analysis of a managed care population. *Curr Med Res Opin* 2011;27(Suppl 2):53-62. PMID: 21973231.

Holmberg K, Sundelin C and Hjern A. Screening for attention-deficit/hyperactivity disorder (ADHD): can high-risk children be identified in first grade?. *Child Care Health Dev* 2013;39(2):268-76. PMID: 22515618.

Hondebrink L, Rietjens SJ, Hunault CC, et al. Methylphenidate intoxications in children and adults: exposure circumstances and evidence-based dose threshold for pre-hospital triage. *Clin Toxicol (Phila)* 2015;53(3):168-77. PMID: 25650984.

Hoza B, Smith AL, Shoulberg EK, et al. A randomized trial examining the effects of aerobic physical activity on attention-deficit/hyperactivity disorder symptoms in young children. *J Abnorm Child Psychol* 2015;43(4):655-67. PMID: 25201345.

- Hult N, Kadesjo J, Kadesjo B, et al. ADHD and the QbTest: Diagnostic Validity of QbTest. *J Atten Disord* 2015. PMID: 26224575.
- Huss M, Ginsberg Y, Arngrim T, et al. Open-label dose optimization of methylphenidate modified release long acting (MPH-LA): a post hoc analysis of real-life titration from a 40-week randomized trial. *Clin Drug Investig* 2014;34(9):639-49. PMID: 25015027.
- Hwang JW, Kim B, Kim Y, et al. Methylphenidate-osmotic-controlled release oral delivery system treatment reduces parenting stress in parents of children and adolescents with attention-deficit/hyperactivity disorder. *Hum Psychopharmacol* 2013;28(6):600-7. PMID: 24519694.
- Ise E, Kierfeld F and Dopfner M. One-year follow-up of guided self-help for parents of preschool children with externalizing behavior. *J Prim Prev* 2015;36(1):33-40. PMID: 25331981.
- Johnson M, Fransson G, Ostlund S, et al. Omega 3/6 fatty acids for reading in children: a randomized, double-blind, placebo-controlled trial in 9-year-old mainstream schoolchildren in Sweden. *J Child Psychol Psychiatry* 2016. PMID: 27545509.
- Johnson S, Hollis C, Marlow N, et al. Screening for childhood mental health disorders using the Strengths and Difficulties Questionnaire: the validity of multi-informant reports. *Dev Med Child Neurol* 2014;56(5):453-9. PMID: 24410039.
- Kim J, Kim G and Seo S. Validation of the FSA as screening tool for children with ADHD. *Arts in Psychotherapy* 2014;41(4):413-423.
- Ko HJ, Kim I, Kim JB, et al. Effects of Korean red ginseng extract on behavior in children with symptoms of inattention and hyperactivity/impulsivity: a double-blind randomized placebo-controlled trial. *J Child Adolesc Psychopharmacol* 2014;24(9):501-8. PMID: 25369174.
- Kolko DJ, Campo J, Kilbourne AM, et al. Collaborative care outcomes for pediatric behavioral health problems: a cluster randomized trial. *Pediatrics* 2014;133(4):e981-92. PMID: 24664093.
- Korsch F and Petermann F. Agreement between parents and teachers on preschool children's behavior in a clinical sample with externalizing behavioral problems. *Child Psychiatry Hum Dev* 2014;45(5):617-27. PMID: 24363143.
- Kratochvil CJ, May DE, Silva SG, et al. Treatment response in depressed adolescents with and without co-morbid attention-deficit/hyperactivity disorder in the Treatment for Adolescents with Depression Study. *J Child Adolesc Psychopharmacol* 2009;19(5):519-27. PMID: 19877976.
- Kraut AA, Langner I, Lindemann C, et al. Comorbidities in ADHD children treated with methylphenidate: a database study. *BMC Psychiatry* 2013;13:11. PMID: 23294623.
- Kudo M, Altamirano W, Mearns J, et al. SWAN Preschool Rating Scale (SWAN-P): Validity evidence for English and Spanish versions. *The International Journal of Educational and Psychological Assessment* 2012;10(1):139-157.

Laezer KL. Effectiveness of psychoanalytic psychotherapy and behavioral therapy treatment in children with attention deficit hyperactivity disorder and oppositional defiant disorder. *Journal of Infant, Child & Adolescent Psychotherapy* 2015;14(2):111-128.

Landaas ET, Halmoy A, Oedegaard KJ, et al. The impact of cyclothymic temperament in adult ADHD. *J Affect Disord* 2012;142(1-3):241-7. PMID: 22840630.

Lange H, Buse J, Bender S, et al. Accident proneness in children and adolescents affected by ADHD and the impact of medication. *Journal of Attention Disorders* 2016;20(6):501-509. PMID: 2016-22077-004.

Larson T, Lundstrom S, Nilsson T, et al. Predictive properties of the A-TAC inventory when screening for childhood-onset neurodevelopmental problems in a population-based sample. *BMC Psychiatry* 2013;13:233. PMID: 24066834.

Lecavalier L, Gadow KD, Devincent CJ, et al. Validity of DSM-IV syndromes in preschoolers with autism spectrum disorders. *Autism* 2011;15(5):527-43. PMID: 21454388.

Leuchter AF, McGough JJ, Korb AS, et al. Neurophysiologic predictors of response to atomoxetine in young adults with attention deficit hyperactivity disorder: a pilot project. *J Psychiatr Res* 2014;54:11-8. PMID: 24726639.

Limbers CA, Ripperger-Suhler J, Heffer RW, et al. Patient-reported Pediatric Quality of Life Inventory 4.0 Generic Core Scales in pediatric patients with attention-deficit/hyperactivity disorder and comorbid psychiatric disorders: feasibility, reliability, and validity. *Value Health* 2011;14(4):521-30. PMID: 21315637.

Linden S, Bussing R, Kubilis P, et al. Risk of Suicidal Events With Atomoxetine Compared to Stimulant Treatment: A Cohort Study. *Pediatrics* 2016;137(5). PMID: 27244795.

Loutfi KS, Carvalho AM, Lamounier JA, et al. ADHD and epilepsy: contributions from the use of behavioral rating scales to investigate psychiatric comorbidities. *Epilepsy Behav* 2011;20(3):484-9. PMID: 21300573.

Lufi D and Fichman N. Development and use of a computerized test, MATH-CPT, to assess attention. *Percept Mot Skills* 2012;114(1):59-74. PMID: 22582676.

Makransky G and Bilenberg N. Psychometric properties of the parent and teacher ADHD Rating Scale (ADHD-RS): measurement invariance across gender, age, and informant. *Assessment* 2014;21(6):694-705. PMID: 24852496.

Man KKC, Chan EW, Coghill D, et al. Methylphenidate and the risk of trauma. *Pediatrics* 2015;135(1):40-48.

Manor I, Newcorn JH, Faraone SV, et al. Efficacy of metadoxine extended release in patients with predominantly inattentive subtype attention-deficit/hyperactivity disorder. *Postgrad Med* 2013;125(4):181-90. PMID: 23933905.



- Marshall P, Schroeder R, O'Brien J, et al. Effectiveness of symptom validity measures in identifying cognitive and behavioral symptom exaggeration in adult attention deficit hyperactivity disorder. *Clin Neuropsychol* 2010;24(7):1204-37. PMID: 20845231.
- Martel MM, Schimmack U, Nikolas M, et al. Integration of symptom ratings from multiple informants in ADHD diagnosis: A psychometric model with clinical utility. *Psychological Assessment* 2015;27(3):1060-1071.
- Martin P, Satin L, Kahn RS, et al. A thorough QT study of guanfacine. *Int J Clin Pharmacol Ther* 2015;53(4):301-16. PMID: 25109412.
- Masi G, Milone A, Manfredi A, et al. Combined pharmacotherapy-multimodal psychotherapy in children with Disruptive Behavior Disorders. *Psychiatry Research* 2016;238:8-13.
- Masi G, Pisano S, Milone A, et al. Child behavior checklist dysregulation profile in children with disruptive behavior disorders: A longitudinal study. *J Affect Disord* 2015;186:249-53. PMID: 26254616.
- McCarthy S, Wilton L, Murray ML, et al. Persistence of pharmacological treatment into adulthood, in UK primary care, for ADHD patients who started treatment in childhood or adolescence. *BMC Psychiatry* 2012;12(1).
- McConaughy SH, Harder VS, Antshel KM, et al. Incremental validity of test session and classroom observations in a multimethod assessment of attention deficit/hyperactivity disorder. *J Clin Child Adolesc Psychol* 2010;39(5):650-66. PMID: 20706918.
- McConaughy SH, Ivanova MY, Antshel K, et al. Standardized Observational Assessment of Attention Deficit Hyperactivity Disorder Combined and Predominantly Inattentive Subtypes. II. Classroom Observations. *School Psych Rev* 2009;38(3):362-381. PMID: 20802813.
- Melegari MG, Sacco R, Manzi B, et al. Deficient Emotional Self-Regulation in Preschoolers With ADHD: Identification, Comorbidity, and Interpersonal Functioning. *J Atten Disord* 2016. PMID: 26744314.
- Miller BS, Aydin F, Lundgren F, et al. Stimulant use and its impact on growth in children receiving growth hormone therapy: an analysis of the KIGS International Growth Database. *Horm Res Paediatr* 2014;82(1):31-7. PMID: 24924157.
- Miranda A, Colomer C, Mercader J, et al. Performance-based tests versus behavioral ratings in the assessment of executive functioning in preschoolers: associations with ADHD symptoms and reading achievement. *Front Psychol* 2015;6:545. PMID: 25972833.
- Miranda MC, Barbosa T, Muszkat M, et al. Performance patterns in Conners' CPT among children with attention deficit hyperactivity disorder and dyslexia. *Arq Neuropsiquiatr* 2012;70(2):91-6. PMID: 22311211.

Missiuna C, Cairney J, Pollock N, et al. A staged approach for identifying children with developmental coordination disorder from the population. *Res Dev Disabil* 2011;32(2):549-59. PMID: 21216564.

Molife C, Bernauer MJ, Farr AM, et al. Combination therapy patterns and predictors of ADHD in commercially insured and Medicaid populations. *Postgrad Med* 2012;124(5):7-22. PMID: 23095422.

Moore RM. Reliable ratings or reading tea leaves: Can parent, teacher, and clinician behavioral ratings of preschoolers predict ADHD at age six?. *Journal of Developmental and Behavioral Pediatrics* 2014;35(7):471-471.

Munkvold LH, Manger T and Lundervold AJ. Conners' continuous performance test (CCPT-II) in children with ADHD/ODD, or a combined ADHD/ODD diagnosis. *Child Neuropsychology* 2014;20(1):106-126.

Nazhvani AD, Boostani R, Afrasiabi S, et al. Classification of ADHD and BMD patients using visual evoked potential. *Clin Neurol Neurosurg* 2013;115(11):2329-35. PMID: 24050849.

Newman E and Reddy LA. Diagnostic Utility of the Pediatric Attention Disorders Diagnostic Screener. *J Atten Disord* 2014. PMID: 24639402.

Nielsen NP and Wiig EH. Validation of the AQT color-form additive model for screening and monitoring pharmacological treatment of ADHD. *J Atten Disord* 2013;17(3):187-93. PMID: 22210798.

Olfson M, Huang C, Gerhard T, et al. Stimulants and cardiovascular events in youth with attention-deficit/hyperactivity disorder. *J Am Acad Child Adolesc Psychiatry* 2012;51(2):147-56. PMID: 22265361.

Palli SR, Kamble PS, Chen H, et al. Persistence of stimulants in children and adolescents with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2012;22(2):139-48. PMID: 22364400.

Park JH, Lee SI and Schachar RJ. Reliability and validity of the child and adolescent functioning impairment scale in children with attention-deficit/hyperactivity disorder. *Psychiatry Investig* 2011;8(2):113-22. PMID: 21852987.

Parker A and Corkum P. ADHD Diagnosis: As Simple As Administering a Questionnaire or a Complex Diagnostic Process?. *J Atten Disord* 2013. PMID: 23887860.

Pearson DA, Santos CW, Aman MG, et al. Effects of extended release methylphenidate treatment on ratings of attention-deficit/hyperactivity disorder (ADHD) and associated behavior in children with autism spectrum disorders and ADHD symptoms. *J Child Adolesc Psychopharmacol* 2013;23(5):337-51. PMID: 23782128.

Penzner JB, Dudas M, Saito E, et al. Lack of effect of stimulant combination with second-generation antipsychotics on weight gain, metabolic changes, prolactin levels, and sedation in

youth with clinically relevant aggression or oppositionality. *J Child Adolesc Psychopharmacol* 2009;19(5):563-73. PMID: 19877981.

Pfiffner LJ, Rooney M, Haack L, et al. A Randomized Controlled Trial of a School-Implemented School-Home Intervention for Attention-Deficit/Hyperactivity Disorder Symptoms and Impairment. *Journal of the American Academy of Child and Adolescent Psychiatry* 2016;55(9):762-770.

Prevatt F and Yelland S. An empirical evaluation of ADHD coaching in college students. *Journal of Attention Disorders* 2015;19(8):666-677.

Reddy LA, Newman E, Pedigo TK, et al. Concurrent validity of the pediatric attention disorders diagnostic screener for children with ADHD. *Child Neuropsychol* 2010;16(5):478-93. PMID: 20485995.

Redmond SM, Thompson HL and Goldstein S. Psycholinguistic profiling differentiates specific language impairment from typical development and from attention-deficit/hyperactivity disorder. *J Speech Lang Hear Res* 2011;54(1):99-117. PMID: 20719871.

Reimherr FW, Marchant BK, Olsen JL, et al. Oppositional defiant disorder in adults with ADHD. *J Atten Disord* 2013;17(2):102-13. PMID: 22100691.

Renes JS, de Ridder MA, Breukhoven PE, et al. Methylphenidate and the response to growth hormone treatment in short children born small for gestational age. *PLoS One* 2012;7(12):e53164. PMID: 23300884.

Richa S, Rohayem J, Chammai R, et al. ADHD prevalence in Lebanese school-age population. *J Atten Disord* 2014;18(3):242-6. PMID: 22628148.

Roberts G, Rane S, Fall A-M, et al. The impact of intensive reading intervention on level of attention in middle school students. *Journal of Clinical Child and Adolescent Psychology* 2015;44(6):942-953.

Rogalin MT and Nencini A. Consequences of the 'Attention-Deficit/Hyperactivity Disorder' (ADHD) diagnosis. An investigation with education professionals. *Psychological Studies* 2015;60(1):41-49.

Rogińska N and Bieganowska K. Sick sinus syndrome: A family study. *Cardiology in the Young* 2014;24(1):136-139.

Rohatgi RK, Bos JM and Ackerman MJ. Stimulant therapy in children with attention-deficit/hyperactivity disorder and concomitant long QT syndrome: A safe combination?. *Heart Rhythm* 2015;12(8):1807-12. PMID: 25956966.

Rose SR, Reeves G, Gut R, et al. Attention-Deficit/Hyperactivity Disorder Medication Treatment Impact on Response to Growth Hormone Therapy: Results from the ANSWER Program, a Non-Interventional Study. *Journal of Pediatrics*. 2015.

- Rotger S, Richarte V, Nogueira M, et al. Functioning Assessment Short Test (FAST): validity and reliability in adults with attention-deficit/hyperactivity disorder. *Eur Arch Psychiatry Clin Neurosci* 2014;264(8):719-27. PMID: 24710954.
- Rubio B, Hernandez S, Verche E, et al. A pilot study: differential effects of methylphenidate-OROS on working memory and attention functions in children with attention-deficit/hyperactivity disorder with and without behavioural comorbidities. *Atten Defic Hyperact Disord* 2011;3(1):13-20. PMID: 21432614.
- Rucklidge JJ, Frampton CM, Gorman B, et al. Vitamin–mineral treatment of attention-deficit hyperactivity disorder in adults: Double-blind randomised placebo-controlled trial. *The British Journal of Psychiatry* 2014;204(4):306-315.
- Rucklidge JJ, Johnstone J, Gorman B, et al. Moderators of treatment response in adults with ADHD treated with a vitamin-mineral supplement. *Prog Neuropsychopharmacol Biol Psychiatry* 2014;50:163-71. PMID: 24374068.
- Russ SA, Larson K and Halfon N. A national profile of childhood epilepsy and seizure disorder. *Pediatrics* 2012;129(2):256-64. PMID: 22271699.
- Sable JJ, Kyle MR, Knopf KL, et al. The Sensory Gating Inventory as a potential diagnostic tool for attention-deficit hyperactivity disorder. *Atten Defic Hyperact Disord* 2012;4(3):141-4. PMID: 22644992.
- Sasane R, Hodgkins P and Meijer W. Treatment stabilization in children and adolescents with attention-deficit/hyperactivity disorder: data from the Netherlands. *Curr Med Res Opin* 2010;26(11):2565-74. PMID: 20863165.
- Sayal K, Merrell C, Tymms P, et al. Academic Outcomes Following a School-Based RCT for ADHD: 6-Year Follow-Up. *J Atten Disord* 2015. PMID: 25555626.
- Sayal K, Taylor JA, Valentine A, et al. Effectiveness and cost-effectiveness of a brief school-based group programme for parents of children at risk of ADHD: a cluster randomised controlled trial. *Child Care Health Dev* 2016;42(4):521-33. PMID: 27272608.
- Scahill L, McCracken JT, King BH, et al. Extended-Release Guanfacine for Hyperactivity in Children With Autism Spectrum Disorder. *Am J Psychiatry* 2015. PMID: 26315981.
- Scheithauer MC and Kelley ML. Self-Monitoring by College Students With ADHD: The Impact on Academic Performance. *J Atten Disord* 2014. PMID: 25319163.
- Schneider H, Thornton JF, Freeman MA, et al. Conventional SPECT versus 3D thresholded SPECT imaging in the diagnosis of ADHD: A retrospective study. *Journal of Neuropsychiatry and Clinical Neurosciences* 2014;26(4):335-343.
- Setyawan J, Guerin A, Hodgkins P, et al. Treatment persistence in attention deficit/hyperactivity disorder: a retrospective analysis of patients initiated on lisdexamfetamine vs other medications. *J Med Econ* 2013;16(11):1275-89. PMID: 24004347.

Shata ZN, Abu-Nazel MW, Fahmy SI, et al. Efficacy of a psychosocial intervention for parents of children with attention deficit hyperactivity disorder, Alexandria, Egypt. *J Egypt Public Health Assoc* 2014;89(1):9-15. PMID: 24717395.

Shyu YC, Yuan SS, Lee SY, et al. Attention-deficit/hyperactivity disorder, methylphenidate use and the risk of developing schizophrenia spectrum disorders: A nationwide population-based study in Taiwan. *Schizophr Res* 2015;168(1-2):161-7. PMID: 26363968.

Sikirica V, Xie J, He TL, et al. Immediate-release versus extended-release guanfacine for treatment of attention-deficit/hyperactivity disorder. *American Journal of Pharmacy Benefits* 2013;5(4):e85-e94.

Silverstein M, Hironaka LK, Feinberg E, et al. Using Clinical Data to Predict Accurate ADHD Diagnoses Among Urban Children. *Clin Pediatr (Phila)* 2015. PMID: 26130393.

Silverstein M, Hironaka LK, Walter HJ, et al. Collaborative care for children with ADHD symptoms: a randomized comparative effectiveness trial. *Pediatrics* 2015;135(4):e858-67. PMID: 25802346.

Sirois PA, Montepiedra G, Kapetanovic S, et al. Impact of medications prescribed for treatment of attention-deficit hyperactivity disorder on physical growth in children and adolescents with HIV. *J Dev Behav Pediatr* 2009;30(5):403-12. PMID: 19827220.

Smith T, Aman MG, Arnold LE, et al. Atomoxetine and Parent Training for Children With Autism and Attention-Deficit/Hyperactivity Disorder: A 24-Week Extension Study. *J Am Acad Child Adolesc Psychiatry* 2016;55(10):868-876.e2. PMID: 27663942.

Snyder SM, Rugino TA, Hornig M, et al. Integration of an EEG biomarker with a clinician's ADHD evaluation. *Brain Behav* 2015;5(4):e00330. PMID: 25798338.

Soderstrom S, Pettersson R and Nilsson KW. Quantitative and subjective behavioural aspects in the assessment of attention-deficit hyperactivity disorder (ADHD) in adults. *Nord J Psychiatry* 2014;68(1):30-7. PMID: 23527787.

Somuk BT, Bozkurt H, Goktas G, et al. Impact of adenotonsillectomy on ADHD and nocturnal enuresis in children with chronic adenotonsillar hypertrophy. *Am J Otolaryngol* 2016;37(1):27-30. PMID: 26700255.

Stattin H, Enebrink P, Ozdemir M, et al. A National Evaluation of Parenting Programs in Sweden: The Short-Term Effects Using an RCT Effectiveness Design. *J Consult Clin Psychol* 2015. PMID: 26009784.

Steiner NJ, Frenette E, Hynes C, et al. A pilot feasibility study of neurofeedback for children with autism. *Applied Psychophysiology and Biofeedback* 2014;39(2):99-107. PMID: 2014-14168-001.

Thakur GA, Grizenko N, Sengupta SM, et al. The 5-HTTLPR polymorphism of the serotonin transporter gene and short term behavioral response to methylphenidate in children with ADHD. *BMC Psychiatry* 2010;10:50. PMID: 20569447.

Toomey SL, Chan E, Ratner JA, et al. The patient-centered medical home, practice patterns, and functional outcomes for children with attention deficit/hyperactivity disorder. *Acad Pediatr* 2011;11(6):500-7. PMID: 21967721.

Trillingsgaard T, Trillingsgaard A and Webster-Stratton C. Assessing the effectiveness of the 'Incredible Years((R)) parent training' to parents of young children with ADHD symptoms - a preliminary report. *Scand J Psychol* 2014;55(6):538-45. PMID: 25130208.

Ullebo AK, Posserud MB, Heiervang E, et al. Screening for the attention deficit hyperactivity disorder phenotype using the strength and difficulties questionnaire. *Eur Child Adolesc Psychiatry* 2011;20(9):451-8. PMID: 21833627.

Valo S and Tannock R. Diagnostic instability of DSM-IV ADHD subtypes: effects of informant source, instrumentation, and methods for combining symptom reports. *J Clin Child Adolesc Psychol* 2010;39(6):749-60. PMID: 21058123.

Villodas MT, McBurnett K, Kaiser N, et al. Additive effects of parent adherence on social and behavioral outcomes of a collaborative school-home behavioral intervention for ADHD. *Child Psychiatry and Human Development* 2014;45(3):348-360. PMID: 2013-33475-001.

Vogel T, Dom G, van de Glind G, et al. Is attention deficit/hyperactivity disorder among men associated with initiation or escalation of substance use at 15-month follow up? A longitudinal study involving young Swiss men. *Addiction* 2016. PMID: 27061514.

Wakschlag LS, Estabrook R, Petitelerc A, et al. Clinical Implications of a Dimensional Approach: The Normal:Abnormal Spectrum of Early Irritability. *J Am Acad Child Adolesc Psychiatry* 2015;54(8):626-34. PMID: 26210331.

Wang LJ, Shyu YC, Yuan SS, et al. Attention-deficit hyperactivity disorder, its pharmacotherapy, and the risk of developing bipolar disorder: A nationwide population-based study in Taiwan. *Journal of Psychiatric Research* 2016;72:6-14.

Whiteley P, Haracopos D, Knivsberg AM, et al. The ScanBrit randomised, controlled, single-blind study of a gluten- and casein-free dietary intervention for children with autism spectrum disorders. *Nutr Neurosci* 2010;13(2):87-100. PMID: 20406576.

Williamson KD, Combs HL, Berry DT, et al. Discriminating among ADHD alone, ADHD with a comorbid psychological disorder, and feigned ADHD in a college sample. *Clin Neuropsychol* 2014;28(7):1182-96. PMID: 25225947.

Winterstein AG, Gerhard T, Shuster J, et al. Cardiac safety of methylphenidate versus amphetamine salts in the treatment of ADHD. *Pediatrics* 2009;124(1):e75-80. PMID: 19564272.

Yang HN, Tai YM, Yang LK, et al. Prediction of childhood ADHD symptoms to quality of life in young adults: adult ADHD and anxiety/depression as mediators. *Res Dev Disabil* 2013;34(10):3168-81. PMID: 23886759.

Young JC and Gross AM. Detection of response bias and noncredible performance in adult attention-deficit/hyperactivity disorder. *Arch Clin Neuropsychol* 2011;26(3):165-75. PMID: 21441258.

Zambrano-Sanchez E, Martinez-Cortes JA, Del Rio-Carlos Y, et al. Identification of attention-deficit-hyperactivity disorder and conduct disorder in Mexican children by the scale for evaluation of deficit of attention and hyperactivity. *Psychiatry Res* 2011;187(3):437-40. PMID: 20934222.

Zentall SS and Lee J. A Reading Motivation Intervention With Differential Outcomes for Students At Risk for Reading Disabilities, ADHD, and Typical Comparisons: “Clever Is and Clever Does”. *Learning Disability Quarterly* 2012;35(4):248-259.

Zhang C, Kutyifa V, Moss AJ, et al. Long-QT Syndrome and Therapy for Attention Deficit/Hyperactivity Disorder. *Journal of Cardiovascular Electrophysiology* 2015;26(10):1039-1044.

Zoega H, Rothman KJ, Huybrechts KF, et al. A population-based study of stimulant drug treatment of ADHD and academic progress in children. *Pediatrics* 2012;130(1):e53-62. PMID: 22732167.

Zoega H, Valdimarsdottir UA and Hernandez-Diaz S. Age, academic performance, and stimulant prescribing for ADHD: a nationwide cohort study. *Pediatrics* 2012;130(6):1012-8. PMID: 23166340.

Zuvekas SH and Vitiello B. Stimulant medication use in children: a 12-year perspective. *Am J Psychiatry* 2012;169(2):160-6. PMID: 22420039.

## **Does Not Include an Intervention of Interest**

Bachmann M, Bachmann CJ, John K, et al. The effectiveness of child and adolescent psychiatric treatments in a naturalistic outpatient setting. *World Psychiatry* 2010;9(2):111-7. PMID: 20671900.

Barnard-Brak L, Schmidt M and Sulak T. ADHD medication vacations and parent-child interactions by gender. *J Atten Disord* 2013;17(6):506-9. PMID: 22366239.

Bart O, Raz S and Dan O. Reliability and validity of the Continuous Performance Test among children. *Assessment* 2014;21(5):637-643. PMID: 2014-39289-010.

Bauer NS, Szczepaniak D, Sullivan PD, et al. Group Visits to Improve Pediatric Attention-Deficit Hyperactivity Disorder Chronic Care Management. *J Dev Behav Pediatr* 2015;36(8):553-61. PMID: 26414089.

Biederman J, Monuteaux MC, Spencer T, et al. Do stimulants protect against psychiatric disorders in youth with ADHD? A 10-year follow-up study. *Pediatrics* 2009;124(1):71-8. PMID: 19564285.

Biederman J, Petty CR, Fried R, et al. Is the diagnosis of ADHD influenced by time of entry to school? An examination of clinical, familial, and functional correlates in children at early and late entry points. *J Atten Disord* 2014;18(3):179-85. PMID: 22628145.

Brocki KC, Eninger L, Thorell LB, et al. Interrelations between executive function and symptoms of hyperactivity/impulsivity and inattention in preschoolers: a two year longitudinal study. *J Abnorm Child Psychol* 2010;38(2):163-71. PMID: 19763816.

Carroll AE, Bauer NS, Dugan TM, et al. Use of a computerized decision aid for ADHD diagnosis: a randomized controlled trial. *Pediatrics* 2013;132(3):e623-9. PMID: 23958768.

Casagrande M, Martella D, Ruggiero MC, et al. Assessing attentional systems in children with Attention Deficit Hyperactivity Disorder. *Arch Clin Neuropsychol* 2012;27(1):30-44. PMID: 22071484.

Casaseca-de-la-Higuera P, Martin-Martinez D, Alberola-Lopez S, et al. Automatic diagnosis of ADHD based on multichannel nonlinear analysis of actimetry registries. *Conf Proc IEEE Eng Med Biol Soc* 2012;2012:4204-7. PMID: 23366855.

Catale C, Geurten M, Lejeune C, et al. The Conners Parent Rating Scale: Psychometric properties in typically developing 4- to 12-year-old Belgian French-speaking children. *European Review of Applied Psychology / Revue Européenne de Psychologie Appliquée* 2014;64(5):221-227. PMID: 2014-42090-003.

Chilakamarri JK, Filkowski MM and Ghaemi SN. Misdiagnosis of bipolar disorder in children and adolescents: a comparison with ADHD and major depressive disorder. *Ann Clin Psychiatry* 2011;23(1):25-9. PMID: 21318193.

Cordier R, Bundy A, Hocking C, et al. Comparison of the play of children with attention deficit hyperactivity disorder by subtypes. *Aust Occup Ther J* 2010;57(2):137-45. PMID: 20854579.

de Luis-Garcia R, Cabus-Pinol G, Imaz-Roncero C, et al. Attention deficit/hyperactivity disorder and medication with stimulants in young children: a DTI study. *Prog Neuropsychopharmacol Biol Psychiatry* 2015;57:176-84. PMID: 25445066.

Demidovich M, Kolko DJ, Bukstein OG, et al. Medication refusal in children with oppositional defiant disorder or conduct disorder and comorbid attention-deficit/hyperactivity disorder: medication history and clinical correlates. *J Child Adolesc Psychopharmacol* 2011;21(1):57-66. PMID: 21288119.

Denis I, Guay MC, Foldes-Busque G, et al. Effect of Treating Anxiety Disorders on Cognitive Deficits and Behaviors Associated with Attention Deficit Hyperactivity Disorder: A Preliminary Study. *Child Psychiatry Hum Dev* 2015. PMID: 26323585.



- Dyck MJ and Piek JP. Developmental delays in children with ADHD. *J Atten Disord* 2014;18(5):466-78. PMID: 22508756.
- Efron D and Sciberras E. The diagnostic outcomes of children with suspected attention deficit hyperactivity disorder following multidisciplinary assessment. *J Paediatr Child Health* 2010;46(7-8):392-7. PMID: 20546102.
- England SJ, Picchietti DL, Couvadelli BV, et al. L-Dopa improves Restless Legs Syndrome and periodic limb movements in sleep but not Attention-Deficit-Hyperactivity Disorder in a double-blind trial in children. *Sleep Med* 2011;12(5):471-7. PMID: 21463967.
- Fabiano GA, Schatz NK, Morris KL, et al. Efficacy of a Family-Focused Intervention for Young Drivers With Attention-Deficit Hyperactivity Disorder. *J Consult Clin Psychol* 2016. PMID: 27618640.
- Farmer CA, Epstein JN, Findling RL, et al. Risperidone Added to Psychostimulant in Children with Severe Aggression and Attention-Deficit/Hyperactivity Disorder: Lack of Effect on Attention and Short-Term Memory. *J Child Adolesc Psychopharmacol* 2016. PMID: 27348211.
- Fergusson DM, Boden JM and Horwood LJ. Classification of behavior disorders in adolescence: scaling methods, predictive validity, and gender differences. *J Abnorm Psychol* 2010;119(4):699-712. PMID: 20853914.
- Fiks AG, Mayne S, Hughes CC, et al. Development of an instrument to measure parents' preferences and goals for the treatment of attention deficit-hyperactivity disorder. *Acad Pediatr* 2012;12(5):445-55. PMID: 22748759.
- Foreman DM and Morton S. Nurse-delivered and doctor-delivered care in an attention deficit hyperactivity disorder follow-up clinic: a comparative study using propensity score matching. *J Adv Nurs* 2011;67(6):1341-8. PMID: 21375572.
- Fortes D, Serra-Pinheiro MA, Coutinho G, et al. Quantitative measurement of impairment in ADHD: Perspectives for research and clinical practice. *Revista de Psiquiatria Clinica* 2014;41(5):124-130.
- Fujioka T, Takiguchi S, Yatsuga C, et al. Advanced Test of Attention in Children with Attention-Deficit/Hyperactivity Disorder in Japan for Evaluation of Methylphenidate and Atomoxetine Effects. *Clin Psychopharmacol Neurosci* 2016;14(1):79-87. PMID: 26792044.
- Goetz M, Yeh CB, Ondrejka I, et al. A 12-month prospective, observational study of treatment regimen and quality of life associated with ADHD in central and eastern europe and eastern Asia. *J Atten Disord* 2012;16(1):44-59. PMID: 20858785.
- Groenman AP, Oosterlaan J, Rommelse NN, et al. Stimulant treatment for attention-deficit hyperactivity disorder and risk of developing substance use disorder. *Br J Psychiatry* 2013;203(2):112-9. PMID: 23846996.

Haynes V, Lopez-Romero P and Anand E. Attention-deficit/hyperactivity disorder Under Treatment Outcomes Research (AUTOR): a European observational study in pediatric subjects. *Atten Defic Hyperact Disord* 2015;7(4):295-311. PMID: 26115621.

Hechtman L, Swanson JM, Sibley MH, et al. Functional Adult Outcomes 16 Years After Childhood Diagnosis of Attention-Deficit/Hyperactivity Disorder: MTA Results. *Journal of the American Academy of Child and Adolescent Psychiatry* 2016.

Hinshaw SP, Owens EB, Zalecki C, et al. Prospective follow-up of girls with attention-deficit/hyperactivity disorder into early adulthood: continuing impairment includes elevated risk for suicide attempts and self-injury. *J Consult Clin Psychol* 2012;80(6):1041-51. PMID: 22889337.

Jans T, Jacob C, Warnke A, et al. Does intensive multimodal treatment for maternal ADHD improve the efficacy of parent training for children with ADHD? A randomized controlled multicenter trial. *J Child Psychol Psychiatry* 2015. PMID: 26123832.

Kim HW, Cho SC, Kim BN, et al. Does oppositional defiant disorder have temperament and psychopathological profiles independent of attention deficit/hyperactivity disorder?. *Compr Psychiatry* 2010;51(4):412-8. PMID: 20579516.

Kim JW, Kim BN, Lee J, et al. Desynchronization of Theta-Phase Gamma-Amplitude Coupling during a Mental Arithmetic Task in Children with Attention Deficit/Hyperactivity Disorder. *PLoS One* 2016;11(3):e0145288. PMID: 26930194.

Kolko DJ and Pardini DA. ODD dimensions, ADHD, and callous-unemotional traits as predictors of treatment response in children with disruptive behavior disorders. *J Abnorm Psychol* 2010;119(4):713-25. PMID: 21090875.

Kurth L and Haussmann R. Perinatal Pitocin as an early ADHD biomarker: neurodevelopmental risk?. *J Atten Disord* 2011;15(5):423-31. PMID: 21527574.

Lahey BB and Willcutt EG. Predictive validity of a continuous alternative to nominal subtypes of attention-deficit/hyperactivity disorder for DSM-V. *J Clin Child Adolesc Psychol* 2010;39(6):761-75. PMID: 21058124.

Lambek R and Trillingsgaard A. Elaboration, validation and standardization of the five to fifteen (FTF) questionnaire in a Danish population sample. *Research in Developmental Disabilities* 2015;38:161-170.

Lavigne JV, Dulcan MK, LeBailly SA, et al. Computer-assisted management of attention-deficit/hyperactivity disorder. *Pediatrics* 2011;128(1):e46-53. PMID: 21669891.

Lin DY, Kratochvil CJ, Xu W, et al. A randomized trial of edivoxetine in pediatric patients with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2014;24(4):190-200. PMID: 24840045.

Mattis S, Papolos D, Luck D, et al. Neuropsychological factors differentiating treated children with pediatric bipolar disorder from those with attention-deficit/hyperactivity disorder. *J Clin Exp Neuropsychol* 2011;33(1):74-84. PMID: 20603740.

Monden Y, Dan I, Nagashima M, et al. Individual classification of ADHD children by right prefrontal hemodynamic responses during a go/no-go task as assessed by fNIRS. *Neuroimage Clin* 2015;9:1-12. PMID: 26266096.

Montoya A, Escobar R, Garcia-Polavieja MJ, et al. Changes of urine dihydroxyphenylglycol to norepinephrine ratio in children with attention-deficit hyperactivity disorder (ADHD) treated with atomoxetine. *J Child Neurol* 2011;26(1):31-6. PMID: 20525942.

Montoya A, Hervas A, Fuentes J, et al. Cluster-randomized, controlled 12-month trial to evaluate the effect of a parental psychoeducation program on medication persistence in children with attention-deficit/hyperactivity disorder. *Neuropsychiatr Dis Treat* 2014;10:1081-92. PMID: 24966679.

Morrow RL, Garland EJ, Wright JM, et al. Influence of relative age on diagnosis and treatment of attention-deficit/hyperactivity disorder in children. *Cmaj* 2012;184(7):755-62. PMID: 22392937.

Mukherjee S, Aneja S, Russell PS, et al. INCLLEN diagnostic tool for attention deficit hyperactivity disorder (INDT-ADHD): development and validation. *Indian Pediatr* 2014;51(6):457-62. PMID: 24986281.

O'Connor B, Garner AA, Peugh JL, et al. Improved but still impaired: Symptom-impairment correspondence among youth with attention-deficit hyperactivity disorder receiving community-based care. *Journal of Developmental and Behavioral Pediatrics* 2015;36(2):106-114.

Park JI, Shim SH, Lee M, et al. The validities and efficiencies of korean ADHD rating scale and korean child behavior checklist for screening children with ADHD in the community. *Psychiatry Investig* 2014;11(3):258-65. PMID: 25110498.

Paul-Jordanov I, Bechtold M and Gawrilow C. Methylphenidate and if-then plans are comparable in modulating the P300 and increasing response inhibition in children with ADHD. *Atten Defic Hyperact Disord* 2010;2(3):115-26. PMID: 21432597.

Pedersen SL, Walther CA, Harty SC, et al. The Indirect Effects of Childhood ADHD on Alcohol Problems in Adulthood through Unique Facets of Impulsivity. *Addiction* 2016. PMID: 26999438.

Peterson BS, Potenza MN, Wang Z, et al. An FMRI study of the effects of psychostimulants on default-mode processing during Stroop task performance in youths with ADHD. *Am J Psychiatry* 2009;166(11):1286-94. PMID: 19755575.

Powell SG, Thomsen PH, Frydenberg M, et al. Long-term treatment of ADHD with stimulants: a large observational study of real-life patients. *J Atten Disord* 2011;15(6):439-51. PMID: 20631198.

Riahi F, Tashakori A and Abdi L. Comparison between the efficacies of Risperidone with Haloperidol in the treatment of attention-deficit hyperactivity disorder (ADHD) among preschoolers: a randomized double-blind clinical trial. *Electron Physician* 2016;8(9):2840-2848. PMID: 27790334.

Riddle MA, Yershova K, Lazzaretto D, et al. The Preschool Attention-Deficit/Hyperactivity Disorder Treatment Study (PATS) 6-year follow-up. *J Am Acad Child Adolesc Psychiatry* 2013;52(3):264-278.e2. PMID: 23452683.

Salardini E, Zeinodini A, Kohi A, et al. Agomelatine as a Treatment for Attention-Deficit/Hyperactivity Disorder in Children and Adolescents: A Double-Blind, Randomized Clinical Trial. *J Child Adolesc Psychopharmacol* 2016. PMID: 27286139.

Sallee FR. Early Morning Functioning in Stimulant-Treated Children and Adolescents with Attention-Deficit/Hyperactivity Disorder, and its Impact on Caregivers. *Journal of Child and Adolescent Psychopharmacology* 2015;25(7):558-565.

Sandler AD, Glesne CE and Bodfish JW. Conditioned placebo dose reduction: a new treatment in attention-deficit hyperactivity disorder?. *J Dev Behav Pediatr* 2010;31(5):369-75. PMID: 20495473.

Sangal RB, Blumer JL, Lankford DA, et al. Eszopiclone for insomnia associated with attention-deficit/hyperactivity disorder. *Pediatrics* 2014;134(4):e1095-103. PMID: 25266438.

Serrano E, Ezpeleta L, Alda JA, et al. Psychometric properties of the Young Mania Rating Scale for the identification of mania symptoms in Spanish children and adolescents with attention deficit/hyperactivity disorder. *Psychopathology* 2011;44(2):125-32. PMID: 21228617.

Sibley MH, Pelham WE, Jr., Molina BS, et al. Diagnosing ADHD in adolescence. *J Consult Clin Psychol* 2012;80(1):139-50. PMID: 22148878.

Sims DM and Lonigan CJ. Multi-method assessment of ADHD characteristics in preschool children: Relations between measures. *Early Childhood Research Quarterly* 2012;27(2):329-337.

Solanto MV and Alvir J. Reliability of DSM-IV Symptom Ratings of ADHD: implications for DSM-V. *J Atten Disord* 2009;13(2):107-16. PMID: 19372494.

Sonuga-Barke EJ, Coghill D, DeBacker M, et al. Measuring methylphenidate response in attention-deficit/hyperactivity disorder: how are laboratory classroom-based measures related to parent ratings?. *J Child Adolesc Psychopharmacol* 2009;19(6):691-8. PMID: 20035587.

Srebnicki T, Kolakowski A and Wolanczyk T. Adolescent outcome of child ADHD in primary care setting: stability of diagnosis. *J Atten Disord* 2013;17(8):655-9. PMID: 22408135.

Staikova E, Marks DJ, Miller CJ, et al. Childhood stimulant treatment and teen depression: is there a relationship?. *J Child Adolesc Psychopharmacol* 2010;20(5):387-93. PMID: 20973709.

Stocks JD, Taneja BK, Baroldi P, et al. A phase 2a randomized, parallel group, dose-ranging study of molindone in children with attention-deficit/hyperactivity disorder and persistent, serious conduct problems. *J Child Adolesc Psychopharmacol* 2012;22(2):102-11. PMID: 22372512.

Szomlajski N, Dyrborg J, Rasmussen H, et al. Validity and clinical feasibility of the ADHD rating scale (ADHD-RS) A Danish Nationwide Multicenter Study. *Acta Paediatr* 2009;98(2):397-402. PMID: 18775056.

Telford C, Green C, Logan S, et al. Estimating the costs of ongoing care for adolescents with attention-deficit hyperactivity disorder. *Soc Psychiatry Psychiatr Epidemiol* 2013;48(2):337-44. PMID: 22699685.

Tzang RF, Chang YC, Tsai GE, et al. Sarcosine treatment for oppositional defiant disorder symptoms of attention deficit hyperactivity disorder children. *J Psychopharmacol* 2016. PMID: 27443598.

Vitiello B, Lazzaretto D, Yershova K, et al. Pharmacotherapy of the Preschool ADHD Treatment Study (PATS) Children Growing Up. *J Am Acad Child Adolesc Psychiatry* 2015;54(7):550-6. PMID: 26088659.

Vollebregt MA, Van Dongen-Boomsma M, Slaats-Willemse D, et al. How the Individual Alpha Peak Frequency Helps Unravel the Neurophysiologic Underpinnings of Behavioral Functioning in Children With Attention-Deficit/Hyperactivity Disorder. *Clinical EEG and Neuroscience* 2015;46(4):285-291.

Volpe RJ, DuPaul GJ, Jitendra AK, et al. Consultation-based academic interventions for children with attention deficit hyperactivity disorder: Effects on reading and mathematics outcomes at 1-year follow-up. *School Psychology Review* 2009;38(1):5-13.

Volpe RJ, Gadow KD, Blom-Hoffman J, et al. Factor-analytic and individualized approaches to constructing brief measures of ADHD behaviors. *Journal of Emotional and Behavioral Disorders* 2009;17(2):118-128.

Wan Salwina WI, Baharudin A, Nik Ruzyanei NJ, et al. Attention deficit hyperactivity disorder symptoms reporting in Malaysian adolescents: do adolescents, parents and teachers agree with each other?. *Asian J Psychiatr* 2013;6(6):483-7. PMID: 24309858.

Waxmonsky JG, Waschbusch DA, Belin P, et al. A Randomized Clinical Trial of an Integrative Group Therapy for Children With Severe Mood Dysregulation. *J Am Acad Child Adolesc Psychiatry* 2016;55(3):196-207. PMID: 26903253.

Wehmeier PM, Schacht A, Dittmann RW, et al. Minor differences in ADHD-related difficulties between boys and girls treated with atomoxetine for attention-deficit/hyperactivity disorder. *Atten Defic Hyperact Disord* 2010;2(2):73-85. PMID: 21432592.

Westerlund J, Ek U, Holmberg K, et al. The Conners' 10-item scale: findings in a total population of Swedish 10-11-year-old children. *Acta Paediatr* 2009;98(5):828-33. PMID: 19154524.

Winters KC, Lee S, Botzet A, et al. A Prospective Examination of the Association of Stimulant Medication History and Drug Use Outcomes among Community Samples of ADHD Youths. *J Child Adolesc Subst Abuse* 2011;20(4):314-329. PMID: 22582022.

Wu SH, Wang K, Chen Y, et al. Exploratory analysis of early treatment discontinuation and clinical outcomes of patients with attention-deficit/hyperactivity disorder. *Asia-Pacific Psychiatry* 2015.

Zima BT, Bussing R, Tang L, et al. Quality of care for childhood attention-deficit/hyperactivity disorder in a managed care medicaid program. *J Am Acad Child Adolesc Psychiatry* 2010;49(12):1225-37, 1237.e1-11. PMID: 21093772.

## **Does Not Include a Comparator of Interest**

Adler LA, Shaw DM, Spencer TJ, et al. Preliminary examination of the reliability and concurrent validity of the attention-deficit/hyperactivity disorder self-report scale v1.1 symptom checklist to rate symptoms of attention-deficit/hyperactivity disorder in adolescents. *J Child Adolesc Psychopharmacol* 2012;22(3):238-44. PMID: 22537184.

al Ansari A and Asiri MM. The impact of multimodal psychosocial intervention among children with attention deficit hyperactivity disorder. *Bahrain Medical Bulletin* 2012;34(1):1-6.

Alloway TP, Gathercole SE, Holmes J, et al. The diagnostic utility of behavioral checklists in identifying children with ADHD and children with working memory deficits. *Child Psychiatry Hum Dev* 2009;40(3):353-66. PMID: 19280339.

Amonn F, Frölich J, Breuer D, et al. Evaluation of a computer-based neuropsychological training in children with Attention-Deficit Hyperactivity Disorder (ADHD). *NeuroRehabilitation* 2013;32(3):555-562.

An L, Cao XH, Cao QJ, et al. Methylphenidate normalizes resting-state brain dysfunction in boys with attention deficit hyperactivity disorder. *Neuropsychopharmacology* 2013;38(7):1287-95. PMID: 23340519.

Araki A, Ikegami M, Okayama A, et al. Improved prefrontal activity in AD/HD children treated with atomoxetine: a NIRS study. *Brain Dev* 2015;37(1):76-87. PMID: 24767548.

Arnold LE, Bozzolo DR, Hodgkins P, et al. Switching from oral extended-release methylphenidate to the methylphenidate transdermal system: continued attention-deficit/hyperactivity disorder symptom control and tolerability after abrupt conversion. *Curr Med Res Opin* 2010;26(1):129-37. PMID: 19916704.

Arns M, Drinkenburg W and Leon Kenemans J. The effects of QEEG-informed neurofeedback in ADHD: an open-label pilot study. *Appl Psychophysiol Biofeedback* 2012;37(3):171-80. PMID: 22446998.

Atzori P, Usala T, Carucci S, et al. Predictive factors for persistent use and compliance of immediate-release methylphenidate: a 36-month naturalistic study. *J Child Adolesc Psychopharmacol* 2009;19(6):673-81. PMID: 20035585.

Babinski DE, Pelham WE, Jr., Molina BS, et al. Late adolescent and young adult outcomes of girls diagnosed with ADHD in childhood: an exploratory investigation. *J Atten Disord* 2011;15(3):204-14. PMID: 20562386.

Balazs J, Dallos G, Keresztesy A, et al. Methylphenidate treatment and dyskinesia in children with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2011;21(2):133-8. PMID: 21486166.

Blader JC, Pliszka SR, Kafantaris V, et al. Prevalence and Treatment Outcomes of Persistent Negative Mood Among Children with Attention-Deficit/Hyperactivity Disorder and Aggressive Behavior. *J Child Adolesc Psychopharmacol* 2016;26(2):164-73. PMID: 26745211.

Bos DJ, Oranje B, Veerhoek ES, et al. Reduced Symptoms of Inattention after Dietary Omega-3 Fatty Acid Supplementation in Boys with and without Attention Deficit/Hyperactivity Disorder. *Neuropsychopharmacology* 2015;40(10):2298-306. PMID: 25790022.

Breuer D, Gortz-Dorten A, Rothenberger A, et al. Assessment of daily profiles of ADHD and ODD symptoms, and symptomatology related to ADHD medication, by parent and teacher ratings. *Eur Child Adolesc Psychiatry* 2011;20 (Suppl 2):S289-96. PMID: 21901413.

Brossard-Racine M, Shevell M, Snider L, et al. Persistent handwriting difficulties in children with ADHD after treatment with stimulant medication. *Journal of Attention Disorders* 2015;19(7):620-629.

Brule D, Sule L, Landau-Halpern B, et al. An open-label pilot study of homeopathic treatment of attention deficit hyperactivity disorder in children and youth. *Forsch Komplementmed* 2014;21(5):302-9. PMID: 25427521.

Buyck I and Wiersema JR. Resting electroencephalogram in attention deficit hyperactivity disorder: developmental course and diagnostic value. *Psychiatry Res* 2014;216(3):391-7. PMID: 24656956.

Chiarenza GA, Chabot R, Isenhardt R, et al. The quantified EEG characteristics of responders and non-responders to long-term treatment with atomoxetine in children with attention deficit hyperactivity disorders. *International Journal of Psychophysiology* 2016;104:44-52.

Childress AC, Cutler AJ, Saylor K, et al. Participant-perceived quality of life in a long-term, open-label trial of lisdexamfetamine dimesylate in adolescents with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2014;24(4):210-7. PMID: 24815910.

Chou WJ, Chen SJ, Chen YS, et al. Remission in children and adolescents diagnosed with attention-deficit/hyperactivity disorder via an effective and tolerable titration scheme for osmotic release oral system methylphenidate. *J Child Adolesc Psychopharmacol* 2012;22(3):215-25. PMID: 22537358.

Ciesielski HA, Tamm L, Vaughn AJ, et al. Academic Skills Groups for Middle School Children With ADHD in the Outpatient Mental Health Setting: An Open Trial. *J Atten Disord* 2015. PMID: 25926629.

Cronin SD, Gottschlich MM, Gose LM, et al. Zolpidem and Sleep in Pediatric Burn Patients with Attention Deficit/Hyperactivity Disorder. *Pediatr Nurs* 2015;41(3):132-4, 140. PMID: 26201171.

Dalsgaard S, Mortensen PB, Frydenberg M, et al. ADHD, stimulant treatment in childhood and subsequent substance abuse in adulthood - a naturalistic long-term follow-up study. *Addict Behav* 2014;39(1):325-8. PMID: 24090624.

Dave UP, Dingankar SR, Saxena VS, et al. An open-label study to elucidate the effects of standardized Bacopa monnieri extract in the management of symptoms of attention-deficit hyperactivity disorder in children. *Adv Mind Body Med* 2014;28(2):10-5. PMID: 24682000.

Davis C, Cohen A, Davids M, et al. Attention- deficit/hyperactivity disorder in relation to addictive behaviors: A moderated-mediation analysis of personality risk factors and sex. *Frontiers in Psychiatry* 2015;6(MAR).

Diaz-Orueta U, Garcia-Lopez C, Crespo-Eguilaz N, et al. AULA virtual reality test as an attention measure: convergent validity with Conners' Continuous Performance Test. *Child Neuropsychol* 2014;20(3):328-42. PMID: 23638628.

Dittmann RW, Banaschewski T, Schacht A, et al. Findings from the observational COMPLY study in children and adolescents with ADHD: core symptoms, ADHD-related difficulties, and patients' emotional expression during psychostimulant or nonstimulant ADHD treatment. *Atten Defic Hyperact Disord* 2014;6(4):291-302. PMID: 24705867.

Dittmann RW, Wehmeier PM, Schacht A, et al. Atomoxetine treatment and ADHD-related difficulties as assessed by adolescent patients, their parents and physicians. *Child Adolesc Psychiatry Ment Health* 2009;3(1):21. PMID: 19703299.

Dittmann RW, Wehmeier PM, Schacht A, et al. Self-esteem in adolescent patients with attention-deficit/hyperactivity disorder during open-label atomoxetine treatment: psychometric evaluation of the Rosenberg Self-Esteem Scale and clinical findings. *Atten Defic Hyperact Disord* 2009;1(2):187-200. PMID: 20234829.

Dopfner M, Breuer D, Walter D, et al. An observational study of once-daily modified-release methylphenidate in ADHD: the effect of previous treatment on ADHD symptoms, other externalising symptoms and quality-of-life outcomes. *Eur Child Adolesc Psychiatry* 2011;20(Suppl 2):S277-88. PMID: 21901414.



- Döpfner M, Görtz-Dorten A, Breuer D, et al. An observational study of once-daily modified-release methylphenidate in ADHD: Effectiveness on symptoms and impairment, and safety. *European Child & Adolescent Psychiatry* 2011;20(Suppl 2):S243-S255.
- Dupuy FE, Clarke AR, Barry RJ, et al. EEG differences between the Combined and Inattentive types of attention-deficit/hyperactivity disorder in girls: A further investigation. *Clinical EEG and Neuroscience* 2014;45(4):231-237.
- Dura-Trave T and Gallinas-Victoriano F. Caloric and nutrient intake in children with attention deficit hyperactivity disorder treated with extended-release methylphenidate: analysis of a cross-sectional nutrition survey. *JRSM Open* 2014;5(2):2042533313517690. PMID: 25057372.
- Dura-Trave T, Yoldi-Petri ME, Gallinas-Victoriano F, et al. Effects of osmotic-release methylphenidate on height and weight in children with attention-deficit hyperactivity disorder (ADHD) following up to four years of treatment. *J Child Neurol* 2012;27(5):604-9. PMID: 22190507.
- Efron D, Lycett K and Sciberras E. Use of sleep medication in children with ADHD. *Sleep Med* 2014;15(4):472-5. PMID: 24684977.
- Epstein JN, Langberg JM, Lichtenstein PK, et al. Attention-deficit/hyperactivity disorder outcomes for children treated in community-based pediatric settings. *Arch Pediatr Adolesc Med* 2010;164(2):160-5. PMID: 20124145.
- Ercan ES, Akyol Ardic U, Kabukcu Basay B, et al. Atomoxetine response in the inattentive and combined subtypes of attention deficit hyperactivity disorder: a retrospective chart review. *Atten Defic Hyperact Disord* 2013;5(4):377-85. PMID: 23737214.
- Escolano C, Navarro-Gil M, Garcia-Campayo J, et al. The effects of individual upper alpha neurofeedback in ADHD: an open-label pilot study. *Appl Psychophysiol Biofeedback* 2014;39(3-4):193-202. PMID: 25199660.
- Faraone SV, Hammerness PG and Wilens TE. Reliability and Validity of the Before-School Functioning Scale in Children With ADHD. *J Atten Disord* 2015. PMID: 25575616.
- Faraone SV, Spencer TJ, Kollins SH, et al. Effects of lisdexamfetamine dimesylate treatment for ADHD on growth. *J Am Acad Child Adolesc Psychiatry* 2010;49(1):24-32. PMID: 20215923.
- Fernandez-Jaen A, Fernandez-Mayoralas DM, Calleja Perez B, et al. Atomoxetine for attention deficit hyperactivity disorder in mental retardation. *Pediatr Neurol* 2010;43(5):341-7. PMID: 20933178.
- Fernandez-Jaen A, Fernandez-Mayoralas DM, Calleja-Perez B, et al. Efficacy of atomoxetine for the treatment of ADHD symptoms in patients with pervasive developmental disorders: a prospective, open-label study. *J Atten Disord* 2013;17(6):497-505. PMID: 22366240.

Fernandez-Jaen A, Fernandez-Mayoralas DM, Pardos A, et al. Clinical and cognitive response to extended-release methylphenidate (Medikinet) in attention deficit/hyperactivity disorder: efficacy evaluation. *Adv Ther* 2009;26(12):1097-110. PMID: 20082241.

Findling RL, Cutler AJ, Saylor K, et al. A long-term open-label safety and effectiveness trial of lisdexamfetamine dimesylate in adolescents with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2013;23(1):11-21. PMID: 23410138.

Findling RL, Ginsberg LD, Jain R, et al. Effectiveness, safety, and tolerability of lisdexamfetamine dimesylate in children with attention-deficit/hyperactivity disorder: an open-label, dose-optimization study. *J Child Adolesc Psychopharmacol* 2009;19(6):649-62. PMID: 20035583.

Findling RL, Katic A, Rubin R, et al. A 6-month, open-label, extension study of the tolerability and effectiveness of the methylphenidate transdermal system in adolescents diagnosed with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2010;20(5):365-75. PMID: 20973707.

Findling RL, Wigal SB, Bukstein OG, et al. Long-term tolerability of the methylphenidate transdermal system in pediatric attention-deficit/hyperactivity disorder: a multicenter, prospective, 12-month, open-label, uncontrolled, phase III extension of four clinical trials. *Clin Ther* 2009;31(8):1844-55. PMID: 19808143.

Ford-Jones PC. Misdiagnosis of attention deficit hyperactivity disorder: 'Normal behaviour' and relative maturity. *Paediatr Child Health* 2015;20(4):200-2. PMID: 26038639.

Frazier TW, Weiss M, Hodgkins P, et al. Time course and predictors of health-related quality of life improvement and medication satisfaction in children diagnosed with attention-deficit/hyperactivity disorder treated with the methylphenidate transdermal system. *J Child Adolesc Psychopharmacol* 2010;20(5):355-64. PMID: 20973706.

Froehlich TE, Antonini TN, Brinkman WB, et al. Mediators of methylphenidate effects on math performance in children with attention-deficit hyperactivity disorder. *J Dev Behav Pediatr* 2014;35(2):100-7. PMID: 24509055.

Frölich J, Breuer D, Görtz-Dorten A, et al. Effects of switching to once-daily modified-release methylphenidate from previous treatment with other psychostimulants in children and adolescents with ADHD: An observational study with clinician, parent, and teacher evaluations. *Journal of Clinical Psychopharmacology* 2014;34(1):168-171. PMID: 2014-03584-032.

Fuentes J, Danckaerts M, Cardo E, et al. Long-term quality-of-life and functioning comparison of atomoxetine versus other standard treatment in pediatric attention-deficit/hyperactivity disorder. *J Clin Psychopharmacol* 2013;33(6):766-74. PMID: 23963057.

Gadow KD, Brown NV, Arnold LE, et al. Severely Aggressive Children Receiving Stimulant Medication Versus Stimulant and Risperidone: 12-Month Follow-Up of the TOSCA Trial. *J Am Acad Child Adolesc Psychiatry* 2016;55(6):469-78. PMID: 27238065.

Gerwe M, Stollhoff K, Mossakowski J, et al. Tolerability and effects of OROS(R) MPH (Concerta (R)) on functioning, severity of disease and quality of life in children and adolescents with ADHD: results from a prospective, non-interventional trial. *Atten Defic Hyperact Disord* 2009;1(2):175-86. PMID: 21432582.

Golubchik P, Golubchik L, Sever JM, et al. The beneficial effect of methylphenidate in ADHD with comorbid separation anxiety. *Int Clin Psychopharmacol* 2014;29(5):274-8. PMID: 24743562.

Golubchik P, Sever J and Weizman A. Methylphenidate treatment in children with attention deficit hyperactivity disorder and comorbid social phobia. *International Clinical Psychopharmacology* 2014;29(4):212-215.

Gormez V, Avery B and Mann H. Switching from immediate release to sustained release methylphenidate in the treatment of children and adolescents with attention deficit/hyperactivity disorder. *Eur Rev Med Pharmacol Sci* 2013;17(17):2345-9. PMID: 24065228.

Grizenko N, Rodrigues Pereira RM and Joobar R. Sensitivity of scales to evaluate change in symptomatology with psychostimulants in different ADHD subtypes. *J Can Acad Child Adolesc Psychiatry* 2013;22(2):153-8. PMID: 23667362.

Guderjahn L, Gold A, Stadler G, et al. Self-regulation strategies support children with ADHD to overcome symptom-related behavior in the classroom. *Atten Defic Hyperact Disord* 2013;5(4):397-407. PMID: 24062181.

Haertling F, Mueller B and Bilke-Hentsch O. Effectiveness and safety of a long-acting, once-daily, two-phase release formulation of methylphenidate (Ritalin® LA) in school children under daily practice conditions. *ADHD Attention Deficit and Hyperactivity Disorders* 2015;7(2):157-164.

Halperin JM, Marks DJ, Bedard AC, et al. Training executive, attention, and motor skills: a proof-of-concept study in preschool children With ADHD. *J Atten Disord* 2013;17(8):711-21. PMID: 22392551.

Hammer R, Tennekoon M, Cooke GE, et al. Feedback associated with expectation for larger-reward improves visuospatial working memory performances in children with ADHD. *Dev Cogn Neurosci* 2015;14:38-49. PMID: 26142072.

Hammerness P, Doyle R, Kotarski M, et al. Atomoxetine in children with attention-deficit hyperactivity disorder with prior stimulant therapy: a prospective open-label study. *Eur Child Adolesc Psychiatry* 2009;18(8):493-8. PMID: 19377865.

Hammerness P, Fried R, Petty C, et al. Assessment of cognitive domains during treatment with OROS methylphenidate in adolescents with ADHD. *Child Neuropsychol* 2014;20(3):319-27. PMID: 23639146.

Hammerness P, Joshi G, Doyle R, et al. Do stimulants reduce the risk for cigarette smoking in youth with attention-deficit hyperactivity disorder? A prospective, long-term, open-label study of extended-release methylphenidate. *J Pediatr* 2013;162(1):22-7.e2. PMID: 22878114.

Hammerness P, Wilens T, Mick E, et al. Cardiovascular effects of longer-term, high-dose OROS methylphenidate in adolescents with attention deficit hyperactivity disorder. *J Pediatr* 2009;155(1):84-9, 89.e1. PMID: 19394037.

Hansen MV, Darling L and Holst H. Safety and Tolerability of Lisdexamfetamine: A Retrospective Cohort Study. *CNS Drugs* 2015;29(5):415-23. PMID: 25920467.

Harfterkamp M, Buitelaar JK, Minderaa RB, et al. Long-term treatment with atomoxetine for attention-deficit/hyperactivity disorder symptoms in children and adolescents with autism spectrum disorder: an open-label extension study. *J Child Adolesc Psychopharmacol* 2013;23(3):194-9. PMID: 23578015.

Harstad EB, Weaver AL, Katusic SK, et al. ADHD, stimulant treatment, and growth: a longitudinal study. *Pediatrics* 2014;134(4):e935-44. PMID: 25180281.

Helseth SA, Waschbusch DA, Gnagy EM, et al. Effects of behavioral and pharmacological therapies on peer reinforcement of deviancy in children with ADHD-only, ADHD and conduct problems, and controls. *J Consult Clin Psychol* 2015;83(2):280-92. PMID: 25495357.

Hinz M, Stein A, Neff R, et al. Treatment of attention deficit hyperactivity disorder with monoamine amino acid precursors and organic cation transporter assay interpretation. *Neuropsychiatric Disease and Treatment* 2011;7(1):31-38.

Howard AL, Molina BS, Swanson JM, et al. Developmental progression to early adult binge drinking and marijuana use from worsening versus stable trajectories of adolescent attention deficit/hyperactivity disorder and delinquency. *Addiction* 2015;110(5):784-95. PMID: 25664657.

Ishii-Takahashi A, Takizawa R, Nishimura Y, et al. Neuroimaging-Aided Prediction of the Effect of Methylphenidate in Children with Attention-Deficit Hyperactivity Disorder: A Randomized Controlled Trial. *Neuropsychopharmacology* 2015;40(12):2676-85. PMID: 25936640.

Jang B, Song J, Kim J, et al. Equine-Assisted Activities and Therapy for Treating Children with Attention-Deficit/Hyperactivity Disorder. *J Altern Complement Med* 2015;21(9):546-53. PMID: 26167851.

Javelot H, Glay-Ribau C, Ligier F, et al. Methylphenidate-risperidone combination in child psychiatry: A retrospective analysis of 44 cases. *Ann Pharm Fr* 2014;72(3):164-77. PMID: 24780832.

Jin L, Xu W, Krefetz D, et al. Clinical outcomes from an open-label study of edivoxetine use in pediatric patients with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2013;23(3):200-7. PMID: 23607409.

Johnston BA, Coghill D, Matthews K, et al. Predicting methylphenidate response in attention deficit hyperactivity disorder: a preliminary study. *J Psychopharmacol* 2015;29(1):24-30. PMID: 25237119.

Kądziela-Olech H. The measurement of the symptoms of ADHD in the NICHQ vanderbilt assessment scale for parent (VADPRS) and for teacher (VADTRS). *Psychiatria i Psychologia Kliniczna* 2014;14(4):277-283.

Katic A, Ginsberg L, Jain R, et al. Clinically relevant changes in emotional expression in children with ADHD treated with lisdexamfetamine dimesylate. *J Atten Disord* 2012;16(5):384-97. PMID: 21173426.

Kelly AS, Rudser KD, Dengel DR, et al. Cardiac autonomic dysfunction and arterial stiffness among children and adolescents with attention deficit hyperactivity disorder treated with stimulants. *J Pediatr* 2014;165(4):755-9. PMID: 25015574.

Khajehpiri Z, Mahmoudi-Gharaei J, Faghihi T, et al. Adverse reactions of Methylphenidate in children with attention deficit-hyperactivity disorder: Report from a referral center. *Journal of Research in Pharmacy Practice* 2014;3(4):130-136.

Khodadust N, Jalali AH, Ahmadzad-Asl M, et al. Comparison of Two brands of Methylphenidate (Stimdate((R)) vs. Ritalin((R))) in Children and Adolescents with Attention Deficit Hyperactivity Disorder: A Double-Blind, Randomized Clinical Trial. *Iran J Psychiatry Behav Sci* 2012;6(1):26-32. PMID: 24644466.

Kim E, Cheon KA, Joung YS, et al. The relationship between symptomatic and functional changes of Korean children and adolescents with attention-deficit/hyperactivity disorder treated with osmotic-controlled release oral delivery system-methylphenidate. *Clin Neuropharmacol* 2015;38(1):30-5. PMID: 25580917.

Kim HJ, Yang J and Lee MS. Changes of Heart Rate Variability during Methylphenidate Treatment in Attention-Deficit Hyperactivity Disorder Children: A 12-Week Prospective Study. *Yonsei Med J* 2015;56(5):1365-71. PMID: 26256981.

Kim HW, Kim SO, Shon S, et al. Effect of methylphenidate on height and weight in Korean children and adolescents with attention-deficit/hyperactivity disorder: a retrospective chart review. *J Child Adolesc Psychopharmacol* 2014;24(8):448-53. PMID: 25285915.

Kim HW, Yoon IY, Cho SC, et al. The effect of OROS methylphenidate on the sleep of children with attention-deficit/hyperactivity disorder. *Int Clin Psychopharmacol* 2010;25(2):107-15. PMID: 20093941.

Kim SH, Han DH, Lee YS, et al. Baduk (the game of go) improved cognitive function and brain activity in children with attention deficit hyperactivity disorder. *Psychiatry Investigation* 2014;11(2):143-151.

Kobel M, Bechtel N, Weber P, et al. Effects of methylphenidate on working memory functioning in children with attention deficit/hyperactivity disorder. *Eur J Paediatr Neurol* 2009;13(6):516-23. PMID: 19056305.

Kordon A, Stollhoff K, Niederkirchner K, et al. Exploring the impact of once-daily OROS(R) methylphenidate (MPH) on symptoms and quality of life in children and adolescents with ADHD transitioning from immediate-release MPH. *Postgrad Med* 2011;123(5):27-38. PMID: 21904084.

Lambert MC, Reid R, Prosser B, et al. A Survival Analysis of Psychostimulant Prescriptions in New South Wales from 1990 to 2010. *J Child Adolesc Psychopharmacol* 2015;25(6):475-81. PMID: 26218772.

Leisman G, Melillo R, Thum S, et al. The effect of hemisphere specific remediation strategies on the academic performance outcome of children with ADD/ADHD. *Int J Adolesc Med Health* 2010;22(2):275-83. PMID: 21061929.

Liao YC, Guo NW, Lei SH, et al. Electroencephalogram valid rate in simple reaction time task as an easy index of children's attention functions. *Pediatr Int* 2015;57(5):930-5. PMID: 25925420.

Lim CG, Lee TS, Guan C, et al. A brain-computer interface based attention training program for treating attention deficit hyperactivity disorder. *PLoS One* 2012;7(10):e46692. PMID: 23115630.

Loren RE, Vaughn AJ, Langberg JM, et al. Effects of an 8-session behavioral parent training group for parents of children with ADHD on child impairment and parenting confidence. *J Atten Disord* 2015;19(2):158-66. PMID: 23599209.

Lufi D, Bassin-Savion S and Rubel L. The effect of methylphenidate on sustained attention among adolescents with attention-deficit hyperactivity disorder. *Neurocase* 2015;21(6):802-808.

Mahon AD, Woodruff ME, Horn MP, et al. Effect of stimulant medication use by children with ADHD on heart rate and perceived exertion. *Adapt Phys Activ Q* 2012;29(2):151-60. PMID: 22467834.

Malik TA and Tariq N. Parent training in reduction of attention-deficit/hyperactivity disorder and oppositional defiant disorder symptoms in children. *Pakistan Journal of Psychological Research* 2014;29(1):151-169.

Manos M, Frazier TW, Landgraf JM, et al. HRQL and medication satisfaction in children with ADHD treated with the methylphenidate transdermal system. *Curr Med Res Opin* 2009;25(12):3001-10. PMID: 19849639.

Masi G, Gagliano A, Siracusano R, et al. Aripirazole in children with Tourette's disorder and co-morbid attention-deficit/hyperactivity disorder: A 12-week, open-label, preliminary study. *Journal of Child and Adolescent Psychopharmacology* 2012;22(2):120-125.

McCarthy A, Asghar S, Wilens T, et al. Using a Brief Parent-Report Measure to Track Outcomes for Children and Teens with ADHD. *Child Psychiatry Hum Dev* 2015. PMID: 26271346.

Mikolajczyk R, Horn J, Schmedt N, et al. Injury prevention by medication among children with attention-deficit/hyperactivity disorder: a case-only study. *JAMA Pediatr* 2015;169(4):391-5. PMID: 25686215.

Moungnoi P and Maipang P. Long-term effects of short-acting methylphenidate on growth rates of children with attention deficit hyperactivity disorder at Queen Sirikit National Institute of Child Health. *J Med Assoc Thai* 2011;94(Suppl 3):S158-63. PMID: 22043770.

Na KS, Lee SI, Hong SD, et al. Effect of osmotic-release oral system methylphenidate on learning skills in adolescents with attention-deficit/hyperactivity disorder: an open-label study. *Int Clin Psychopharmacol* 2013;28(4):184-92. PMID: 23587983.

Nagashima M, Monden Y, Dan I, et al. Acute neuropharmacological effects of atomoxetine on inhibitory control in ADHD children: a fNIRS study. *Neuroimage Clin* 2014;6:192-201. PMID: 25379431.

Nair V and Mahadevan S. Randomised controlled study-efficacy of clonidine versus carbamazepine in children with ADHD. *J Trop Pediatr* 2009;55(2):116-21. PMID: 19203986.

Niederkirchner K, Slawik L, Wermelskirchen D, et al. Transitioning to OROS((R)) methylphenidate from atomoxetine is effective in children and adolescents with ADHD. *Expert Rev Neurother* 2011;11(4):499-508. PMID: 21469923.

Park SY, Kim EJ and Cheon KA. Association between 5-HTTLPR Polymorphism and Tics after Treatment with Methylphenidate in Korean Children with Attention-Deficit/Hyperactivity Disorder. *Journal of Child and Adolescent Psychopharmacology* 2015;25(8):633-640.

Paton K, Hammond P, Barry E, et al. Methylphenidate improves some but not all measures of attention, as measured by the TEA-Ch in medication-naive children with ADHD. *Child Neuropsychol* 2014;20(3):303-18. PMID: 23639119.

Pfiffner LJ, Villodas M, Kaiser N, et al. Educational outcomes of a collaborative school-home behavioral intervention for ADHD. *Sch Psychol Q* 2013;28(1):25-36. PMID: 23506023.

Piepmeier AT, Shih CH, Whedon M, et al. The effect of acute exercise on cognitive performance in children with and without ADHD. *Journal of Sport and Health Science* 2015;4(1):97-104.

Poel SS, Bollmann S, Ghisleni C, et al. Age dependent electroencephalographic changes in attention-deficit/hyperactivity disorder (ADHD). *Clin Neurophysiol* 2014;125(8):1626-38. PMID: 24582383.

Pollak Y, Shomaly HB, Weiss PL, et al. Methylphenidate effect in children with ADHD can be measured by an ecologically valid continuous performance test embedded in virtual reality. *CNS Spectr* 2010;15(2):125-30. PMID: 20414157.

Poulton AS, Bui Q, Melzer E, et al. Stimulant medication effects on growth and bone age in children with attention-deficit/hyperactivity disorder: a prospective cohort study. *Int Clin Psychopharmacol* 2015. PMID: 26544899.

Poulton AS, Melzer E, Tait PR, et al. Growth and pubertal development of adolescent boys on stimulant medication for attention deficit hyperactivity disorder. *Med J Aust* 2013;198(1):29-32. PMID: 23330767.

Powell SG, Frydenberg M and Thomsen PH. The effects of long-term medication on growth in children and adolescents with ADHD: an observational study of a large cohort of real-life patients. *Child Adolesc Psychiatry Ment Health* 2015;9:50. PMID: 26516345.

Radziuk AL, Kieling RR, Santos K, et al. Methylphenidate improves the quality of life of children and adolescents with ADHD and difficult-to-treat epilepsies. *Epilepsy Behav* 2015;46:215-20. PMID: 25940104.

Ramtvedt BE and Sundet K. Relationships between computer-based testing and behavioral ratings in the assessment of attention and activity in a pediatric ADHD stimulant crossover trial. *Clin Neuropsychol* 2014;28(7):1146-61. PMID: 25249305.

Rockhill CM, Tse YJ, Fesinmeyer MD, et al. Telepsychiatrists' Medication Treatment Strategies in the Children's Attention-Deficit/Hyperactivity Disorder Telemental Health Treatment Study. *J Child Adolesc Psychopharmacol* 2015. PMID: 26258927.

Rothenberger A, Becker A, Breuer D, et al. An observational study of once-daily modified-release methylphenidate in ADHD: Quality of life, satisfaction with treatment and adherence. *European Child & Adolescent Psychiatry* 2011;20(Suppl 2):S257-S265.

Sahin S, Yuce M, Alacam H, et al. Effect of methylphenidate treatment on appetite and levels of leptin, ghrelin, adiponectin, and brain-derived neurotrophic factor in children and adolescents with attention deficit and hyperactivity disorder. *Int J Psychiatry Clin Pract* 2014;18(4):280-7. PMID: 24994482.

Sangal RB and Sangal JM. Use of EEG Beta-1 Power and Theta/Beta Ratio Over Broca's Area to confirm Diagnosis of Attention Deficit/Hyperactivity Disorder in Children. *Clin EEG Neurosci* 2015;46(3):177-82. PMID: 24973230.

Saylor K, Williams DW, Schuh KJ, et al. Effects of atomoxetine on self-reported high-risk behaviors and health-related quality of life in adolescents with ADHD. *Curr Med Res Opin* 2010;26(9):2087-95. PMID: 20642391.

Schreiber JM, Lanham DC, Trescher WH, et al. Variations in EEG discharges predict ADHD severity within individual Smith-Lemli-Opitz patients. *Neurology* 2014;83(2):151-9. PMID: 24920862.

Scott NG, Ripperger-Suhler J, Rajab MH, et al. Factors associated with atomoxetine efficacy for treatment of attention-deficit/hyperactivity disorder in children and adolescents. *J Child Adolesc Psychopharmacol* 2010;20(3):197-203. PMID: 20578932.



Shaywitz BA, Williams DW, Fox BK, et al. Reading outcomes of children and adolescents with attention-deficit/hyperactivity disorder and dyslexia following atomoxetine treatment. *J Child Adolesc Psychopharmacol* 2014;24(8):419-25. PMID: 25299355.

Shemmassian SK and Lee SS. Predictive Utility of Four Methods of Incorporating Parent and Teacher Symptom Ratings of ADHD for Longitudinal Outcomes. *J Clin Child Adolesc Psychol* 2015;1-12. PMID: 25643854.

Sibley MH, Pelham WE, Molina BS, et al. The role of early childhood ADHD and subsequent CD in the initiation and escalation of adolescent cigarette, alcohol, and marijuana use. *J Abnorm Psychol* 2014;123(2):362-74. PMID: 24886010.

Sibley MH, Smith BH, Evans SW, et al. Treatment response to an intensive summer treatment program for adolescents with ADHD. *Journal of Attention Disorders* 2012;16(6):443-448.

Song J, Kim SW, Hong HJ, et al. Association of SNAP-25, SLC6A2, and LPHN3 with OROS methylphenidate treatment response in attention-deficit/hyperactivity disorder. *Clin Neuropharmacol* 2014;37(5):136-41. PMID: 25229170.

Sprafkin J, Mattison RE, Gadow KD, et al. A brief DSM-IV-referenced teacher rating scale for monitoring behavioral improvement in ADHD and co-occurring symptoms. *J Atten Disord* 2011;15(3):235-45. PMID: 20228218.

Su Y, Li H, Chen Y, et al. Remission Rate and Functional Outcomes during a 6-Month Treatment with Osmotic-Release Oral-System Methylphenidate in Children with Attention-Deficit/Hyperactivity Disorder. *Journal of Clinical Psychopharmacology* 2015;35(5):525-534.

Sumner CR, Gathercole S, Greenbaum M, et al. Atomoxetine for the treatment of attention-deficit/hyperactivity disorder (ADHD) in children with ADHD and dyslexia. *Child Adolesc Psychiatry Ment Health* 2009;3:40. PMID: 20003507.

Sumner CR, Haynes VS, Teicher MH, et al. Does placebo response differ between objective and subjective measures in children with attention-deficit/hyperactivity disorder?. *Postgrad Med* 2010;122(5):52-61. PMID: 20861588.

Tamm L, Nakonezny PA and Hughes CW. An open trial of a metacognitive executive function training for young children with ADHD. *J Atten Disord* 2014;18(6):551-9. PMID: 22647287.

Tanidir IC, Tanidir C, Ozturk E, et al. Effects of atomoxetine on heart rhythm in children and adolescents. *Pediatr Int* 2015. PMID: 26096186.

Taşgın EC, Oner O, Yurtbasi P, et al. Effects of maternal symptom ratings and other clinical features on short-term treatment response to OROS methylphenidate in children and adolescents with adhd in a naturalistic clinical setting. *Klinik Psikofarmakoloji Bulteni* 2016;26(2):126-133.

Topczewski A. Attention deficit and hyperactivity disorder: a therapeutic option. *Einstein (Sao Paulo)* 2014;12(3):310-3. PMID: 25295451.

Torres A, Whitney J, Rao S, et al. Tolerability of atomoxetine for treatment of pediatric attention-deficit/hyperactivity disorder in the context of epilepsy. *Epilepsy Behav* 2011;20(1):95-102. PMID: 21146461.

Treuer T, Feng Q, Desai D, et al. Predictors of pharmacological treatment outcomes with atomoxetine or methylphenidate in patients with attention-deficit/hyperactivity disorder from China, Egypt, Lebanon, Russian Federation, Taiwan, and United Arab Emirates. *Int J Clin Pract* 2014;68(9):1152-60. PMID: 24703228.

Tsai CS, Huang YS, Wu CL, et al. Long-term effects of stimulants on neurocognitive performance of Taiwanese children with attention-deficit/hyperactivity disorder. *BMC Psychiatry* 2013;13:330. PMID: 24305033.

Turgay A, Ginsberg L, Sarkis E, et al. Executive function deficits in children with attention-deficit/hyperactivity disorder and improvement with lisdexamfetamine dimesylate in an open-label study. *J Child Adolesc Psychopharmacol* 2010;20(6):503-11. PMID: 21186969.

Tzang RF, Wang YC, Yeh CB, et al. Naturalistic exploration of the effect of osmotic release oral system-methylphenidate on remission rate and functional improvement in Taiwanese children with attention-deficit-hyperactivity disorder. *Psychiatry Clin Neurosci* 2012;66(1):53-63. PMID: 22250610.

Uebel-von Sandersleben H, Rothenberger A, Albrecht B, et al. Ginkgo biloba extract EGb 761(R) in children with ADHD. *Z Kinder Jugendpsychiatr Psychother* 2014;42(5):337-47. PMID: 25163996.

Uebel-von Sandersleben H, Rothenberger A, Albrecht B, et al. Ginkgo biloba Extract EGb 761® in Children with ADHD: Preliminary Findings of an Open Multilevel Dose-Finding Study. *Zeitschrift für Kinder- und Jugendpsychiatrie und Psychotherapie* 2014;42(5):337-347.

Vakula IN, Vasyanina YS, Gorbunova ZK, et al. Efficacy of Strattera in children and adolescents with attention deficit hyperactivity disorder. *Neuroscience and Behavioral Physiology* 2010;40(9):1034-1037.

Valdizan-Uson JR, Canovas-Martinez A, De Lucas-Taracena MT, et al. Response to methylphenidate by adult and pediatric patients with attention-deficit/hyperactivity disorder: the Spanish multicenter DIHANA study. *Neuropsychiatr Dis Treat* 2013;9:211-8. PMID: 23430373.

van der Oord S, Bögels SM and Peijnenburg D. The effectiveness of mindfulness training for children with ADHD and mindful parenting for their parents. *Journal of Child and Family Studies* 2012;21(1):139-147.

Vaughn AJ, Epstein JN, Rausch J, et al. Relation between outcomes on a continuous performance test and ADHD symptoms over time. *J Abnorm Child Psychol* 2011;39(6):853-64. PMID: 21476025.

Visser SN, Bitsko RH, Danielson ML, et al. Treatment of Attention Deficit/Hyperactivity Disorder among Children with Special Health Care Needs. *J Pediatr* 2015;166(6):1423-30.e1-2. PMID: 25841538.

Walitza S, Kampf K, Artamonov N, et al. No elevated genomic damage in children and adolescents with attention deficit/hyperactivity disorder after methylphenidate therapy. *Toxicol Lett* 2009;184(1):38-43. PMID: 19015014.

Wang LJ, Chen CK and Huang YS. Gender Differences in the Behavioral Symptoms and Neuropsychological Performance of Patients with Attention-Deficit/Hyperactivity Disorder Treated with Methylphenidate: A Two-Year Follow-up Study. *J Child Adolesc Psychopharmacol* 2015;25(6):501-8. PMID: 26262904.

Wang LJ, Chen CK and Huang YS. Neurocognitive performance and behavioral symptoms in patients with attention-deficit/hyperactivity disorder during twenty-four months of treatment with methylphenidate. *J Child Adolesc Psychopharmacol* 2015;25(3):246-53. PMID: 25574708.

Wang LJ, Huang YS, Chiang YL, et al. Clinical symptoms and performance on the Continuous Performance Test in children with attention deficit hyperactivity disorder between subtypes: a natural follow-up study for 6 months. *BMC Psychiatry* 2011;11:65. PMID: 21504587.

Wang LJ, Wu CC, Lee SY, et al. Salivary neurosteroid levels and behavioural profiles of children with attention-deficit/hyperactivity disorder during six months of methylphenidate treatment. *J Child Adolesc Psychopharmacol* 2014;24(6):336-40. PMID: 24956271.

Warshaw EM, Squires L, Li Y, et al. Methylphenidate transdermal system: a multisite, open-label study of dermal reactions in pediatric patients diagnosed with ADHD. *Prim Care Companion J Clin Psychiatry* 2010;12(6). PMID: 21494336.

Webster-Stratton C, Reid MJ and Beauchaine TP. One-year follow-up of combined parent and child intervention for young children with ADHD. *J Clin Child Adolesc Psychol* 2013;42(2):251-61. PMID: 23020199.

Wehmeier PM, Dittmann RW and Banaschewski T. Treatment compliance or medication adherence in children and adolescents on ADHD medication in clinical practice: results from the COMPLY observational study. *Atten Defic Hyperact Disord* 2015;7(2):165-74. PMID: 25416667.

Wehmeier PM, Dittmann RW, Schacht A, et al. Morning and evening behavior in children and adolescents treated with atomoxetine once daily for Attention-Deficit/Hyperactivity Disorder (ADHD): Findings from two 24-week, open-label studies. *Child and Adolescent Psychiatry and Mental Health* 2009;3.

Wietecha LA, Williams DW, Herbert M, et al. Atomoxetine treatment in adolescents with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2009;19(6):719-30. PMID: 20035590.

Wigal SB, Maltas S, Crinella F, et al. Reading performance as a function of treatment with lisdexamfetamine dimesylate in elementary school children diagnosed with ADHD. *J Atten Disord* 2012;16(1):23-33. PMID: 20978273.

Yilmaz A, Gokcen C, Fettahoglu EC, et al. The effect of methylphenidate on executive functions in children with Attention-Deficit Hyperactivity Disorder. *Klinik Psikofarmakoloji Bulteni* 2013;23(2):162-170.

Zelnik N and Terkel-Dawer R. The clinical profile of children with ADHD that require OROS-methylphenidate combined with shorter-acting formulations. *Atten Defic Hyperact Disord* 2015;7(4):313-8. PMID: 25838111.

## **Does Not Include Outcomes of Interest**

Adisetiyo V, Jensen JH, Tabesh A, et al. Multimodal MR imaging of brain iron in attention deficit hyperactivity disorder: a noninvasive biomarker that responds to psychostimulant treatment?. *Radiology* 2014;272(2):524-32. PMID: 24937545.

Adriaanse M, van Domburgh L, Zwirs B, et al. School-based screening for psychiatric disorders in Moroccan-Dutch youth. *Child and Adolescent Psychiatry and Mental Health* 2015;9(1).

Alba-Sanchez F, Yanez-Suarez O and Brust-Carmona H. Assisted diagnosis of attention-deficit hyperactivity disorder through EEG bandpower clustering with self-organizing maps. *Conf Proc IEEE Eng Med Biol Soc* 2010;2447-50. PMID: 21095960.

Amer DA, Rakhawy MY and El Kholy SH. Quantitative EEG in children with attention deficit hyperactivity disorder. *Egyptian Journal of Neurology, Psychiatry and Neurosurgery* 2010;47(3):399-406.

Amiri S, Shafiee-Kandjani AR, Noorazar SG, et al. Knowledge and Attitude of Parents of Children With Attention Deficit Hyperactivity Disorder Towards the Illness. *Iran J Psychiatry Behav Sci* 2016;10(2):e122. PMID: 27803715.

Anjana Y, Khaliq F and Vaney N. Event-related potentials study in attention deficit hyperactivity disorder. *Funct Neurol* 2010;25(2):87-92. PMID: 20923606.

Bailey UL, Derefinko KJ, Milich R, et al. The effects of stimulant medication on free recall of story events among children with ADHD. *Journal of Psychopathology and Behavioral Assessment* 2011;33(4):409-419.

Bakhtadze S, Beridze M, Geladze N, et al. Effect of EEG Biofeedback on Cognitive Flexibility in Children with Attention Deficit Hyperactivity Disorder With and Without Epilepsy. *Appl Psychophysiol Biofeedback* 2015. PMID: 26346570.

Barry RJ, Clarke AR, Hajos M, et al. Acute atomoxetine effects on the EEG of children with attention-deficit/hyperactivity disorder. *Neuropharmacology* 2009;57(7-8):702-707.

Becker A, Rothenberger A and Sohn A. Six years ahead: a longitudinal analysis regarding course and predictive value of the Strengths and Difficulties Questionnaire (SDQ) in children and adolescents. *European Child and Adolescent Psychiatry* 2015;24(6):715-725.

Bekker J, Bruck D and Sciberras E. Congruent validity of the Strengths and Difficulties Questionnaire to screen for comorbidities in children with ADHD. *Journal of Attention Disorders* 2016;20(10):879-888. PMID: 2016-42395-007.

Beyer Von Morgenstern S, Becker I and Sinzig J. Improvement of facial affect recognition in children and adolescents with attention-deficit/hyperactivity disorder under methylphenidate. *Acta Neuropsychiatrica* 2013;26(4):202-208.

Bigorra A, Garolera M, Guijarro S, et al. Long-term far-transfer effects of working memory training in children with ADHD: a randomized controlled trial. *Eur Child Adolesc Psychiatry* 2015. PMID: 26669692.

Bigorra AG, M.; Guijarro, S.; Hervas, A.. Impact of working memory training on hot executive functions (decision-making and theory of mind) in children with ADHD: a randomized controlled trial. *Neuropsychiatry (London)* 2016;6(5):251-263.

Bilder RM, Loo SK, McGough JJ, et al. Cognitive Effects of Stimulant, Guanfacine, and Combined Treatment in Child and Adolescent Attention-Deficit/Hyperactivity Disorder. *J Am Acad Child Adolesc Psychiatry* 2016;55(8):667-73. PMID: 27453080.

Bink M, van Nieuwenhuizen C, Popma A, et al. Neurocognitive effects of neurofeedback in adolescents with ADHD: a randomized controlled trial. *J Clin Psychiatry* 2014;75(5):535-42. PMID: 24922488.

Cassuto H, Ben-Simon A and Berger I. Using environmental distractors in the diagnosis of ADHD. *Frontiers in Human Neuroscience* 2013(NOV).

Chelonis JJ, Johnson TA, Ferguson SA, et al. Effect of methylphenidate on motivation in children with attention-deficit/hyperactivity disorder. *Experimental and Clinical Psychopharmacology* 2011;19(2):145-153.

Chuang LY, Tsai YJ, Chang YK, et al. Effects of acute aerobic exercise on response preparation in a Go/No Go Task in children with ADHD: An ERP study. *Journal of Sport and Health Science* 2015;4(1):82-88.

Chutko LS, Surushkina SY, Nikishena IS, et al. Use of Adaptol in the treatment of attention deficit hyperactivity disorder in children. *Neuroscience and Behavioral Physiology* 2010;40(9):1038-1041.

Co JP, Johnson SA, Poon EG, et al. Electronic health record decision support and quality of care for children with ADHD. *Pediatrics* 2010;126(2):239-46. PMID: 20643719.

Dalsgaard S, Mortensen PB, Frydenberg M, et al. Association between Attention-Deficit Hyperactivity Disorder in childhood and schizophrenia later in adulthood. *Eur Psychiatry* 2014;29(4):259-63. PMID: 24016863.

de Jong CG, Van De Voorde S, Roeyers H, et al. Differential effects of atomoxetine on executive functioning and lexical decision in attention-deficit/hyperactivity disorder and reading disorder. *J Child Adolesc Psychopharmacol* 2009;19(6):699-707. PMID: 20035588.

DeVito EE, Blackwell AD, Clark L, et al. Methylphenidate improves response inhibition but not reflection-impulsivity in children with attention deficit hyperactivity disorder (ADHD). *Psychopharmacology (Berl)* 2009;202(1-3):531-9. PMID: 18818905.

Diamond G, Badir M, Sevilla P, et al. Comparison between neurological examination and computerized test of attention for suspected ADHD: Implications for assessment of a common childhood disability. *International Journal on Disability and Human Development* 2013;12(3):289-295.

Diomšina B, Rasmussen PD and Danilevičiute V. Clinical experience of long-term treatment with aripiprazole (abilify) in children and adolescents at the child and adolescent psychiatric clinic 1 in Roskilde, Denmark. *Acta Poloniae Pharmaceutica - Drug Research* 2015;72(3):597-606.

Fabiano GA, Pelham WE, Cunningham CE, et al. A waitlist-controlled trial of behavioral parent training for fathers of children with ADHD. *J Clin Child Adolesc Psychol* 2012;41(3):337-45. PMID: 22397639.

Fernandez de la Cruz L, Simonoff E, McGough JJ, et al. Treatment of children with attention-deficit/hyperactivity disorder (ADHD) and irritability: results from the multimodal treatment study of children with ADHD (MTA). *J Am Acad Child Adolesc Psychiatry* 2015;54(1):62-70.e3. PMID: 25524791.

Firouzkouhi Moghaddam M, Rakhshani T and Khosravi M. Effectiveness of methylphenidate supplemented by zinc,calcium,and magnesium for treatment of ADHD patients in the city of Zahedan. *Shiraz E Medical Journal* 2016;17(9).

Flisiak-Antonijczuk H, Adamowska S, Chladzińska-Kiejna S, et al. Treatment of ADHD: Comparison of EEG-biofeedback and methylphenidate. *Archives of Psychiatry and Psychotherapy* 2015;17(4):32-38.

Forehand R, Parent J, Sonuga-Barke E, et al. Which Type of Parent Training Works Best for Preschoolers with Comorbid ADHD and ODD? A Secondary Analysis of a Randomized Controlled Trial Comparing Generic and Specialized Programs. *J Abnorm Child Psychol* 2016. PMID: 26909683.

Fried R, Hirshfeld-Becker D, Petty C, et al. How Informative Is the CANTAB to Assess Executive Functioning in Children With ADHD? A Controlled Study. *J Atten Disord* 2015;19(6):468-75. PMID: 22923781.

Gelade K, Bink M, Janssen TW, et al. An RCT into the effects of neurofeedback on neurocognitive functioning compared to stimulant medication and physical activity in children with ADHD. *Eur Child Adolesc Psychiatry* 2016. PMID: 27665293.

Gevensleben H, Holl B, Albrecht B, et al. Distinct EEG effects related to neurofeedback training in children with ADHD: a randomized controlled trial. *Int J Psychophysiol* 2009;74(2):149-57. PMID: 19712709.

Ghanizadeh A and Haddad B. The effect of dietary education on ADHD, a randomized controlled clinical trial. *Ann Gen Psychiatry* 2015;14:12. PMID: 25767556.

Gonzalez MA, Campbell D and Rubin J. Effects of application to two different skin sites on the pharmacokinetics of transdermal methylphenidate in pediatric patients with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2009;19(3):227-32. PMID: 19519257.

Görtz-Dorten A, Breuer D, Hautmann C, et al. What contributes to patient and parent satisfaction with medication in the treatment of children with ADHD? A report on the development of a new rating scale. *European Child & Adolescent Psychiatry* 2011;20(Suppl 2):S297-S307. PMID: 2011-22383-007.

Gow RV, Hibbeln JR and Parletta N. Current evidence and future directions for research with omega-3 fatty acids and attention deficit hyperactivity disorder. *Curr Opin Clin Nutr Metab Care* 2015;18(2):133-8. PMID: 25581035.

Gray SA, Chaban P, Martinussen R, et al. Effects of a computerized working memory training program on working memory, attention, and academics in adolescents with severe LD and comorbid ADHD: a randomized controlled trial. *J Child Psychol Psychiatry* 2012;53(12):1277-84. PMID: 22978357.

Greenfield B, Hechtman L, Stehli A, et al. Sexual maturation among youth with ADHD and the impact of stimulant medication. *Eur Child Adolesc Psychiatry* 2014;23(9):835-9. PMID: 24488239.

Groen Y, Mulder LJ, Wijers AA, et al. Methylphenidate improves diminished error and feedback sensitivity in ADHD: An evoked heart rate analysis. *Biol Psychol* 2009;82(1):45-53. PMID: 19464338.

Guney E, Cetin FH, Alisik M, et al. Attention Deficit Hyperactivity Disorder and oxidative stress: A short term follow up study. *Psychiatry Research* 2015;229(1-2):310-317.

Haack LM, Villodas M, McBurnett K, et al. Parenting as a Mechanism of Change in Psychosocial Treatment for Youth with ADHD, Predominantly Inattentive Presentation. *J Abnorm Child Psychol* 2016. PMID: 27628742.

Halldorsdottir T, Ollendick TH, Ginsburg G, et al. Treatment Outcomes in Anxious Youth with and without Comorbid ADHD in the CAMS. *J Clin Child Adolesc Psychol* 2015;44(6):985-91. PMID: 25310142.

Hareendran A, Setyawan J, Pokrzywinski R, et al. Evaluating functional outcomes in adolescents with attention-deficit/hyperactivity disorder: Development and initial testing of a self-report instrument. *Health and Quality of Life Outcomes* 2015;13(1).

Hidas A, Birman N, Noy AF, et al. Salivary bacteria and oral health status in medicated and non-medicated children and adolescents with attention deficit hyperactivity disorder (ADHD). *Clin Oral Investig* 2013;17(8):1863-7. PMID: 23135427.

Holmes J, Gathercole SE, Place M, et al. Working memory deficits can be overcome: Impacts of training and medication on working memory in children with ADHD. *Applied Cognitive Psychology* 2010;24(6):827-836.

Holtmann M, Pniewski B, Wachtlin D, et al. Neurofeedback in children with attention-deficit/hyperactivity disorder (ADHD)--a controlled multicenter study of a non-pharmacological treatment approach. *BMC Pediatr* 2014;14:202. PMID: 25123917.

Huang YS, Wang LJ and Chen CK. Long-term neurocognitive effects of methylphenidate in patients with attention deficit hyperactivity disorder, even at drug-free status. *BMC Psychiatry* 2012;12:194. PMID: 23140464.

Hwang-Gu SL and Gau SSF. Interval timing deficits assessed by time reproduction dual tasks as cognitive endophenotypes for attention-deficit/hyperactivity disorder. *PLoS ONE* 2015;10(5).

Jacobi-Polishook T, Shorer Z and Melzer I. The effect of methylphenidate on postural stability under single and dual task conditions in children with attention deficit hyperactivity disorder - a double blind randomized control trial. *J Neurol Sci* 2009;280(1-2):15-21. PMID: 19217632.

Jans T, Graf E, Jacob C, et al. A randomized controlled multicentre trial on the treatment for ADHD in mothers and children: enrolment and basic characteristics of the study sample. *Atten Defic Hyperact Disord* 2013;5(1):29-40. PMID: 23070786.

Janssen TW, Bink M, Gelade K, et al. A randomized controlled trial into the effects of neurofeedback, methylphenidate, and physical activity on EEG power spectra in children with ADHD. *J Child Psychol Psychiatry* 2016;57(5):633-44. PMID: 26748531.

Janssen TW, Bink M, Gelade K, et al. A Randomized Controlled Trial Investigating the Effects of Neurofeedback, Methylphenidate, and Physical Activity on Event-Related Potentials in Children with Attention-Deficit/Hyperactivity Disorder. *J Child Adolesc Psychopharmacol* 2016;26(4):344-53. PMID: 26771913.

Johnstone SJ, Roodenrys S, Blackman R, et al. Neurocognitive training for children with and without AD/HD. *Atten Defic Hyperact Disord* 2012;4(1):11-23. PMID: 22179720.

Jurbergs N, Palcic JL and Kelley ML. Daily Behavior Report Cards with and without Home-Based Consequences: Improving Classroom Behavior in Low Income, African American Children with ADHD. *Child & Family Behavior Therapy* 2010;32(3):177-195.



Kang KD, Yun SW, Chung U, et al. Effects of methylphenidate on body index and physical fitness in Korean children with attention deficit hyperactivity disorder. *Hum Psychopharmacol* 2016;31(2):76-82. PMID: 26756111.

Kielbasa W, Quinlan T, Jin L, et al. Pharmacokinetics and pharmacodynamics of edivoxetine (LY2216684), a norepinephrine reuptake inhibitor, in pediatric patients with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol* 2012;22(4):269-76. PMID: 22849510.

Kwon HJ, Lim MH, Ha M, et al. Transferrin in Korean children with attention deficit hyperactivity disorder. *Psychiatry Investigation* 2011;8(4):366-371.

Lakes KD, Swanson JM and Riggs M. The reliability and validity of the English and Spanish Strengths and Weaknesses of ADHD and Normal behavior rating scales in a preschool sample: continuum measures of hyperactivity and inattention. *J Atten Disord* 2012;16(6):510-6. PMID: 21807955.

Langberg JM, Vaughn AJ, Brinkman WB, et al. Clinical utility of the Vanderbilt ADHD Rating Scale for ruling out comorbid learning disorders. *Pediatrics* 2010;126(5):e1033-8. PMID: 20937653.

Li S, Yu B, Lin Z, et al. Randomized-controlled study of treating attention deficit hyperactivity disorder of preschool children with combined electro-acupuncture and behavior therapy. *Complement Ther Med* 2010;18(5):175-83. PMID: 21056840.

Lin HY, Lee P, Chang WD, et al. Effects of weighted vests on attention, impulse control, and on-task behavior in children with attention deficit hyperactivity disorder. *Am J Occup Ther* 2014;68(2):149-58. PMID: 24581401.

Loo SK, Bilder RM, Cho AL, et al. Effects of d-Methylphenidate, Guanfacine, and Their Combination on Electroencephalogram Resting State Spectral Power in Attention-Deficit/Hyperactivity Disorder. *J Am Acad Child Adolesc Psychiatry* 2016;55(8):674-682.e1. PMID: 27453081.

Maoz H, Tsviban L, Gvirts HZ, et al. Stimulants improve theory of mind in children with attention deficit/hyperactivity disorder. *Journal of Psychopharmacology* 2014;28(3):212-219. PMID: 2014-10977-003.

McCarty CA, Stoep AV, Violette H, et al. Interventions developed for psychiatric and behavioral treatment in the children's ADHD Telemental Health Treatment Study. *Journal of Child and Family Studies* 2015;24(6):1735-1743. PMID: 2014-20776-001.

Meftagh SD, Najimi A, Mohammadi N, et al. The most effective intervention for attention deficit-hyperactivity disorder: using continuous performance test. *Psychiatr Danub* 2014;26(2):165-71. PMID: 24909254.

Merrill BM, Morrow AS, Altszuler AR, et al. Improving Homework Performance Among Children With ADHD: A Randomized Clinical Trial. *J Consult Clin Psychol* 2016. PMID: 27618639.

O'Connor BC, Fabiano GA, Waschbusch DA, et al. Effects of a summer treatment program on functional sports outcomes in young children with ADHD. *J Abnorm Child Psychol* 2014;42(6):1005-17. PMID: 24362766.

Ota T, Iida J, Nakanishi Y, et al. Increased prefrontal hemodynamic change after atomoxetine administration in pediatric attention-deficit/hyperactivity disorder as measured by near-infrared spectroscopy. *Psychiatry and Clinical Neurosciences* 2015;69(3):161-170.

Perera H, Jeewandara KC, Seneviratne S, et al. Combined  $\omega_3$  and  $\omega_6$  supplementation in children with attention-deficit hyperactivity disorder (ADHD) refractory to methylphenidate treatment: A double-blind, placebo-controlled study. *Journal of Child Neurology* 2012;27(6):747-753.

Prins PJ, Dosis S, Ponsioen A, et al. Does computerized working memory training with game elements enhance motivation and training efficacy in children with ADHD?. *Cyberpsychol Behav Soc Netw* 2011;14(3):115-22. PMID: 20649448.

Pritchard AE, Koriakin T, Jacobson LA, et al. Incremental validity of neuropsychological assessment in the identification and treatment of youth with ADHD. *Clin Neuropsychol* 2014;28(1):26-48. PMID: 24345262.

Rajwan E, Chacko A, Wymbs BT, et al. Evaluating clinically significant change in mother and child functioning: comparison of traditional and enhanced behavioral parent training. *J Abnorm Child Psychol* 2014;42(8):1407-12. PMID: 24740438.

Ramtvedt BE, Sandvik L and Sundet K. Correspondence between children's and adults' ratings of stimulant-induced changes in ADHD behaviours in a crossover trial with medication-naive children. *European Journal of Developmental Psychology* 2014;11(6):687-700. PMID: 2014-33449-005.

Rivera-Flores GW. Self-instructional cognitive training to reduce impulsive cognitive style in children with attention deficit with hyperactivity disorder. *Electronic Journal of Research in Educational Psychology* 2015;13(1):27-46.

Rooney M, Hinshaw S, McBurnett K, et al. Parent Adherence in Two Behavioral Treatment Strategies for the Predominantly Inattentive Presentation of ADHD. *J Clin Child Adolesc Psychol* 2016:1-9. PMID: 27808556.

Rubia K, Alegria AA, Cubillo AI, et al. Effects of stimulants on brain function in attention-deficit/hyperactivity disorder: a systematic review and meta-analysis. *Biol Psychiatry* 2014;76(8):616-28. PMID: 24314347.

Rundberg-Rivera EV, Townsend LD, Schneider J, et al. Participant satisfaction in a study of stimulant, parent training, and risperidone in children with severe physical aggression. *J Child Adolesc Psychopharmacol* 2015;25(3):225-33. PMID: 25885012.

Saadat F, Kosha M, Amiry A, et al. Brain-derived neurotrophic factor as a biomarker in children with attention deficit-hyperactivity disorder. *Journal of Krishna Institute of Medical Sciences University* 2015;4(4):10-17.

Sadatnezhad K, Boostani R and Ghanizadeh A. Proposing an adaptive mutation to improve XCSF performance to classify ADHD and BMD patients. *J Neural Eng* 2010;7(6):066006. PMID: 21048285.

Salehi B, Mohammadbeigi A, Sheykholeslam H, et al. Omega-3 and Zinc supplementation as complementary therapies in children with attention-deficit/hyperactivity disorder. *J Res Pharm Pract* 2016;5(1):22-6. PMID: 26985432.

Schacht A, Escobar R, Wagner T, et al. Psychometric properties of the quality of life scale Child Health and Illness Profile-Child Edition in a combined analysis of five atomoxetine trials. *Atten Defic Hyperact Disord* 2011;3(4):335-49. PMID: 21986814.

Schweren LJ, Hartman CA, Zwiers MP, et al. Combined stimulant and antipsychotic treatment in adolescents with attention-deficit/hyperactivity disorder: a cross-sectional observational structural MRI study. *Eur Child Adolesc Psychiatry* 2015;24(8):959-68. PMID: 25395383.

Setyawan J, Hodgkins P, Guerin A, et al. Comparing treatment adherence of lisdexamfetamine and other medications for the treatment of attention deficit/hyperactivity disorder: a retrospective analysis. *J Med Econ* 2013;16(7):962-75. PMID: 23621503.

Setyawan J, Hodgkins P, Guerin A, et al. Comparison of therapy augmentation and deviation rates from the recommended once-daily dosing regimen between LDX and commonly prescribed long-acting stimulants for the treatment of ADHD in youth and adults. *J Med Econ* 2013;16(10):1203-15. PMID: 23937642.

Shaw P, Sharp WS, Morrison M, et al. Psychostimulant treatment and the developing cortex in attention deficit hyperactivity disorder. *Am J Psychiatry* 2009;166(1):58-63. PMID: 18794206.

Shiels K, Hawk LW, Jr., Reynolds B, et al. Effects of methylphenidate on discounting of delayed rewards in attention deficit/hyperactivity disorder. *Exp Clin Psychopharmacol* 2009;17(5):291-301. PMID: 19803628.

Sibley MH, Altszuler AR, Ross JM, et al. A Parent-Teen Collaborative Treatment Model for Academically Impaired High School Students With ADHD. *Cognitive and Behavioral Practice* 2014;21(1):32-42.

Sikirica V, Pliszka SR, Betts KA, et al. Impact of atypical antipsychotic use among adolescents with attention-deficit/hyperactivity disorder. *Am J Manag Care* 2014;20(9):711-21. PMID: 25365746.

Silva D, Colvin L, Glauert R, et al. Contact with the juvenile justice system in children treated with stimulant medication for attention deficit hyperactivity disorder: a population study. *Lancet Psychiatry* 2014;1(4):278-85. PMID: 26360861.

Silva D, Houghton S, Hagemann E, et al. Child Attention Deficit Hyperactive Disorder co morbidities on family stress: Effect of medication. *Community Mental Health Journal* 2015;51(3):347-353.

Spencer SV, Hawk LW, Jr., Richards JB, et al. Stimulant treatment reduces lapses in attention among children with ADHD: the effects of methylphenidate on intra-individual response time distributions. *J Abnorm Child Psychol* 2009;37(6):805-16. PMID: 19291387.

Springer C and Reddy LA. Measuring parental treatment adherence in a multimodal treatment program for children with ADHD: A preliminary investigation. *Child & Family Behavior Therapy* 2010;32(4):272-290.

Steger CM, Gondoli DM, Gibson BS, et al. Combined cognitive and parent training interventions for adolescents with ADHD and their mothers: A randomized controlled trial. *Child Neuropsychol* 2015:1-26. PMID: 25731907.

Stray LL, Ellertsen B and Stray T. Motor function and methylphenidate effect in children with attention deficit hyperactivity disorder. *Acta Paediatr* 2010;99(8):1199-204. PMID: 20298494.

Sundquist J, Ohlsson H, Sundquist K, et al. Attention-deficit/hyperactivity disorder and risk for drug use disorder: A population-based follow-up and co-relative study. *Psychological Medicine* 2015;45(5):977-983.

Tamm L and Nakonezny PA. Metacognitive executive function training for young children with ADHD: a proof-of-concept study. *ADHD Attention Deficit and Hyperactivity Disorders* 2015;7(3):183-190.

Tamm L, Epstein JN, Peugh JL, et al. Preliminary data suggesting the efficacy of attention training for school-aged children with ADHD. *Dev Cogn Neurosci* 2013;4:16-28. PMID: 23219490.

Tarakçıoğlu MC, Çakın Memik N, Olgun NN, et al. Turkish validity and reliability study of the Weiss Functional Impairment Rating Scale-Parent Report. *ADHD Attention Deficit and Hyperactivity Disorders* 2015;7(2):129-139.

Tucker JD, Suter W, Petibone DM, et al. Cytogenetic assessment of methylphenidate treatment in pediatric patients treated for attention deficit hyperactivity disorder. *Mutat Res* 2009;677(1-2):53-8. PMID: 19465145.

van der Kolk A, Bouwmans CA, Schawo SJ, et al. Association between societal costs and treatment response in children and adolescents with ADHD and their parents. A cross-sectional study in the Netherlands. *Springerplus* 2015;4:224. PMID: 26155437.

Wehrmann T and Müller JM. An objective measure of hyperactivity aspects with compressed webcam video. *Child and Adolescent Psychiatry and Mental Health* 2015;9(1).

Wilkes-Gillan S, Bundy A, Cordier R, et al. A Randomised Controlled Trial of a Play-Based Intervention to Improve the Social Play Skills of Children with Attention Deficit Hyperactivity Disorder (ADHD). *PLoS One* 2016;11(8):e0160558. PMID: 27529693.

Wu Q, Zhou T, Ma L, et al. Protective effects of dietary supplementation with natural omega-3 polyunsaturated fatty acids on the visual acuity of school-age children with lower IQ or attention-deficit hyperactivity disorder. *Nutrition* 2015;31(7-8):935-40. PMID: 26015389.

Yalcin O, Iseri E, Bukan N, et al. Effects of long acting methylphenidate on ghrelin levels in male children with attention deficit hyperactivity disorder: An open label trial. *Klinik Psikofarmakoloji Bulteni* 2014;24(2):146-157.

Zarrabi M, Shahrivar Z, Tehrani Doost M, et al. Concurrent validity of the behavior rating inventory of executive function in children with attention deficit hyperactivity disorder. *Iranian Journal of Psychiatry and Behavioral Sciences* 2015;9(1).

Zhang L, Jin X and Zhang Y. Effect of methylphenidate on intelligence quotient scores in Chinese children with attention-deficit/hyperactivity disorder. *J Clin Psychopharmacol* 2011;31(1):51-5. PMID: 21192143.

Zheng Y, Liang JM, Gao HY, et al. An Open-label, Self-control, Prospective Study on Cognitive Function, Academic Performance, and Tolerability of Osmotic-release Oral System Methylphenidate in Children with Attention-deficit Hyperactivity Disorder. *Chin Med J (Engl)* 2015;128(22):2988-97. PMID: 26608976.

## **Timing or Setting Not Applicable**

Huss M, Sikirica V, Hervas A, et al. Guanfacine extended release for children and adolescents with attention-deficit/hyperactivity disorder: efficacy following prior methylphenidate treatment. *Neuropsychiatr Dis Treat* 2016;112:1085-101. PMID: 27226715.

Matsudaira T, Gow RV, Kelly J, et al. Biochemical and Psychological Effects of Omega-3/6 Supplements in Male Adolescents with Attention-Deficit/Hyperactivity Disorder: A Randomized, Placebo-Controlled, Clinical Trial. *J Child Adolesc Psychopharmacol* 2015;25(10):775-82. PMID: 26682998.

McCracken JT, McGough JJ, Loo SK, et al. Combined Stimulant and Guanfacine Administration in Attention-Deficit/Hyperactivity Disorder: A Controlled, Comparative Study. *Journal of the American Academy of Child and Adolescent Psychiatry* 2016.

Williams LM, Hermens DF, Thein T, et al. Using brain-based cognitive measures to support clinical decisions in ADHD. *Pediatr Neurol* 2010;42(2):118-26. PMID: 20117748.

## Appendix E. Key to Included Primary and Companion Articles

\*The companion article marked with an asterisk did not individually meet criteria for inclusion but was considered for supplemental information (e.g., methods data pertinent to an included study).

**Table E-1. Key to included primary and companion articles**

Study Designation	Primary Abstracted Article	Companion Articles
CATTS (Children's ADHD Telemental Health Treatment Study)	Myers, 2015 <sup>1</sup>	None
INCA (Impact of Nutrition on Children with ADHD)	Pelsser, 2011 <sup>2</sup>	None
MTA (Multimodal Treatment Study)	Molina, 2009 <sup>3</sup>	Vitiello, 2012 <sup>4</sup> *MTA Cooperative Group, 1999 <sup>5</sup>
SOSTRA (SOcial Skills TRaining Attachment)	Storebo, 2012 <sup>6</sup>	None
None	Abikoff, 2015 <sup>7</sup>	None
None	Abikoff, 2013 <sup>8</sup>	None
None	Anand, 2016 <sup>9</sup>	None
None	Arcieri, 2012 <sup>10</sup>	None
None	Arnold, 2011 <sup>11</sup>	None
None	Bai, 2015 <sup>12</sup>	None
None	Banaschewski, 2014 <sup>13</sup>	None
None	Barragan, 2014 <sup>14</sup>	None
None	Beck, 2010 <sup>15</sup>	None
None	Berger, 2010 <sup>16</sup>	None
None	Bink, 2015 <sup>17</sup>	None
None	Bloch, 2012 <sup>18</sup>	None
None	Boyer, 2015 <sup>19</sup>	Boyer, 2015 <sup>20</sup>
None	Bunte, 2013 <sup>21</sup>	Bunte, 2013 <sup>22</sup>
None	Carballo, 2014 <sup>23</sup>	None
None	Castro-Cabrera, 2010 <sup>24</sup>	None
None	Caudal, 2011 <sup>25</sup>	None
None	Cetin, 2015 <sup>26</sup>	None
None	Chacko, 2014 <sup>27</sup>	None
None	Chacko, 2009 <sup>28</sup>	None
None	Clemow, 2015 <sup>29</sup>	None
None	Cortese, 2015 <sup>30</sup>	None
None	Didoni, 2011 <sup>31</sup>	None
None	dosReis, 2010 <sup>32</sup>	None
None	Dovis, 2015 <sup>33</sup>	None
None	Duric, 2012 <sup>34</sup>	Duric, 2014 <sup>35</sup>
None	Dutta, 2012 <sup>36</sup>	None
None	Egeland, 2013 <sup>37</sup>	Hovik, 2013 <sup>38</sup>
None	Ercan, 2014 <sup>39</sup>	None
None	Evans, 2016 <sup>40</sup>	None
None	Ferrin, 2016 <sup>41</sup>	None
None	Ferrin, 2014 <sup>42</sup>	None
None	Ferrin, 2012 <sup>43</sup>	None
None	Findling, 2010 <sup>44</sup>	None

<b>Study Designation</b>	<b>Primary Abstracted Article</b>	<b>Companion Articles</b>
None	Gelade, 2016 <sup>45</sup>	None
None	Gevensleben, 2009 <sup>46</sup>	Wangler, 2011 <sup>47</sup> Gevensleben, 2010 <sup>48</sup>
None	Gonzalez, 2013 <sup>49</sup>	None
None	Gustafsson, 2010 <sup>50</sup>	None
None	Hahn-Markowitz, 2016 <sup>51</sup>	None
None	Hammerness, 2012 <sup>52</sup>	None
None	Hariri, 2012 <sup>53</sup>	None
None	Hiscock, 2015 <sup>54</sup>	Papadopoulos, 2015 <sup>55</sup>
None	Hong, 2015 <sup>56</sup>	None
None	Huang, 2015 <sup>57</sup>	None
None	Johnson, 2009 <sup>58</sup>	Johnson, 2012 <sup>59</sup>
None	Katz, 2010 <sup>60</sup>	None
None	Kim, 2015 <sup>61</sup>	None
None	Kim, 2015 <sup>62</sup>	None
None	Klenberg, 2010 <sup>63</sup>	None
None	Li, 2011 <sup>64</sup>	None
None	Liechti, 2013 <sup>65</sup>	None
None	Manor, 2012 <sup>66</sup>	Manor, 2013 <sup>67</sup>
None	Markovska-Simoska, 2016 <sup>68</sup>	None
None	Martin-Martinez, 2012 <sup>69</sup>	None
None	Mautone, 2012 <sup>70</sup>	None
None	Milte, 2012 <sup>71</sup>	Milte, 2015 <sup>72</sup>
None	Mohammadi, 2012 <sup>73</sup>	Mostafavi, 2012 <sup>74</sup>
None	Mohammadpour, 2016 <sup>75</sup>	None
None	Moreno-Garcia, 2015 <sup>76</sup>	None
None	Newcorn, 2016 <sup>77</sup>	None
None	Oberai, 2013 <sup>78</sup>	None
None	Ogrim, 2012 <sup>79</sup>	None
None	Ohan, 2011 <sup>80</sup>	None
None	Ostberg, 2012 <sup>81</sup>	None
None	Pane, 2010 <sup>82</sup>	None
None	Park, 2016 <sup>83</sup>	None
None	Pfiffner, 2014 <sup>84</sup>	None
None	Power, 2012 <sup>85</sup>	None
None	Raz, 2009 <sup>86</sup>	None
None	Salehi, 2010 <sup>87</sup>	None
None	Sallee, 2009 <sup>88</sup>	None
None	Sayer, 2016 <sup>89</sup>	None
None	Shakibaei, 2015 <sup>90</sup>	None
None	Sibley, 2016 <sup>91</sup>	None
None	Soliva, 2010 <sup>92</sup>	None
None	Steiner, 2014 <sup>93</sup>	Steiner, 2014 <sup>94</sup>
None	Thorell, 2010 <sup>95</sup>	None
None	Tobaiqy, 2011 <sup>96</sup>	None
None	Trzepacz, 2011 <sup>97</sup>	None
None	van der Donk, 2015 <sup>98</sup>	None
None	van Dongen-Boomsma, 2014 <sup>99</sup>	None
None	Vidal, 2015 <sup>100</sup>	None
None	Webster-Stratton, 2011 <sup>101</sup>	None
None	Widenhorn-Muller, 2014 <sup>102</sup>	None
None	Zelnik, 2012 <sup>103</sup>	None
None	Zhang, 2010 <sup>104</sup>	None

## References to Appendix E

1. Myers K, Vander Stoep A, Zhou C, et al. Effectiveness of a telehealth service delivery model for treating attention-deficit/hyperactivity disorder: a community-based randomized controlled trial. *J Am Acad Child Adolesc Psychiatry*. 2015 Apr;54(4):263-74. doi: 10.1016/j.jaac.2015.01.009. PMID: 25791143.
2. Pelsser LM, Frankena K, Toorman J, et al. Effects of a restricted elimination diet on the behaviour of children with attention-deficit hyperactivity disorder (INCA study): a randomised controlled trial. *Lancet*. 2011 Feb 5;377(9764):494-503. doi: 10.1016/s0140-6736(10)62227-1. PMID: 21296237.
3. Molina BS, Hinshaw SP, Swanson JM, et al. The MTA at 8 years: prospective follow-up of children treated for combined-type ADHD in a multisite study. *J Am Acad Child Adolesc Psychiatry*. 2009 May;48(5):484-500. doi: 10.1097/CHI.0b013e31819c23d0. PMID: 19318991.
4. Vitiello B, Elliott GR, Swanson JM, et al. Blood pressure and heart rate over 10 years in the multimodal treatment study of children with ADHD. *Am J Psychiatry*. 2012 Feb;169(2):167-77. doi: 10.1176/appi.ajp.2011.10111705. PMID: 21890793.
5. MTA Cooperative Group. A 14-month randomized clinical trial of treatment strategies for attention-deficit/hyperactivity disorder. The MTA Cooperative Group. Multimodal Treatment Study of Children with ADHD. *Arch Gen Psychiatry*. 1999 Dec;56(12):1073-86. PMID: 10591283.
6. Storebo OJ, Gluud C, Winkel P, et al. Social-skills and parental training plus standard treatment versus standard treatment for children with ADHD--the randomised SOSTRA trial. *PLoS One*. 2012;7(6):e37280. doi: 10.1371/journal.pone.0037280. PMID: 22745657.
7. Abikoff HB, Thompson M, Laver-Bradbury C, et al. Parent training for preschool ADHD: a randomized controlled trial of specialized and generic programs. *J Child Psychol Psychiatry*. 2015 Jun;56(6):618-31. doi: 10.1111/jcpp.12346. PMID: 25318650.
8. Abikoff H, Gallagher R, Wells KC, et al. Remediating organizational functioning in children with ADHD: immediate and long-term effects from a randomized controlled trial. *J Consult Clin Psychol*. 2013 Feb;81(1):113-28. doi: 10.1037/a0029648. PMID: 22889336.
9. Anand P, Sachdeva A. Effect of Poly Unsaturated Fatty Acids Administration on Children with Attention Deficit Hyperactivity Disorder: A Randomized Controlled Trial. *J Clin Diagn Res*. 2016 Sep;10(9):Oc01-oc5. doi: 10.7860/jcdr/2016/20423.8471. PMID: 27790483.
10. Arcieri R, Germinario EA, Bonati M, et al. Cardiovascular measures in children and adolescents with attention-deficit/hyperactivity disorder who are new users of methylphenidate and atomoxetine. *J Child Adolesc Psychopharmacol*. 2012 Dec;22(6):423-31. PMID: 23362511.
11. Arnold LE, Disilvestro RA, Bozzolo D, et al. Zinc for attention-deficit/hyperactivity disorder: placebo-controlled double-blind pilot trial alone and combined with amphetamine. *J Child Adolesc Psychopharmacol*. 2011 Feb;21(1):1-19. doi: 10.1089/cap.2010.0073. PMID: 21309695.
12. Bai GN, Wang YF, Yang L, et al. Effectiveness of a focused, brief psychoeducation program for parents of ADHD children: Improvement of medication adherence and symptoms. *Neuropsychiatr Dis Treat*. 2015;11:2721-35.



13. Banaschewski T, Johnson M, Lecendreux M, et al. Health-related quality of life and functional outcomes from a randomized-withdrawal study of long-term lisdexamfetamine dimesylate treatment in children and adolescents with attention-deficit/hyperactivity disorder. *CNS Drugs*. 2014 Dec;28(12):1191-203. doi: 10.1007/s40263-014-0193-z. PMID: 25139785.
14. Barragan E, Breuer D, Dopfner M. Efficacy and Safety of Omega-3/6 Fatty Acids, Methylphenidate, and a Combined Treatment in Children With ADHD. *J Atten Disord*. 2014 Jan 24;doi: 10.1177/1087054713518239. PMID: 24464327.
15. Beck SJ, Hanson CA, Puffenberger SS, et al. A controlled trial of working memory training for children and adolescents with ADHD. *J Clin Child Adolesc Psychol*. 2010;39(6):825-36. doi: 10.1080/15374416.2010.517162. PMID: 21058129.
16. Berger I, Goldzweig G. Objective measures of attention-deficit/hyperactivity disorder: a pilot study. *Isr Med Assoc J*. 2010 Sep;12(9):531-5. PMID: 21287795.
17. Bink M, van Nieuwenhuizen C, Popma A, et al. Behavioral effects of neurofeedback in adolescents with ADHD: a randomized controlled trial. *Eur Child Adolesc Psychiatry*. 2015 Sep;24(9):1035-48. doi: 10.1007/s00787-014-0655-3. PMID: 25477074.
18. Bloch Y, Fixman M, Maoz H, et al. Can computerized cognitive tests assist in the clinical diagnosis of attention-deficit hyperactivity disorder? *J Neuropsychiatry Clin Neurosci*. 2012 Winter;24(1):111-4. doi: 10.1176/appi.neuropsych.11010014. PMID: 22450621.
19. Boyer BE, Geurts HM, Prins PJ, et al. Two novel CBTs for adolescents with ADHD: the value of planning skills. *Eur Child Adolesc Psychiatry*. 2015 Sep;24(9):1075-90. doi: 10.1007/s00787-014-0661-5. PMID: 25549767.
20. Boyer BE, Geurts HM, Prins PJ, et al. One-year follow-up of two novel CBTs for adolescents with ADHD. *European Child and Adolescent Psychiatry*. 2015.
21. Bunte TL, Schoemaker K, Hessen DJ, et al. Clinical usefulness of the Kiddie-Disruptive Behavior Disorder Schedule in the diagnosis of DBD and ADHD in preschool children. *J Abnorm Child Psychol*. 2013 Jul;41(5):681-90. doi: 10.1007/s10802-013-9732-1. PMID: 23474833.
22. Bunte TL, Laschen S, Schoemaker K, et al. Clinical usefulness of observational assessment in the diagnosis of DBD and ADHD in preschoolers. *J Clin Child Adolesc Psychol*. 2013;42(6):749-61. doi: 10.1080/15374416.2013.773516. PMID: 23477379.
23. Carballo JJ, Rodriguez-Blanco L, Garcia-Nieto R, et al. Screening for the ADHD Phenotype Using the Strengths and Difficulties Questionnaire in a Clinical Sample of Newly Referred Children and Adolescents. *J Atten Disord*. 2014 Dec 16;doi: 10.1177/1087054714561858. PMID: 25515677.
24. Castro-Cabrera P, Gomez-Garcia J, Restrepo F, et al. Evaluation of feature extraction techniques on event-related potentials for detection of attention-deficit/hyperactivity disorder. *Conf Proc IEEE Eng Med Biol Soc*. 2010;2010:851-4. doi: 10.1109/iembs.2010.5626862. PMID: 21096317.
25. Caudal F. New marker using bioimpedance technology in screening for attention deficit/hyperactivity disorder (ADHD) in children as an adjunct to conventional diagnostic methods. *Psychol Res Behav Manag*. 2011;4:113-7. doi: 10.2147/prbm.s22924. PMID: 22114541.
26. Çetin FH, Taş Torun Y, Işık Taner Y. Atomoxetine versus OROS methylphenidate in attention deficit hyperactivity disorder: A six-month follow up study for efficacy and adverse effects. *Türkiye Klinikleri Journal of Medical Sciences*. 2015;35(2):88-96.

27. Chacko A, Bedard AC, Marks DJ, et al. A randomized clinical trial of Cogmed Working Memory Training in school-age children with ADHD: a replication in a diverse sample using a control condition. *J Child Psychol Psychiatry*. 2014 Mar;55(3):247-55. doi: 10.1111/jcpp.12146. PMID: 24117656.
28. Chacko A, Wymbs BT, Wymbs FA, et al. Enhancing traditional behavioral parent training for single mothers of children with ADHD. *J Clin Child Adolesc Psychol*. 2009 Mar;38(2):206-18. doi: 10.1080/15374410802698388. PMID: 19283599.
29. Clemow DB, Mason OW, Sarkis EH, et al. Atomoxetine monotherapy compared with combination therapy for the treatment of ADHD: a retrospective chart review study. *Expert Rev Neurother*. 2015 Oct 21;15(11):1353-66. doi: 10.1586/14737175.2015.1102060. PMID: 26488905.
30. Cortese S, Panei P, Arcieri R, et al. Safety of Methylphenidate and Atomoxetine in Children with Attention-Deficit/Hyperactivity Disorder (ADHD): Data from the Italian National ADHD Registry. *CNS Drugs*. 2015 Oct;29(10):865-77. doi: 10.1007/s40263-015-0266-7. PMID: 26293742.
31. Didoni A, Sequi M, Panei P, et al. One-year prospective follow-up of pharmacological treatment in children with attention-deficit/hyperactivity disorder. *Eur J Clin Pharmacol*. 2011 Oct;67(10):1061-7. doi: 10.1007/s00228-011-1050-3. PMID: 21538145.
32. dosReis S, Barksdale CL, Sherman A, et al. Stigmatizing experiences of parents of children with a new diagnosis of ADHD. *Psychiatric Services*. 2010;61(8):811-6. doi: 10.1176/appi.ps.61.8.811. PMID: 2010-16657-009.
33. Dosis S, Van der Oord S, Wiers RW, et al. Improving executive functioning in children with ADHD: training multiple executive functions within the context of a computer game. a randomized double-blind placebo controlled trial. *PLoS One*. 2015;10(4):e0121651. doi: 10.1371/journal.pone.0121651. PMID: 25844638.
34. Duric NS, Assmus J, Gundersen D, et al. Neurofeedback for the treatment of children and adolescents with ADHD: a randomized and controlled clinical trial using parental reports. *BMC Psychiatry*. 2012;12:107. doi: 10.1186/1471-244x-12-107. PMID: 22877086.
35. Duric NS, Assmus J, Elgen IB. Self-reported efficacy of neurofeedback treatment in a clinical randomized controlled study of ADHD children and adolescents. *Neuropsychiatr Dis Treat*. 2014;10:1645-54. doi: 10.2147/ndt.s66466. PMID: 25214789.
36. Dutta B, Barua TK, Ray J, et al. A study of evaluation of safety and efficacy of memomet, a multi herbal formulation (memomet) in the treatment of behavioural disorder in children. *International Journal of Research in Pharmaceutical Sciences*. 2012;3(2):282-6.
37. Egeland J, Aarli AK, Saunes BK. Few effects of far transfer of working memory training in ADHD: a randomized controlled trial. *PLoS One*. 2013;8(10):e75660. doi: 10.1371/journal.pone.0075660. PMID: 24124503.
38. Hovik KT, Saunes BK, Aarli AK, et al. RCT of working memory training in ADHD: long-term near-transfer effects. *PLoS One*. 2013;8(12):e80561. doi: 10.1371/journal.pone.0080561. PMID: 24352414.
39. Ercan ES, Ardic UA, Kutlu A, et al. No beneficial effects of adding parent training to methylphenidate treatment for ADHD + ODD/CD children: a 1-year prospective follow-up study. *J Atten Disord*. 2014 Feb;18(2):145-57. doi: 10.1177/1087054711432884. PMID: 22522574.

40. Evans SW, Langberg JM, Schultz BK, et al. Evaluation of a School-Based Treatment Program for Young Adolescents With ADHD. *Journal of Consulting and Clinical Psychology*. 2016;84(1):15-30.
41. Ferrin M, Perez-Ayala V, El-Abd S, et al. A Randomized Controlled Trial Evaluating the Efficacy of a Psychoeducation Program for Families of Children and Adolescents With ADHD in the United Kingdom: Results After a 6-Month Follow-Up. *J Atten Disord*. 2016 Feb 2doi: 10.1177/1087054715626509. PMID: 26838557.
42. Ferrin M, Moreno-Granados JM, Salcedo-Marin MD, et al. Evaluation of a psychoeducation programme for parents of children and adolescents with ADHD: immediate and long-term effects using a blind randomized controlled trial. *Eur Child Adolesc Psychiatry*. 2014 Aug;23(8):637-47. doi: 10.1007/s00787-013-0494-7. PMID: 24292412.
43. Ferrin M, Vance A. Examination of neurological subtle signs in ADHD as a clinical tool for the diagnosis and their relationship to spatial working memory. *J Child Psychol Psychiatry*. 2012 Apr;53(4):390-400. doi: 10.1111/j.1469-7610.2011.02496.x. PMID: 22141455.
44. Findling RL, Adeyi B, Chen G, et al. Clinical response and symptomatic remission in children treated with lisdexamfetamine dimesylate for attention-deficit/hyperactivity disorder. *CNS Spectrums*. 2010;15(9):559-68.
45. Gelade K, Janssen TW, Bink M, et al. Behavioral Effects of Neurofeedback Compared to Stimulants and Physical Activity in Attention-Deficit/Hyperactivity Disorder: A Randomized Controlled Trial. *J Clin Psychiatry*. 2016 Oct;77(10):e1270-e7. doi: 10.4088/JCP.15m10149. PMID: 27631143.
46. Gevensleben H, Holl B, Albrecht B, et al. Is neurofeedback an efficacious treatment for ADHD? A randomised controlled clinical trial. *J Child Psychol Psychiatry*. 2009 Jul;50(7):780-9. doi: 10.1111/j.1469-7610.2008.02033.x. PMID: 19207632.
47. Wangler S, Gevensleben H, Albrecht B, et al. Neurofeedback in children with ADHD: specific event-related potential findings of a randomized controlled trial. *Clin Neurophysiol*. 2011 May;122(5):942-50. doi: 10.1016/j.clinph.2010.06.036. PMID: 20843737.
48. Gevensleben H, Holl B, Albrecht B, et al. Neurofeedback training in children with ADHD: 6-month follow-up of a randomised controlled trial. *Eur Child Adolesc Psychiatry*. 2010 Sep;19(9):715-24. doi: 10.1007/s00787-010-0109-5. PMID: 20499120.
49. Gonzalez JJ, Mendez LD, Manas S, et al. Performance analysis of univariate and multivariate EEG measurements in the diagnosis of ADHD. *Clin Neurophysiol*. 2013 Jun;124(6):1139-50. doi: 10.1016/j.clinph.2012.12.006. PMID: 23332776.
50. Gustafsson PA, Birberg-Thornberg U, Duchon K, et al. EPA supplementation improves teacher-rated behaviour and oppositional symptoms in children with ADHD. *Acta Paediatr*. 2010 Oct;99(10):1540-9. doi: 10.1111/j.1651-2227.2010.01871.x. PMID: 20491709.
51. Hahn-Markowitz J, Berger I, Manor I, et al. Efficacy of Cognitive-Functional (Cog-Fun) Occupational Therapy Intervention Among Children With ADHD: An RCT. *J Atten Disord*. 2016 Sep 16doi: 10.1177/1087054716666955. PMID: 27637735.
52. Hammerness P, Petty C, Faraone SV, et al. Do Stimulants Reduce the Risk for Alcohol and Substance Use in Youth With ADHD? A Secondary Analysis of a Prospective, 24-Month Open-Label Study of Osmotic-Release Methylphenidate. *J Atten Disord*. 2012 Dec 20doi: 10.1177/1087054712468051. PMID: 23264367.
53. Hariri M, Djazayery A, Djalali M, et al. Effect of n-3 supplementation on hyperactivity, oxidative stress and inflammatory mediators in children with attention-deficit-hyperactivity disorder. *Malays J Nutr*. 2012 Dec;18(3):329-35. PMID: 24568073.

54. Hiscock H, Sciberras E, Mensah F, et al. Impact of a behavioural sleep intervention on symptoms and sleep in children with attention deficit hyperactivity disorder, and parental mental health: randomised controlled trial. *BMJ*. 2015;350:h68. doi: 10.1136/bmj.h68. PMID: 25646809.
55. Papadopoulou N, Sciberras E, Hiscock H, et al. The Efficacy of a Brief Behavioral Sleep Intervention in School-Aged Children With ADHD and Comorbid Autism Spectrum Disorder. *J Atten Disord*. 2015 Feb 2doi: 10.1177/1087054714568565. PMID: 25646022.
56. Hong SS, Cho SH. Treating attention deficit hyperactivity disorder with acupuncture: A randomized controlled trial. *European Journal of Integrative Medicine*. 2015.
57. Huang YH, Chung CY, Ou HY, et al. Treatment effects of combining social skill training and parent training in Taiwanese children with attention deficit hyperactivity disorder. *Journal of the Formosan Medical Association*. 2015;114(3):260-7.
58. Johnson M, Ostlund S, Fransson G, et al. Omega-3/omega-6 fatty acids for attention deficit hyperactivity disorder: a randomized placebo-controlled trial in children and adolescents. *J Atten Disord*. 2009 Mar;12(5):394-401. doi: 10.1177/1087054708316261. PMID: 18448859.
59. Johnson M, Mansson JE, Ostlund S, et al. Fatty acids in ADHD: plasma profiles in a placebo-controlled study of Omega 3/6 fatty acids in children and adolescents. *Atten Defic Hyperact Disord*. 2012 Dec;4(4):199-204. doi: 10.1007/s12402-012-0084-4. PMID: 22753087.
60. Katz M, Levine AA, Kol-Degani H, et al. A compound herbal preparation (CHP) in the treatment of children with ADHD: a randomized controlled trial. *J Atten Disord*. 2010 Nov;14(3):281-91. doi: 10.1177/1087054709356388. PMID: 20228219.
61. Kim JW, Lee J, Kim BN, et al. Theta-phase gamma-amplitude coupling as a neurophysiological marker of attention deficit/hyperactivity disorder in children. *Neurosci Lett*. 2015 Aug 31;603:25-30. doi: 10.1016/j.neulet.2015.07.006. PMID: 26170246.
62. Kim J, Lee Y, Han D, et al. The utility of quantitative electroencephalography and Integrated Visual and Auditory Continuous Performance Test as auxiliary tools for the Attention Deficit Hyperactivity Disorder diagnosis. *Clin Neurophysiol*. 2015 Mar;126(3):532-40. doi: 10.1016/j.clinph.2014.06.034. PMID: 25088931.
63. Klenberg L, Jamsa S, Hayrinen T, et al. The Attention and Executive Function Rating Inventory (ATTEX): Psychometric properties and clinical utility in diagnosing ADHD subtypes. *Scand J Psychol*. 2010 Mar 19;51(5):439-48. doi: 10.1111/j.1467-9450.2010.00812.x. PMID: 20338019.
64. Li JJ, Li ZW, Wang SZ, et al. Ningdong granule: a complementary and alternative therapy in the treatment of attention deficit/hyperactivity disorder. *Psychopharmacology (Berl)*. 2011 Aug;216(4):501-9. doi: 10.1007/s00213-011-2238-z. PMID: 21416235.
65. Liechti MD, Valko L, Muller UC, et al. Diagnostic value of resting electroencephalogram in attention-deficit/hyperactivity disorder across the lifespan. *Brain Topogr*. 2013 Jan;26(1):135-51. doi: 10.1007/s10548-012-0258-6. PMID: 23053601.
66. Manor I, Magen A, Keidar D, et al. The effect of phosphatidylserine containing Omega3 fatty-acids on attention-deficit hyperactivity disorder symptoms in children: a double-blind placebo-controlled trial, followed by an open-label extension. *Eur Psychiatry*. 2012 Jul;27(5):335-42. doi: 10.1016/j.eurpsy.2011.05.004. PMID: 21807480.

67. Manor I, Magen A, Keidar D, et al. Safety of phosphatidylserine containing omega3 fatty acids in ADHD children: a double-blind placebo-controlled trial followed by an open-label extension. *Eur Psychiatry*. 2013 Aug;28(6):386-91. doi: 10.1016/j.eurpsy.2012.11.001. PMID: 23312676.
68. Markovska-Simoska S, Pop-Jordanova N. Quantitative EEG in Children and Adults With Attention Deficit Hyperactivity Disorder: Comparison of Absolute and Relative Power Spectra and Theta/Beta Ratio. *Clin EEG Neurosci*. 2016 May 11doi: 10.1177/1550059416643824. PMID: 27170672.
69. Martin-Martinez D, Casaseca-de-la-Higuera P, Alberola-Lopez S, et al. Nonlinear analysis of actigraphic signals for the assessment of the attention-deficit/hyperactivity disorder (ADHD). *Med Eng Phys*. 2012 Nov;34(9):1317-29. doi: 10.1016/j.medengphy.2011.12.023. PMID: 22297088.
70. Mautone JA, Marshall SA, Sharman J, et al. Development of a Family-School Intervention for Young Children With Attention Deficit Hyperactivity Disorder. *School Psych Rev*. 2012;41(4):447-66. PMID: 24353368.
71. Milte CM, Parletta N, Buckley JD, et al. Eicosapentaenoic and docosahexaenoic acids, cognition, and behavior in children with attention-deficit/hyperactivity disorder: a randomized controlled trial. *Nutrition*. 2012 Jun;28(6):670-7. doi: 10.1016/j.nut.2011.12.009. PMID: 22541055.
72. Milte CM, Parletta N, Buckley JD, et al. Increased Erythrocyte Eicosapentaenoic Acid and Docosahexaenoic Acid Are Associated With Improved Attention and Behavior in Children With ADHD in a Randomized Controlled Three-Way Crossover Trial. *J Atten Disord*. 2015 Nov;19(11):954-64. doi: 10.1177/1087054713510562. PMID: 24214970.
73. Mohammadi MR, Mostafavi SA, Keshavarz SA, et al. Melatonin effects in methylphenidate treated children with attention deficit hyperactivity disorder: a randomized double blind clinical trial. *Iran J Psychiatry*. 2012 Spring;7(2):87-92. PMID: 22952551.
74. Mostafavi SA, Mohammadi MR, Hosseinzadeh P, et al. Dietary intake, growth and development of children with ADHD in a randomized clinical trial of Ritalin and Melatonin co-administration: Through circadian cycle modification or appetite enhancement? *Iran J Psychiatry*. 2012 Summer;7(3):114-9. PMID: 23139692.
75. Mohammadpour N, Jazayeri S, Tehrani-Doost M, et al. Effect of vitamin D supplementation as adjunctive therapy to methylphenidate on ADHD symptoms: A randomized, double blind, placebo-controlled trial. *Nutr Neurosci*. 2016 Dec 07:1-8. doi: 10.1080/1028415x.2016.1262097. PMID: 27924679.
76. Moreno-García I, Delgado-Pardo G, de Reya CC-V, et al. Neurofeedback, pharmacological treatment and behavioral therapy in hyperactivity: Multilevel analysis of treatment effects on electroencephalography. *International Journal of Clinical and Health Psychology*. 2015;15(3):217-25. doi: 10.1016/j.ijchp.2015.04.003. PMID: 2015-48012-005.
77. Newcorn JH, Harpin V, Huss M, et al. Extended-release guanfacine hydrochloride in 6-17-year olds with ADHD: a randomised-withdrawal maintenance of efficacy study. *J Child Psychol Psychiatry*. 2016 Jun;57(6):717-28. doi: 10.1111/jcpp.12492. PMID: 26871297.
78. Oberai P, Gopinadhan S, Varanasi R, et al. Homoeopathic management of attention deficit hyperactivity disorder: A randomised placebo-controlled pilot trial. *Indian Journal of Research in Homeopathy*. 2013;7(4):158-67.

79. Ogrim G, Kropotov J, Hestad K. The quantitative EEG theta/beta ratio in attention deficit/hyperactivity disorder and normal controls: sensitivity, specificity, and behavioral correlates. *Psychiatry Res.* 2012 Aug 15;198(3):482-8. doi: 10.1016/j.psychres.2011.12.041. PMID: 22425468.
80. Ohan JL, Visser TAW, Strain MC, et al. Teachers' and education students' perceptions of and reactions to children with and without the diagnostic label 'ADHD'. *Journal of School Psychology.* 2011;49(1):81-105. doi: 10.1016/j.jsp.2010.10.001. PMID: 2011-00464-004.
81. Ostberg M, Rydell AM. An efficacy study of a combined parent and teacher management training programme for children with ADHD. *Nord J Psychiatry.* 2012 Apr;66(2):123-30. doi: 10.3109/08039488.2011.641587. PMID: 22150634.
82. Panei P, Arcieri R, Bonati M, et al. Safety of psychotropic drug prescribed for attention-deficit/hyperactivity disorder in Italy. *Adverse Drug Reaction Bulletin.* 2010(260):999-1002.
83. Park J, Kim C, Ahn JH, et al. Clinical Use of Continuous Performance Tests to Diagnose Children With ADHD. *J Atten Disord.* 2016 Jul 12doi: 10.1177/1087054716658125. PMID: 27412120.
84. Pfiffner LJ, Hinshaw SP, Owens E, et al. A two-site randomized clinical trial of integrated psychosocial treatment for ADHD-inattentive type. *J Consult Clin Psychol.* 2014 Dec;82(6):1115-27. doi: 10.1037/a0036887. PMID: 24865871.
85. Power TJ, Mautone JA, Soffer SL, et al. A family-school intervention for children with ADHD: results of a randomized clinical trial. *J Consult Clin Psychol.* 2012 Aug;80(4):611-23. doi: 10.1037/a0028188. PMID: 22506793.
86. Raz R, Carasso RL, Yehuda S. The influence of short-chain essential fatty acids on children with attention-deficit/hyperactivity disorder: a double-blind placebo-controlled study. *J Child Adolesc Psychopharmacol.* 2009 Apr;19(2):167-77. doi: 10.1089/cap.2008.070. PMID: 19364294.
87. Salehi B, Imani R, Mohammadi MR, et al. Ginkgo biloba for attention-deficit/hyperactivity disorder in children and adolescents: a double blind, randomized controlled trial. *Prog Neuropsychopharmacol Biol Psychiatry.* 2010 Feb 1;34(1):76-80. doi: 10.1016/j.pnpbp.2009.09.026. PMID: 19815048.
88. Sallee FR, Lyne A, Wigal T, et al. Long-term safety and efficacy of guanfacine extended release in children and adolescents with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol.* 2009 Jun;19(3):215-26. doi: 10.1089/cap.2008.0080. PMID: 19519256.
89. Sayer GR, McGough JJ, Levitt J, et al. Acute and Long-Term Cardiovascular Effects of Stimulant, Guanfacine, and Combination Therapy for Attention-Deficit/Hyperactivity Disorder. *J Child Adolesc Psychopharmacol.* 2016 Aug 2doi: 10.1089/cap.2015.0264. PMID: 27483130.
90. Shakibaei F, Radmanesh M, Salari E, et al. Ginkgo biloba in the treatment of attention-deficit/hyperactivity disorder in children and adolescents. A randomized, placebo-controlled, trial. *Complement Ther Clin Pract.* 2015 May;21(2):61-7. doi: 10.1016/j.ctcp.2015.04.001. PMID: 25925875.
91. Sibley MH, Graziano PA, Kuriyan AB, et al. Parent-teen behavior therapy + motivational interviewing for adolescents with ADHD. *J Consult Clin Psychol.* 2016 Aug;84(8):699-712. doi: 10.1037/ccp0000106. PMID: 27077693.

92. Soliva JC, Fauquet J, Bielsa A, et al. Quantitative MR analysis of caudate abnormalities in pediatric ADHD: proposal for a diagnostic test. *Psychiatry Res.* 2010 Jun 30;182(3):238-43. doi: 10.1016/j.psychres.2010.01.013. PMID: 20488672.
93. Steiner NJ, Frenette EC, Rene KM, et al. Neurofeedback and cognitive attention training for children with attention-deficit hyperactivity disorder in schools. *J Dev Behav Pediatr.* 2014 Jan;35(1):18-27. doi: 10.1097/dbp.000000000000009. PMID: 24399101.
94. Steiner NJ, Frenette EC, Rene KM, et al. In-school neurofeedback training for ADHD: sustained improvements from a randomized control trial. *Pediatrics.* 2014 Mar;133(3):483-92. doi: 10.1542/peds.2013-2059. PMID: 24534402.
95. Thorell LB, Eninger L, Brocki KC, et al. Childhood executive function inventory (CHEXI): a promising measure for identifying young children with ADHD? *J Clin Exp Neuropsychol.* 2010 Jan;32(1):38-43. doi: 10.1080/13803390902806527. PMID: 19381995.
96. Tobaiqy M, Stewart D, Helms PJ, et al. Parental reporting of adverse drug reactions associated with attention-deficit hyperactivity disorder (ADHD) medications in children attending specialist paediatric clinics in the UK. *Drug Saf.* 2011 Mar 1;34(3):211-9. doi: 10.2165/11586050-000000000-00000. PMID: 21332245.
97. Trzepacz PT, Spencer TJ, Zhang S, et al. Effect of atomoxetine on Tanner stage sexual development in children and adolescents with attention deficit/hyperactivity disorder: 18-month results from a double-blind, placebo-controlled trial. *Curr Med Res Opin.* 2011;27 Suppl 2:45-52. doi: 10.1185/03007995.2011.599372. PMID: 21973230.
98. van der Donk M, Hiemstra-Beernink AC, Tjeenk-Kalff A, et al. Cognitive training for children with ADHD: a randomized controlled trial of cogmed working memory training and 'paying attention in class'. *Front Psychol.* 2015;6:1081. doi: 10.3389/fpsyg.2015.01081. PMID: 26284005.
99. van Dongen-Boomsma M, Vollebregt MA, Buitelaar JK, et al. Working memory training in young children with ADHD: a randomized placebo-controlled trial. *J Child Psychol Psychiatry.* 2014 Aug;55(8):886-96. doi: 10.1111/jcpp.12218. PMID: 24628438.
100. Vidal R, Castells J, Richarte V, et al. Group therapy for adolescents with attention-deficit/hyperactivity disorder: a randomized controlled trial. *J Am Acad Child Adolesc Psychiatry.* 2015 Apr;54(4):275-82. doi: 10.1016/j.jaac.2014.12.016. PMID: 25791144.
101. Webster-Stratton CH, Reid MJ, Beauchaine T. Combining parent and child training for young children with ADHD. *J Clin Child Adolesc Psychol.* 2011;40(2):191-203. doi: 10.1080/15374416.2011.546044. PMID: 21391017.
102. Widenhorn-Muller K, Schwanda S, Scholz E, et al. Effect of supplementation with long-chain omega-3 polyunsaturated fatty acids on behavior and cognition in children with attention deficit/hyperactivity disorder (ADHD): a randomized placebo-controlled intervention trial. *Prostaglandins Leukot Essent Fatty Acids.* 2014 Jul-Aug;91(1-2):49-60. doi: 10.1016/j.plefa.2014.04.004. PMID: 24958525.
103. Zelnik N, Bennett-Back O, Miari W, et al. Is the test of variables of attention reliable for the diagnosis of attention-deficit hyperactivity disorder (ADHD)? *J Child Neurol.* 2012 Jun;27(6):703-7. doi: 10.1177/0883073811423821. PMID: 22378668.
104. Zhang H, Du M, Zhuang S. Impact of long-term treatment of methylphenidate on height and weight of school age children with ADHD. *Neuropediatrics.* 2010 Aug;41(2):55-9. doi: 10.1055/s-0030-1261893. PMID: 20799150.

## Appendix F. Characteristics of Included Studies

**Appendix Table F-1. Characteristics of included studies for KQ 1**

Study	Study Design Geographic Location N Completed	Mean Age (Years unless specified)	Gold Standard	Diagnostic Tools	Outcomes (Subgroups analyzed)	Quality
Berger, 2010 <sup>1</sup>	Observational Middle East 58	ADHD: 9.86 (SD 1.89) Non-ADHD: 10.50 (SD 1.81)	A neurologic examination, the completion of DSM-based questionnaires by parents and teachers, and neuropsychologic evaluation confirmed the diagnosis.	Continuous Performance Functions Tests TOVA Conners CPT TOVA + Conner's CPT	Overall accuracy Sensitivity False negative	Fair
Bloch, 2012 <sup>2</sup>	Observational Middle East 34	Total pop.: 11.5, Min. age: 7 Max. age: 17	Consensus achieved on a structured interview by a psychologist using DSM-IV based assessment and a clinical interview by child and adolescent psychiatrist .	CANTAB TOVA (Test of Variable of Attention)	Sensitivity Specificity False positive False negative	Fair
Bunte, 2013 <sup>3</sup>	Observational UK/Europe 251	ADHD: 54.7 months (SD: 8.8) Non-ADHD: 53.1 months (SD: 8.4)	Clinical interview with psychiatrist and psychologist who agreed on diagnosis using K-DBDS semi-structured DSM-4 interview.	Disruptive Behavior Diagnostic Observation Schedule (DB-DOS) Kiddie-Disruptive Behavior Disorder Schedule (K-DBDS)	Sensitivity Specificity AUC  (Comorbidity)	Fair
Carballo, 2014 <sup>4</sup>	Observational UK/Europe 523	Min. age: 3 Max. age: 17	Positive ADHD diagnosis based exclusively on the ADHD RS-IV which assesses DSM-IV-TR ADHD symptoms.	SDQ	Sensitivity Specificity  (ADHD presentation)	Poor
Castro-Cabrera, 2010 <sup>5</sup>	Observational Latin America 46	Min. age: 4 Max. age: 15	Medical diagnostic was determined by neurophysiological evaluation based on clinical criteria of DSM IV.	Event-Related Potentials (ERPs)	Overall accuracy Sensitivity Specificity AUC	Fair
Caudal, 2011 <sup>6</sup>	Observational UK/Europe 112	ADHD: 8.00 Non-ADHD: 8.70	Children diagnosed with ADHD according to the DSM-IV and further examinations.	Electro-interstitial scans (EIS)	Sensitivity Specificity	Fair
dosReis, 2010 <sup>7</sup>	Observational USA 48	Total: 8.8 (SD 2.30)	Unclear/NR	Unclear/NR	Labeling/Stigma	Good



Study	Study Design Geographic Location N Completed	Mean Age (Years unless specified)	Gold Standard	Diagnostic Tools	Outcomes (Subgroups analyzed)	Quality
Ferrin, 2012 <sup>8</sup>	Observational Australia/NZ 1,185	ADHD: 131.44 months (SD 38.93 months) Non-ADHD: 133.16 months (SD 27.95 months)	ADHD status was categorically defined by the semistructured clinical interview of their parent's K-SADS-PL, and dimensionally by the Conners Global Index (CGI). The K-SADS-PL is a semi-structured diagnostic interview designed to assess current and past episodes of psychopathology in children and adolescents according to DSM-IV criteria.	Neurological subtle signs (NSS)	Overall accuracy AUC  (Age)	Fair
Gonzalez, 2013 <sup>9</sup>	Observational UK/Europe 43	Min. age: 4 Max. age: 15	Physical examination, clinical interview and a structured checklist covering DSM-IV and ICD-10 criteria.	EEG IM generalized EEG IM beta band	Overall accuracy Sensitivity Specificity	Fair
Kim, 2015 <sup>10</sup>	Observational Asia 157	ADHD: 10.16 (SD 1.90) Non-ADHD: 9.62 (SD 1.72)	ADHD Diagnosis was based on a Korean version of the Diagnostic Interview Schedule for Children Version IV (DISC-IV) and the diagnoses were confirmed by multiple child and adolescent psychiatrists. The DISC-IV uses diagnostic criteria as specified in DSM-IV.	EEG-TGC EEG Delta Wave EEG Theta/beta ratio IVA CPT commission error IVA CPT omission error	Overall accuracy Sensitivity Specificity	Fair
Kim, 2015 <sup>11</sup>	Observational Asia 97	ADHD: 9.25 (SD 1.63) Non-ADHD: 9.56 (SD 1.98)	ADHD Diagnosis was based on a Korean version of the Diagnostic Interview Schedule for Children Version IV (DISC-IV) and the diagnoses were confirmed by multiple child and adolescent psychiatrists. The DISC-IV uses diagnostic criteria as specified in DSM-IV.	EEG Theta Wave EEG Delta Wave EEG Theta/beta ratio IVA CPT commission error IVA CPT omission error	Overall accuracy Sensitivity Specificity	Fair
Klenberg, 2010 <sup>12</sup>	Observational UK/Europe 916	ADHD: 10.10 (SD 2.40) Non-ADHD: 10.70 (SD 2.50)	Diagnoses were based on structured interviews of parents and children and a parent rating scale (ADHD RS-IV: Home Version) and teacher reports from school.	Attention and Executive Function Rating Inventory (ATTTEX)	Overall accuracy Sensitivity Specificity AUC	Good

<b>Study</b>	<b>Study Design Geographic Location N Completed</b>	<b>Mean Age (Years unless specified)</b>	<b>Gold Standard</b>	<b>Diagnostic Tools</b>	<b>Outcomes (Subgroups analyzed)</b>	<b>Quality</b>
Liechti, 2013 <sup>13</sup>	Observational UK/Europe 62	ADHD: 11.1 (SD 2.10) Non-ADHD: 11.2 (SD 2.10)	Children with ADHD combined subtype (DSM-IV), aged 8–16 years, were diagnosed using the semi-structured clinical diagnostic interview PACS (parental account of children's symptoms); plus Conners teacher rating scale—revised	EEG + Event Related Potentials (ERPs)	Overall accuracy Sensitivity Specificity	Fair
Markovska-Simoska, 2016 <sup>14</sup>	Observational Latin America 120	ADHD: 9 (SD 2.44)	Team of neuropsychologist, pediatrician and clinical psychologist. Also used Conners rating scale.	EEG TBR Cz EEG absolute theta Cz EEG absolute beta Cz EEG relative theta Cz EEG relative beta Cz	Diagnostic accuracy	Fair
Martin-Martinez, 2012 <sup>15</sup>	Observational UK/Europe 63	Total pop.: 6	Case group was diagnosed as having the combined kind of ADHD according to the DSM-IV criteria	Actigraphy - PCA1 [Px00(15 min, D) + Pz22(1 min, FR) + Py01(15 min, AA)]	Overall accuracy Sensitivity Specificity AUC	Poor
Ogrim, 2012 <sup>16</sup>	Observational UK/Europe 101	Total pop.: 11 (SD 3.00)	All diagnoses were according to DSM IV-TR and accepted clinical guidelines. A senior neuropsychologist (GO) was responsible for diagnostic conclusions after discussions in the team, which included a pediatrician and a clinical psychologist.	EEG Theta EEG Theta/beta ratio Visual CPT omission error	Overall accuracy	Fair
Ohan, 2011 <sup>17</sup>	Observational Canada 56	Not Reported	Not Applicable	Not Applicable	Labeling/Stigma	Good
Park, 2016 <sup>18</sup>	Observational Asia 114	ADHD: 7.6 (SD 1.5)	DSM-4 criteria and Korean version of the K-SADS-PL-K	Advanced Test of Attention, Any Item with SD >1 Advanced Test of Attention, Any Item with SD >1.5 Advanced Test of Attention, Any Item with SD >12	Diagnostic Accuracy	Fair

Study	Study Design Geographic Location N Completed	Mean Age (Years unless specified)	Gold Standard	Diagnostic Tools	Outcomes (Subgroups analyzed)	Quality
Soliva, 2010 <sup>19</sup>	Observational UK/Europe 78	ADHD: 10.90 (SD 2.83) Non-ADHD: 11.46 (SD 2.86)	ADHD subjects were diagnosed by a team consisting of a psychologist and a psychiatrist. Scoring was based on parent and teacher rating scales, as well as a semi-structured clinical interview, which systematically reviewed DSM-IV-TR criteria for ADHD, oppositional-defiant disorder, conduct disorder, and depressive and anxiety disorders (DICA-IV).	MRI of Caudate Body Volume	Overall accuracy Sensitivity Specificity  (Sex and ADHD presentation)	Fair
Thorell, 2010 <sup>20</sup>	Observational UK/Europe 45	Unclear/NR	Children met the symptom criteria, the age of onset criterion (i.e., < 7 years) the pervasiveness criterion (symptoms present in two settings), and the duration criterion (> 6 months) for ADHD according to DSM-IV. Subjects saw a child psychologist and if deemed "at risk" they were given scales to confirm diagnosis.	Childhood Executive Function Inventory (CHEXI)- Parent rating inhibition subscale	Overall accuracy Sensitivity Specificity	Fair
Zelnik, 2012 <sup>21</sup>	Observational Middle East 230	Total pop.: 10 (SD 2.70)	Clinical diagnostic work-up included a family interview about the behavioral and neurodevelopmental history of the child, neurological evaluation and observation at the physician's office, utilization of the DSM-IV diagnostic criteria, and employment of the Conners Rating Scales.	TOVA (Test of Variable of Attention)	Sensitivity Specificity False positive False negative	Fair

Abbreviations: ADHD=attention deficit hyperactivity disorder; AUC=area under the curve; DISC-IV=Diagnostic Interview Schedule for Children Version IV; DSM= Diagnostic and Statistical Manual of Mental Disorders; EEG=electroencephalograph; K-DBDS= Kiddie Disruptive Behavior Disorder Schedule; MRI=magnetic resonance imaging; NR=not reported; SD=standard deviation; TBR=theta/beta ratio

**Appendix Table F-2. Characteristics of included studies for KQ 2**

Study	Study Design Geographic Location N Completed	Percent ADHD Subtype <sup>a</sup>	Mean Age (Years unless specified)	Interventions	Outcomes (Subgroups analyzed)	Quality
Abikoff, 2013 <sup>22</sup>	RCT USA 151	Inattentive: 49.4% Combined: 38.9%	Arm 1: 9.06 (SD: 0.91) Arm 2: 9.01 (SD: 0.79) Arm 3: 9.15 (SD: 0.76)	Organizational Skills Training (teaching children new organizational tools and routines) vs. Performance based intervention precluding skill without organizational skills training vs. Waitlist control	Academic performance	Good
Abikoff, 2015 <sup>23</sup>	RCT USA 164	Inattentive: 15.3% Hyperactive: 33.7% Combined: 50.9%	Total: 3.57 (SD: 0.5)	New Forest Parenting Package (home-based intervention) vs. Helping the noncompliant child (clinic-based parenting intervention) vs. Waitlist control	Behavior changes	Good
Anand, 2016 <sup>24</sup>	RCT Asia 50	Unclear/NR	Unclear/NR	Dietary supplements vs. Atomoxetine	Changes in standardized symptom scores	Good
Arcieri, 2012 <sup>25</sup>	Observational UK/Europe 751	Inattentive: 6% Hyperactive: 4% Combined: 90%	Arm 1: 10.41 (SD: 2.62) Arm 2: 10.82 (SD: 2.81) Arm 3: 10.56 (SD: 2.55)	Registry with patients on methylphenidate vs. Registry with patients on strattera vs. In registry taking both methylphenidate and strattera	Cardiac arrhythmias; Elevated blood pressure	Poor
Arnold, 2011 <sup>26</sup>	RCT USA 52	Inattentive: 29.1%, 15%, 50% Combined: 70.8%, 85%	Arm 1: 10.24 (SD: 2.69) Arm 2: 9.61 (SD: 3.36) Arm 3: 8.89 (SD: 2.31)	Zinc 15mg once daily vs. Zinc 15mg twice daily vs. Placebo	Changes in standardized symptom scores; Behavior changes; Changes in appetite; Suicide ideation; Sleep disturbance; Tics or other movement disorders; Gastrointestinal symptoms	Fair

Study	Study Design Geographic Location N Completed	Percent ADHD Subtype <sup>a</sup>	Mean Age (Years unless specified)	Interventions	Outcomes (Subgroups analyzed)	Quality
Bai, 2015 <sup>27</sup>	RCT Asia 89	Unclear/NR	Arm 1: 9.3 (SD: 2.8) Arm 2: 9.6 (SD: 2.9)	Planned behavior psychoeducation program for parents vs. General clinical counseling for parents, without psychoeducation	Changes in standardized symptom scores; Acceptability of treatment	Good
Banaschewski, 2014 <sup>28</sup>	RCT USA, UK/Europe 73	Unclear/NR	Total: 11.1 (SD: 2.59)	Randomized to Lisdexamfetamine dimesylate (LDX) after 52 weeks of being on the drug (vs. withdrawal on placebo--see below) vs. Randomized to placebo after 52 weeks of being on LDX.	Quality of peer relationships; Risk-taking behaviors	Poor
Barragan, 2014 <sup>29</sup>	RCT Latin America 69	Unclear/NR	Total: 8.27 (SD: 1.74)	Methylphenidate (maximum 1 mg/kg/day) vs. Methylphenidate (maximum 1 mg/kg/day and omega 3/6 fatty acid supplementation (6 capsules/day) vs. Omega 3/6 fatty acid supplementation (6 capsules/day)	Changes in appetite; Behavior changes; Sleep disturbance; Gastrointestinal symptoms; Changes in standardized symptom scores	Poor
Beck, 2010 <sup>30</sup>	Observational USA 51	Inattentive: 71% Hyperactive: 0% Combined: 29%	Total: 11.75	Computer-based working memory intervention vs. Waitlist control	Changes in standardized symptom scores	Fair
Bink, 2015 <sup>31</sup>	RCT UK/Europe 71	Unclear/NR	Arm 1: 16.1 (SD: 3.3) Arm 2: 16.2 (SD: 3.4)	Neurofeedback (NF) plus treatment as usual. NF training over about 25 wks, with 2-3 training sessions/wk. Participants offered 40 training sessions of 30 minutes. Mean # of sessions was 37 (minimum 19). Theta/sensorimotor rhythm training was applied. vs. Treatment as usual	Changes in standardized symptom scores	Good
Boyer, 2015 <sup>32</sup>	RCT UK/Europe 136	Inattentive: 74.7%, 65.8% Hyperactive: 7.2%, 2.6% Combined: 18.1%, 31.6%	Arm 1: 14.4 (SD: 1.2) Arm 2: 14.4 (SD: 1.3)	CBT with an aim to improve planning skills vs. Solution-focused CBT without an aim to improve planning skills	Depression or anxiety; Changes in standardized symptom scores	Fair

Study	Study Design Geographic Location N Completed	Percent ADHD Subtype <sup>a</sup>	Mean Age (Years unless specified)	Interventions	Outcomes (Subgroups analyzed)	Quality
Çetin, 2015 <sup>33</sup>	RCT Middle East 120	Inattentive: 12.5% Combined: 87.5%	Arm 1: 9.55 (SD: 2.71) Arm 2: 9.95 (SD: 2.02)	Atomoxetine (ATX) vs. Osmotic release oral system methylphenidate (OROS-MPH)	Changes in standardized symptom scores	Fair
Chacko, 2014 <sup>34</sup>	RCT USA 73	Inattentive: 34%, 41% Combined: 66%, 59%	Arm 1: 8.4 (SD: 1.4) Arm 2: 8.4 (SD: 1.3)	Cogmed working memory training with difficulty titrated to a user's ability vs. "Placebo" cogmed working memory training with difficulty <u>not</u> titrated to a user's ability	Changes in standardized symptom scores; Academic performance	Good
Chacko, 2009 <sup>35</sup>	RCT USA 118; 115 follow-up	Unclear/NR	Arm 1: 7.36 (SD: 1.86) Arm 2: 8.17 (SD: 2.42) Arm 3: 8.02 (SD: 2.15)	Strategies to Enhance Positive Parenting (STEPP) program (a manualized, behavioral parent training program for single mothers) with concurrent group social skills program for children vs. Behavioral parent training program with concurrent group social skills program for children vs. Waitlist control	Changes in standardized symptom scores; Acceptability of treatment	Good
Clemow, 2015 <sup>36</sup>	Observational USA 71	Inattentive: 48.1%, 51.9% Combined: 26%, 38.9%	Arm 1: 24.0 (SD: 15.3) Arm 2: 26.2 (SD: 15.2)	First prescribed atomoxetine (ATX) and not switched or the monotherapy portion of time spent by those prescribed ATX with another ADHD drug and then was switched to ATX only. vs. First prescribed ATX with another drug and did not switch or the combination portion of time spent by those who were first prescribed ATX and then had another ADHD prescribed.	Changes in standardized symptom scores	Poor
Cortese, 2015 <sup>37</sup>	Observational UK/Europe 2411	Inattentive: 11.5%, 11.9% Hyperactive: 2.4%, 5.2% Combined: 85.9%, 82.7%	Arm 1: 10.55 (SD: 2.75) Arm 2: 10.87 (SD: 2.84)	Methylphenidate immediate release, at a dosage of 0.3-0.6 mg/kg/dose/day, in 2-3 doses/day vs. Atomoxetine, starting with 0.5mg/kg daily for at least 7 days, then increasing up to 1.2mg/kg/day	Cardiac arrhythmias	Good

Study	Study Design Geographic Location N Completed	Percent ADHD Subtype <sup>a</sup>	Mean Age (Years unless specified)	Interventions	Outcomes (Subgroups analyzed)	Quality
Didoni, 2011 <sup>38</sup>	Observational UK/Europe 229	Inattentive: 11.7%, 14.5% Hyperactive: 8.8%, 6.2% Combined: 79.4%, 70.1%	Arm 1: 10.7 (SD: 2.7) Arm 2: 11 (SD: 2.7)	Methylphenidate vs. Strattera	Acceptability of treatment; Changes in appetite; Behavior changes; Sleep disturbance; Increased heart rate; Gastrointestinal symptoms; Tics or other movement disorders	Fair
Dovis, 2015 <sup>39</sup>	RCT UK/Europe 89	Combined: 0%, 100%, 100%	Arm 1: 10.6 (SD: 1.4) Arm 2: 10.3 (SD: 1.3) Arm 3: 10.5 (SD: 1.3)	"Braingame Brian" (computerized, home-based executive functioning training) vs. Braingame Brian in training mode and the working memory task in placebo mode vs. All tasks in training mode (overall easier)	Behavior changes	Good
Duric, 2012 <sup>40</sup>	RCT UK/Europe 91	Inattentive: 5.4% Hyperactive: 15.4% Combined: 79.1%	Arm 1: 10.9 (SD: 2.4) Arm 2: 11.2 (SD: 2.8) Arm 3: 11.4 (SD: 3.1)	MPH (dose not reported) vs. MPH + Neurofeedback vs. Neurofeedback	Changes in standardized symptom scores	Poor
Dutta, 2012 <sup>41</sup>	RCT Asia 86	Unclear/NR	Arm 1: 8 (SD: 1.12) Arm 2: 9.1 (SD: 1.1)	Memomet syrup (Bacopa monniera 125 mg, Convulvulus pleuricaulis 100 mg, Centella asiatica 100 mg) vs. Placebo	Changes in standardized symptom scores	Good
Egeland, 2013 <sup>42</sup>	RCT UK/Europe 67	Unclear/NR	Arm 1: 10.5 (SD: 0.7) Arm 2: 10.3 (SD: 0.8)	Cogmed robomemo program vs. Waitlist control	Changes in standardized symptom scores	Good
Ercan, 2014 <sup>43</sup>	Observational UK/Europe 45	Combined: 100%	Arm 1: 9.23 (SD: 2) Arm 2: 8.7 (SD: 1.7)	MPH+11 months of parent training vs. MPH (Usual care)	Changes in standardized symptom scores	Fair

Study	Study Design Geographic Location N Completed	Percent ADHD Subtype <sup>a</sup>	Mean Age (Years unless specified)	Interventions	Outcomes (Subgroups analyzed)	Quality
Evans, 2016 <sup>44</sup>	RCT USA 312	Combined: 49.1%, 50%, 47.1%	Arm 1: 12.1 (SD: 0.9) Arm 2: 12.1 (SD: 0.9) Arm 3: 12.2 (SD: 1.0)	Challenging Horizons Program-After School (CHP-AS) program (organization, social functioning, and academic study skills training) vs. Challenging Horizons Program Mentoring Version (students paired with a mentor who delivered a subset of the CHP-AS interventions during school) vs. Usual care	Functional impairment; Academic performance	Fair
Ferrin, 2014 <sup>45</sup>	RCT UK/Europe 76	Combined: 72.1%, 81.1%	Arm 1: 11.25 (SD: 2.96) Arm 2: 9.94 (SD: 3.04)	Psychoeducational program vs. Parent support group	Changes in standardized symptom scores	Good
Ferring, 2016 <sup>46</sup>	RCT UK/Europe 62	Combined: 60.0%, 79.41%	Arm 1: 10.86 (SD 3.04) Arm 2: 10.56 (SD 3.20)	Psychosocial interventions vs. Usual care	Changes in standardized symptom scores	Good
Findling, 2010 <sup>47</sup>	RCT USA 230	Combined: 96%	Min. age: 8.7 Max. age: 9.4	Lisdexamfetamine dimesylate (LDX) 30mg/day vs. Lisdexamfetamine dimesylate (LDX) 50mg/day vs. Lisdexamfetamine dimesylate (LDX) 70mg/day vs. Placebo	Changes in standardized symptom scores	Fair
Gelade, 2016 <sup>48</sup>	RCT UK/Europe 103	Unclear/NR	Unclear/NR	Biofeedback or neurofeedback vs. Methylphenidate vs. Exercise	Sleep disturbance; Behavior changes	Good
Gevensleben, 2009 <sup>49</sup>	RCT UK/Europe 94	Inattentive: 33.8%, 22.8% Combined: 66.1%, 77.1%	Arm 1: 9.10 (SD: 1.3) Arm 2: 9.4 (SD: 1.2)	Neurofeedback vs. Attention skills training	Changes in standardized symptom scores; Acceptability of treatment	Good



Study	Study Design Geographic Location N Completed	Percent ADHD Subtype <sup>a</sup>	Mean Age (Years unless specified)	Interventions	Outcomes (Subgroups analyzed)	Quality
Gustafsson, 2010 <sup>50</sup>	RCT UK/Europe 82	Unclear/NR	Min. age: 7 Max. age: 12	Omega-3 fatty acid supplementation (eicosapentaenoic acid 500 mg daily) vs. Placebo	Changes in standardized symptom scores	Good
Hahn-Markowitz, 2016 <sup>51</sup>	RCT Middle East 99	Inattentive: 43%, 55% Hyperactive: 4%, 6% Combined: 54%, 40%	Arm 1: 8.4 (SD 0.9) Arm 2: 8.6 (SD 0.8)	Cognitive training therapies vs. Waitlist	Changes in standardized symptom scores	Good
Hammerness, 2012 <sup>52</sup>	Observational USA 115	Unclear/NR	Arm 1: 15.5 (SD: 1.7) Arm 2: 14.9 (SD: 3.4) Arm 3: 15.7 (SD: 2.7) Arm 4: 14.8 (SD: 2.9)	Clinical Trial Participant on MPH vs. Non-clinical trial participants on medication vs. Non-clinical trial participants not on medication vs. Non ADHD Group	Substance abuse	Fair
Hariri, 2012 <sup>53</sup>	RCT Middle East 103	Unclear/NR	Arm 1: 7.9 (SD: 1.53) Arm 2: 7.9 (SD: 1.45)	Omega-3 fatty acid supplementation (900 mg daily) vs. Placebo	Changes in standardized symptom scores	Poor
Hiscock, 2015 <sup>54</sup>	RCT Australia/NZ 196	Unclear/NR	Arm 1: 10.3 (SD: 1.8) Arm 2: 9.9 (SD: 2.1) Arm 3: 10.3 (SD: 1.7) Arm 4: 9.8 (SD: 2.0)	Sleep hygiene vs. Usual care	Changes in standardized symptom scores; Depression or anxiety; Workforce participation; Sleep disturbance  (Comorbidity)	Good
Hong, 2015 <sup>55</sup>	RCT Asia 48	Unclear/NR	Arm 1: 10.87 (SD 2.86) Arm 2: 11.11 (SD 2.79)	Acupuncture vs. Usual care	Changes in standardized symptom scores	Fair

<b>Study</b>	<b>Study Design Geographic Location N Completed</b>	<b>Percent ADHD Subtype<sup>a</sup></b>	<b>Mean Age (Years unless specified)</b>	<b>Interventions</b>	<b>Outcomes (Subgroups analyzed)</b>	<b>Quality</b>
Huang, 2015 <sup>56</sup>	RCT Asia 97	Inattentive: 13.3%, 25% Combined: 86.7%, 75%	Arm 1: 8.2 (SD: 0.9) Arm 2: 8.5 (SD: 0.9)	Behavioral based social skill training for patients and parallel parent group sessions vs. Group therapy for motivation and treatment per their usual care	Changes in standardized symptom scores	Fair
Johnson, 2009 <sup>57</sup>	RCT UK/Europe 59	Inattentive: 24%, 29% Hyperactive: 0%, 0% Combined: 25%, 21%	Arm 1: 11.8 (SD: 2.14) Arm 2: 12.2 (SD: 2.19)	Omega-3/6 fatty acid supplementation (792 mg daily) vs. Placebo	Changes in standardized symptom scores; Functional impairment	Good
Katz, 2010 <sup>58</sup>	RCT Middle East 92	Unclear/NR	Arm 1: 9.72 (SD: 1.58) Arm 2: 9.20 (SD: 1.82)	Patented herbal preparation vs. Placebo	Motor vehicle collisions; Changes in appetite; Gastrointestinal symptoms; Sleep disturbance; Mood disorders	Fair
Li, 2011 <sup>59</sup>	RCT Asia 69	Unclear/NR	Arm 1: 9.3 (SD: 1.8) Arm 2: 9.2 (SD: 2.2)	Methylphenidate 1 mg/kg/day vs. Ningdong granule (a traditional Chinese medicine preparation)	Chemical leukoderma; Changes in standardized symptom scores; Gastrointestinal symptoms; Sleep disturbance; Behavior changes; Changes in appetite	Good

Study	Study Design Geographic Location N Completed	Percent ADHD Subtype <sup>a</sup>	Mean Age (Years unless specified)	Interventions	Outcomes (Subgroups analyzed)	Quality
Manor , 2012 <sup>60</sup>	RCT Middle East 162	Inattentive: 31%, 34% Hyperactive: 3%, 0% Combined: 66%, 65.9%	Arm 1: 9.2 (SD: 2.0) Arm 2: 9.2 (SD: 1.8)	PS-Omega 3 vs. Placebo	Chemical leukoderma; Changes in standardized symptom scores; Elevated blood pressure; Increased heart rate; Weight decrease; Growth suppression; Sleep disturbance; Behavior changes; Changes in appetite; Gastrointestinal symptoms; Tics or other movement disorders; Personality change	Good
Mautone, 2012 <sup>61</sup>	RCT USA 53	Inattentive: 10.3%, 15.6% Hyperactive: 27.6%, 28.1% Combined: 62.1%, 56.3%	Unclear NR	Family-School Success—Early, Elementary (school-based intervention) vs. Parent support and education program	Academic performance	Fair
Milte, 2012 <sup>62</sup>	RCT Australia/NZ 70	Unclear/NR	Arm 1: 8.77 (SD: 1.76) Arm 2: 8.89 (SD: 1.6) Arm 3: 9.14 (SD: 2.03)	Fish oil rich in the omega-3 fatty acid, eicosapentaenoic acid vs. Fish oil rich in the omega-3 fatty acid, docosahexaenoic acid vs. Safflower oil	Changes in standardized symptom scores	Good

Study	Study Design Geographic Location N Completed	Percent ADHD Subtype <sup>a</sup>	Mean Age (Years unless specified)	Interventions	Outcomes (Subgroups analyzed)	Quality
Mohammadi, 2012 <sup>63</sup>	RCT Middle East 50	Combined: 100%	Arm 1 Median: 9.57 (SD: 1.65) Arm 2 Median: 8.83 (SD: 1.82)	MPH + melatonin vs. MPH+placebo	Changes in standardized symptom scores; Sleep disturbance; Changes in appetite; Weight decrease; Gastrointestinal symptoms; Behavior changes; Tics or other movement disorders	Fair
Mohammadpour, 2016 <sup>64</sup>	RCT Middle East 54	Unclear/NR	Arm 1: 7.70 (SD 1.77) Arm 2: 8.03 (SD 1.44)	Dietary supplements vs. Placebo	Changes in standardized symptom scores, Behavior changes	Fair
Molina, 2009 <sup>65</sup>	RCT USA 346 at 10-year follow-up; 436 at 8-year follow-up	Unclear/NR	Total: 16.8 (SD: 1.0)	Medication Management vs. Behavioral training (parent group, parent individual, classroom (student), and teacher sessions) vs. Combination: Medication management and Behavioral training vs. Usual care	Aggression; Incarceration; Depression or anxiety; Academic performance; Motor vehicle collisions; Elevated blood pressure; Increased heart rate	Fair
Moreno-García, 2015 <sup>66</sup>	RCT UK/Europe 57	Inattentive: 42.1%, 42.1%, 57.9% Hyperactive: 21.05%, 15.78%, 15.78% Combined: 36.84%, 42.10%, 26.31%	Arm 1: 9.21 (SD: 1.9) Arm 2: 9.21 (SD: 2.2) Arm 3: 8.11 (SD: 1.3)	Neurofeedback vs. Standard Pharmacological Treatment vs. Behavioral Treatment	Changes in standardized symptom scores	Fair

<b>Study</b>	<b>Study Design Geographic Location N Completed</b>	<b>Percent ADHD Subtype<sup>a</sup></b>	<b>Mean Age (Years unless specified)</b>	<b>Interventions</b>	<b>Outcomes (Subgroups analyzed)</b>	<b>Quality</b>
Myers, 2015 <sup>67</sup>	RCT USA NR	Inattentive: 82.8%, 82.1% Hyperactive: 66.6%, 58% Combined: 60.3%, 51.8%	Arm 1: 9.2 (SD: 2) Arm 2: 9.3 (SD: 2)	6 telehealth sessions using both synchronous and asynchronous technologies vs. Single consultation with a tele-psychiatrist	Behavior changes	Fair
Newcorn, 2016 <sup>68</sup>	RCT USA, Canada, UK/Europe 129	Inattentive: 12.7%, 11.4% Hyperactive: 2.5%, 5.1% Combined: 84.7%, 83.5%	Arm 1: 10.7 (SD 2.64) Arm 2: 11.0 (SD 2.69)	Psychosocial interactions vs. Usual care	Changes in standardized symptom scores	Fair
Oberai, 2013 <sup>69</sup>	RCT Asia 54	Unclear/NR	Arm 1: 8.6 (SD: 2.2) Arm 2: 9.9 (SD: 2.8)	Homeopathy vs. Placebo	Behavior changes	Fair
Ostberg, 2012 <sup>70</sup>	RCT UK/Europe 61	Unclear/NR	Arm 1: 11.1 (SD: 2.1) Arm 2: 10.8 (SD: 1.8)	Barkley Parent + Teacher behavioral intervention vs. Waitlist control	Changes in standardized symptom scores	Good
Pane, 2010 <sup>71</sup>	Observational UK/Europe 1424	Inattentive: 11.7% Hyperactive: 5% Combined: 83.3%	Median: 10.8 Min. age: 6 Max. age: 18	Atomoxetine vs. Methylphenidate	Suicide ideation; Conduction abnormalities; Tics or other movement disorders; Changes in appetite; Gastrointestinal symptoms; Elevated blood pressure	Fair

<b>Study</b>	<b>Study Design Geographic Location N Completed</b>	<b>Percent ADHD Subtype<sup>a</sup></b>	<b>Mean Age (Years unless specified)</b>	<b>Interventions</b>	<b>Outcomes (Subgroups analyzed)</b>	<b>Quality</b>
Pelsser, 2011 <sup>72</sup>	RCT UK/Europe 100 analyzed in first phase	Inattentive: 6%, 6% Hyperactive: 12%, 6% Combined: 82%, 88%	Arm 1: 6.8 (SD: 1.3) Arm 2: 7.0 (SD: 1.3)	Restricted elimination diet vs. No elimination diet	Changes in standardized symptom scores  (ADHD Presentation)	Good
Pfiffner, 2014 <sup>73</sup>	RCT USA 195	Inattentive: 100%	Arm 1: 8.8 (SD: 1.2) Arm 2: 8.7 (SD: 1.2) Arm 3: 8.4 (SD: 1.1)	Child Life and Attention Skills Treatment for children and parents vs. Child Life and Attention Skills Treatment—parents group component only vs. Usual care	Changes in standardized symptom scores; Functional impairment	Good
Power, 2012 <sup>74</sup>	RCT USA 181	Inattentive: 55%, 48.5% Combined: 45%, 51.5%	Unclear NR	Family-School Success—Early, Elementary (school-based intervention) vs. Parent support and education program	Changes in standardized symptom scores; Academic performance	Fair
Raz, 2009 <sup>75</sup>	RCT Middle East 63	Inattentive: 94%, 94% Hyperactive: 44%, 47%	Arm 1: 10.46 (SD: 1.42) Arm 2: 10.51 (SD: 1.47)	Omega-3 fatty acid supplementation vs. Placebo	Changes in standardized symptom scores	Fair
Salehi, 2010 <sup>76</sup>	RCT Middle East 46	Unclear/NR	Arm 1: 9.12 (SD: 1.61) Arm 2: 9.61 (SD: 2.26)	Ginkgo biloba vs. MPH (up to 30 mg/day)	Changes in standardized symptom scores; Changes in appetite; Depression or anxiety; Sleep disturbance; Weight decrease	Good

Study	Study Design Geographic Location N Completed	Percent ADHD Subtype <sup>a</sup>	Mean Age (Years unless specified)	Interventions	Outcomes (Subgroups analyzed)	Quality
Sallee, 2009 <sup>77</sup>	RCT Unclear/NR 60	Inattentive: 23.9% Hyperactive: 3.1% Combined: 73%	Total: 10.7 (SD: 2.6)	Guanfacine XR 1 mg/day with or without amphetamine or MPH vs. Guanfacine XR 2 mg/day with or without amphetamine or MPH vs. Guanfacine XR 3 mg/day with or without amphetamine or MPH vs. Guanfacine XR 4 mg/day with or without amphetamine or MPH	Changes in standardized symptom scores	Poor
Sayer, 2016 <sup>78</sup>	RCT USA NR	Unclear/NR	Total: 10.2 (SD 2.1)	Guanfacine immediate release Vs. Dexmethylphenidate Vs. Dexmethylphenidate, guanfacine immediate release	Increased heart rate	Good
Shakibaei, 2015 <sup>79</sup>	RCT Middle East 60	Unclear/NR	Arm 1: 7.83 (SD: 1.12) Arm 2: 8.41 (SD: 1.40)	Methylphenidate and Ginkgo Biloba vs. Methylphenidate and placebo	Behavior changes	Good
Sibley, 2016 <sup>80</sup>	RCT USA 109	Unclear/NR	Arm 1: 12.65 (SD: 0.85) Arm 2: 12.85 (SD 0.87)	Behavioral interventions, mindfulness-based therapies, and parent behavior training vs. Usual care	Changes in standardized symptom scores; Academic performance	Fair
Steiner, 2014 <sup>81</sup>	RCT USA 98	Unclear/NR	Arm 1: 8.4 (SD: 1.1) Arm 2: 8.9 (SD: 1.0) Arm 3: 8.4 (SD: 1.1)	Neurofeedback vs. Cognitive Training vs. Waitlist control	Changes in standardized symptom scores	Good
Storebo, 2012 <sup>82</sup>	RCT UK/Europe 55	Inattentive: 35.7%, 22.2% Hyperactive: 0%, 7.4% Combined: 31.4%, 59.2%	Arm 1: 10.6 (SD: 1.29) Arm 2: 10.2 (SD: 1.34)	Social Skills Group vs. Usual care	Academic performance	Good

Study	Study Design Geographic Location N Completed	Percent ADHD Subtype <sup>a</sup>	Mean Age (Years unless specified)	Interventions	Outcomes (Subgroups analyzed)	Quality
Tobaiqy, 2011 <sup>83</sup>	Observational UK/Europe 200	Unclear/NR	Max. age: 16	No arms. Questionnaire administered to elicit retrospective data to assess self-reported AEs for many different drugs used for ADHD.	Changes in standardized symptom scores	Fair
Trzepacz, 2011 <sup>84</sup>	RCT UK/Europe, Australia/NZ 394	Inattentive: 23.1%, 19.4% Hyperactive: 4.6%, 5.3% Combined: 7.1%, 75.2%	Arm 1 Median: 10.6 (SD: 2.3) Arm 2 Median: 10.2 (SD: 2.2)	12 month follow up on atomoxetine after 3 month initial trial vs. 12 month follow up on placebo after 3 month initial trial	Growth suppression; Changes in appetite; Gastrointestinal symptoms	Fair
van der Donk, 2015 <sup>85</sup>	RCT UK/Europe 100	Inattentive: 30%, 20% Combined: 58%, 70%	Arm 1: 9.8 (SD: 1.3) Arm 2: 10.0 (SD: 1.3)	Cogmed Working Memory Training vs. Paying Attention in Class (experimental, combined working memory and compensatory training)	Changes in standardized symptom scores	Fair
van Dongen-Boomsma, 2014 <sup>86</sup>	RCT UK/Europe 47	Inattentive: 7.7%, 9.5% Hyperactive: 11.5%, 33.3% Combined: 80.8%, 57.1%	Arm 1: 6.5 (SD: 0.6) Arm 2: 6.6 (SD: 0.7)	Cogmed training program vs. Cogmed training program without adjustment to patient skill level (control group)	Changes in standardized symptom scores	Good
Vidal, 2015 <sup>87</sup>	RCT UK/Europe 89	Inattentive: 35.6%, 0% Hyperactive: 1.7%, 41.6% Combined: 62.7%, 58.3%	Arm 1: 17.47 (SD: 1.88) Arm 2: 16.9 (SD: 1.75)	CBT vs. Usual care	Behavior changes	Good
Webster-Stratton, 2011 <sup>88</sup>	RCT USA 94	Unclear/NR	Arm 1: 64.1 months (SD: 11.3) Arm 2: 64.4 months (SD: 10.6)	Incredible Years Program (a parent training intervention) vs. Waitlist control	Changes in standardized symptom scores	Fair
Widenhorn-Muller, 2014 <sup>89</sup>	RCT UK/Europe 95	Inattentive: 54.7% Hyperactive: 2.1% Combined: 43.2%	Arm 1: 8.90 (SD: 1.48) Arm 2: 8.92 (SD: 1.24)	Omega-3 fatty acid supplementation (720 mg daily) plus 15 mg vitamin E vs. Placebo	Changes in standardized symptom scores	Fair



Study	Study Design Geographic Location N Completed	Percent ADHD Subtype <sup>a</sup>	Mean Age (Years unless specified)	Interventions	Outcomes (Subgroups analyzed)	Quality
Zhang, 2010 <sup>90</sup>	Observational Asia 175	Inattentive: 16.4%, 24.1% Hyperactive: 8.9%, 27.6% Combined: 74.7%, 48.3%	Arm 1: 7.42 Min. age: 6.0 Max. age: 9.8 Arm 2: 8.35 Min. age: 6.0 Max. age: 12.5	Methylphenidate, 10-20 mg/d, 0.27-0.64 mg/kg for about 40 wks/yr (they also took a drug holiday). vs. Control	Growth suppression	Poor

<sup>a</sup>Multiple values are listed for percent female and age in instances where baseline data is reported by study arm rather than for the total population.  
Abbreviations: ADHD=attention deficit hyperactivity disorder; AE=adverse events; ATX=atomoxetine; CBT=cognitive behavioral therapy;  
MPH=methylphenidate; NF=neurofeedback; NR=not reported; RCT=randomized controlled trial; SD=standard deviation; XR=extended release

## References to Appendix F

1. Berger I, Goldzweig G. Objective measures of attention-deficit/hyperactivity disorder: a pilot study. *Isr Med Assoc J*. 2010 Sep;12(9):531-5. PMID: 21287795.
2. Bloch Y, Fixman M, Maoz H, et al. Can computerized cognitive tests assist in the clinical diagnosis of attention-deficit hyperactivity disorder? *J Neuropsychiatry Clin Neurosci*. 2012 Winter;24(1):111-4. doi: 10.1176/appi.neuropsych.11010014. PMID: 22450621.
3. Bunte TL, Schoemaker K, Hessen DJ, et al. Clinical usefulness of the Kiddie-Disruptive Behavior Disorder Schedule in the diagnosis of DBD and ADHD in preschool children. *J Abnorm Child Psychol*. 2013 Jul;41(5):681-90. doi: 10.1007/s10802-013-9732-1. PMID: 23474833.
4. Carballo JJ, Rodriguez-Blanco L, Garcia-Nieto R, et al. Screening for the ADHD Phenotype Using the Strengths and Difficulties Questionnaire in a Clinical Sample of Newly Referred Children and Adolescents. *J Atten Disord*. 2014 Dec 16;doi: 10.1177/1087054714561858. PMID: 25515677.
5. Castro-Cabrera P, Gomez-Garcia J, Restrepo F, et al. Evaluation of feature extraction techniques on event-related potentials for detection of attention-deficit/hyperactivity disorder. *Conf Proc IEEE Eng Med Biol Soc*. 2010;2010:851-4. doi: 10.1109/iembs.2010.5626862. PMID: 21096317.
6. Caudal F. New marker using bioimpedance technology in screening for attention deficit/hyperactivity disorder (ADHD) in children as an adjunct to conventional diagnostic methods. *Psychol Res Behav Manag*. 2011;4:113-7. doi: 10.2147/prbm.s22924. PMID: 22114541.
7. dosReis S, Barksdale CL, Sherman A, et al. Stigmatizing experiences of parents of children with a new diagnosis of ADHD. *Psychiatric Services*. 2010;61(8):811-6. doi: 10.1176/appi.ps.61.8.811. PMID: 2010-16657-009.
8. Ferrin M, Vance A. Examination of neurological subtle signs in ADHD as a clinical tool for the diagnosis and their relationship to spatial working memory. *J Child Psychol Psychiatry*. 2012 Apr;53(4):390-400. doi: 10.1111/j.1469-7610.2011.02496.x. PMID: 22141455.
9. Gonzalez JJ, Mendez LD, Manas S, et al. Performance analysis of univariate and multivariate EEG measurements in the diagnosis of ADHD. *Clin Neurophysiol*. 2013 Jun;124(6):1139-50. doi: 10.1016/j.clinph.2012.12.006. PMID: 23332776.
10. Kim JW, Lee J, Kim BN, et al. Theta-phase gamma-amplitude coupling as a neurophysiological marker of attention deficit/hyperactivity disorder in children. *Neurosci Lett*. 2015 Aug 31;603:25-30. doi: 10.1016/j.neulet.2015.07.006. PMID: 26170246.
11. Kim J, Lee Y, Han D, et al. The utility of quantitative electroencephalography and Integrated Visual and Auditory Continuous Performance Test as auxiliary tools for the Attention Deficit Hyperactivity Disorder diagnosis. *Clin Neurophysiol*. 2015 Mar;126(3):532-40. doi: 10.1016/j.clinph.2014.06.034. PMID: 25088931.
12. Klenberg L, Jamsa S, Hayrinen T, et al. The Attention and Executive Function Rating Inventory (ATTEX): Psychometric properties and clinical utility in diagnosing ADHD subtypes. *Scand J Psychol*. 2010 Mar 19;51(5):439-48. doi: 10.1111/j.1467-9450.2010.00812.x. PMID: 20338019.
13. Liechti MD, Valko L, Muller UC, et al. Diagnostic value of resting electroencephalogram in attention-deficit/hyperactivity disorder across the lifespan. *Brain Topogr*. 2013 Jan;26(1):135-51. doi: 10.1007/s10548-012-0258-6. PMID: 23053601.

14. Markovska-Simoska S, Pop-Jordanova N. Quantitative EEG in Children and Adults With Attention Deficit Hyperactivity Disorder: Comparison of Absolute and Relative Power Spectra and Theta/Beta Ratio. *Clin EEG Neurosci*. 2016 May 11;doi: 10.1177/1550059416643824. PMID: 27170672.
15. Martin-Martinez D, Casaseca-de-la-Higuera P, Alberola-Lopez S, et al. Nonlinear analysis of actigraphic signals for the assessment of the attention-deficit/hyperactivity disorder (ADHD). *Med Eng Phys*. 2012 Nov;34(9):1317-29. doi: 10.1016/j.medengphy.2011.12.023. PMID: 22297088.
16. Ogrim G, Kropotov J, Hestad K. The quantitative EEG theta/beta ratio in attention deficit/hyperactivity disorder and normal controls: sensitivity, specificity, and behavioral correlates. *Psychiatry Res*. 2012 Aug 15;198(3):482-8. doi: 10.1016/j.psychres.2011.12.041. PMID: 22425468.
17. Ohan JL, Visser TAW, Strain MC, et al. Teachers' and education students' perceptions of and reactions to children with and without the diagnostic label 'ADHD'. *Journal of School Psychology*. 2011;49(1):81-105. doi: 10.1016/j.jsp.2010.10.001. PMID: 2011-00464-004.
18. Park J, Kim C, Ahn JH, et al. Clinical Use of Continuous Performance Tests to Diagnose Children With ADHD. *J Atten Disord*. 2016 Jul 12;doi: 10.1177/1087054716658125. PMID: 27412120.
19. Soliva JC, Fauquet J, Bielsa A, et al. Quantitative MR analysis of caudate abnormalities in pediatric ADHD: proposal for a diagnostic test. *Psychiatry Res*. 2010 Jun 30;182(3):238-43. doi: 10.1016/j.psychresns.2010.01.013. PMID: 20488672.
20. Thorell LB, Eninger L, Brocki KC, et al. Childhood executive function inventory (CHEXI): a promising measure for identifying young children with ADHD? *J Clin Exp Neuropsychol*. 2010 Jan;32(1):38-43. doi: 10.1080/13803390902806527. PMID: 19381995.
21. Zelnik N, Bennett-Back O, Miari W, et al. Is the test of variables of attention reliable for the diagnosis of attention-deficit hyperactivity disorder (ADHD)? *J Child Neurol*. 2012 Jun;27(6):703-7. doi: 10.1177/0883073811423821. PMID: 22378668.
22. Abikoff H, Gallagher R, Wells KC, et al. Remediating organizational functioning in children with ADHD: immediate and long-term effects from a randomized controlled trial. *J Consult Clin Psychol*. 2013 Feb;81(1):113-28. doi: 10.1037/a0029648. PMID: 22889336.
23. Abikoff HB, Thompson M, Laver-Bradbury C, et al. Parent training for preschool ADHD: a randomized controlled trial of specialized and generic programs. *J Child Psychol Psychiatry*. 2015 Jun;56(6):618-31. doi: 10.1111/jcpp.12346. PMID: 25318650.
24. Anand P, Sachdeva A. Effect of Poly Unsaturated Fatty Acids Administration on Children with Attention Deficit Hyperactivity Disorder: A Randomized Controlled Trial. *J Clin Diagn Res*. 2016 Sep;10(9):Oc01-oc5. doi: 10.7860/jcdr/2016/20423.8471. PMID: 27790483.
25. Arcieri R, Germinario EA, Bonati M, et al. Cardiovascular measures in children and adolescents with attention-deficit/hyperactivity disorder who are new users of methylphenidate and atomoxetine. *J Child Adolesc Psychopharmacol*. 2012 Dec;22(6):423-31. PMID: 23362511.
26. Arnold LE, Disilvestro RA, Bozzolo D, et al. Zinc for attention-deficit/hyperactivity disorder: placebo-controlled double-blind pilot trial alone and combined with amphetamine. *J Child Adolesc Psychopharmacol*. 2011 Feb;21(1):1-19. doi: 10.1089/cap.2010.0073. PMID: 21309695.
27. Bai GN, Wang YF, Yang L, et al. Effectiveness of a focused, brief psychoeducation program for parents of ADHD children: Improvement of medication adherence and symptoms. *Neuropsychiatr Dis Treat*. 2015;11:2721-35.

28. Banaschewski T, Johnson M, Lecendreux M, et al. Health-related quality of life and functional outcomes from a randomized-withdrawal study of long-term lisdexamfetamine dimesylate treatment in children and adolescents with attention-deficit/hyperactivity disorder. *CNS Drugs*. 2014 Dec;28(12):1191-203. doi: 10.1007/s40263-014-0193-z. PMID: 25139785.
29. Barragan E, Breuer D, Dopfner M. Efficacy and Safety of Omega-3/6 Fatty Acids, Methylphenidate, and a Combined Treatment in Children With ADHD. *J Atten Disord*. 2014 Jan 24;doi: 10.1177/1087054713518239. PMID: 24464327.
30. Beck SJ, Hanson CA, Puffenberger SS, et al. A controlled trial of working memory training for children and adolescents with ADHD. *J Clin Child Adolesc Psychol*. 2010;39(6):825-36. doi: 10.1080/15374416.2010.517162. PMID: 21058129.
31. Bink M, van Nieuwenhuizen C, Popma A, et al. Behavioral effects of neurofeedback in adolescents with ADHD: a randomized controlled trial. *Eur Child Adolesc Psychiatry*. 2015 Sep;24(9):1035-48. doi: 10.1007/s00787-014-0655-3. PMID: 25477074.
32. Boyer BE, Geurts HM, Prins PJ, et al. Two novel CBTs for adolescents with ADHD: the value of planning skills. *Eur Child Adolesc Psychiatry*. 2015 Sep;24(9):1075-90. doi: 10.1007/s00787-014-0661-5. PMID: 25549767.
33. Çetin FH, Taş Torun Y, Işık Taner Y. Atomoxetine versus OROS methylphenidate in attention deficit hyperactivity disorder: A six-month follow up study for efficacy and adverse effects. *Türkiye Klinikleri Journal of Medical Sciences*. 2015;35(2):88-96.
34. Chacko A, Bedard AC, Marks DJ, et al. A randomized clinical trial of Cogmed Working Memory Training in school-age children with ADHD: a replication in a diverse sample using a control condition. *J Child Psychol Psychiatry*. 2014 Mar;55(3):247-55. doi: 10.1111/jcpp.12146. PMID: 24117656.
35. Chacko A, Wymbs BT, Wymbs FA, et al. Enhancing traditional behavioral parent training for single mothers of children with ADHD. *J Clin Child Adolesc Psychol*. 2009 Mar;38(2):206-18. doi: 10.1080/15374410802698388. PMID: 19283599.
36. Clemow DB, Mason OW, Sarkis EH, et al. Atomoxetine monotherapy compared with combination therapy for the treatment of ADHD: a retrospective chart review study. *Expert Rev Neurother*. 2015 Oct 21;15(11):1353-66. doi: 10.1586/14737175.2015.1102060. PMID: 26488905.
37. Cortese S, Panei P, Arcieri R, et al. Safety of Methylphenidate and Atomoxetine in Children with Attention-Deficit/Hyperactivity Disorder (ADHD): Data from the Italian National ADHD Registry. *CNS Drugs*. 2015 Oct;29(10):865-77. doi: 10.1007/s40263-015-0266-7. PMID: 26293742.
38. Didoni A, Sequi M, Panei P, et al. One-year prospective follow-up of pharmacological treatment in children with attention-deficit/hyperactivity disorder. *Eur J Clin Pharmacol*. 2011 Oct;67(10):1061-7. doi: 10.1007/s00228-011-1050-3. PMID: 21538145.
39. Dosis S, Van der Oord S, Wiers RW, et al. Improving executive functioning in children with ADHD: training multiple executive functions within the context of a computer game. a randomized double-blind placebo controlled trial. *PLoS One*. 2015;10(4):e0121651. doi: 10.1371/journal.pone.0121651. PMID: 25844638.
40. Duric NS, Assmus J, Gundersen D, et al. Neurofeedback for the treatment of children and adolescents with ADHD: a randomized and controlled clinical trial using parental reports. *BMC Psychiatry*. 2012;12:107. doi: 10.1186/1471-244x-12-107. PMID: 22877086.

41. Dutta B, Barua TK, Ray J, et al. A study of evaluation of safety and efficacy of memomet, a multi herbal formulation (memomet) in the treatment of behavioural disorder in children. *International Journal of Research in Pharmaceutical Sciences*. 2012;3(2):282-6.
42. Egeland J, Aarli AK, Saunes BK. Few effects of far transfer of working memory training in ADHD: a randomized controlled trial. *PLoS One*. 2013;8(10):e75660. doi: 10.1371/journal.pone.0075660. PMID: 24124503.
43. Ercan ES, Ardic UA, Kutlu A, et al. No beneficial effects of adding parent training to methylphenidate treatment for ADHD + ODD/CD children: a 1-year prospective follow-up study. *J Atten Disord*. 2014 Feb;18(2):145-57. doi: 10.1177/1087054711432884. PMID: 22522574.
44. Evans SW, Langberg JM, Schultz BK, et al. Evaluation of a School-Based Treatment Program for Young Adolescents With ADHD. *Journal of Consulting and Clinical Psychology*. 2016;84(1):15-30.
45. Ferrin M, Moreno-Granados JM, Salcedo-Marin MD, et al. Evaluation of a psychoeducation programme for parents of children and adolescents with ADHD: immediate and long-term effects using a blind randomized controlled trial. *Eur Child Adolesc Psychiatry*. 2014 Aug;23(8):637-47. doi: 10.1007/s00787-013-0494-7. PMID: 24292412.
46. Ferrin M, Perez-Ayala V, El-Abd S, et al. A Randomized Controlled Trial Evaluating the Efficacy of a Psychoeducation Program for Families of Children and Adolescents With ADHD in the United Kingdom: Results After a 6-Month Follow-Up. *J Atten Disord*. 2016 Feb 2doi: 10.1177/1087054715626509. PMID: 26838557.
47. Findling RL, Adeyi B, Chen G, et al. Clinical response and symptomatic remission in children treated with lisdexamfetamine dimesylate for attention-deficit/hyperactivity disorder. *CNS Spectrums*. 2010;15(9):559-68.
48. Gelade K, Janssen TW, Bink M, et al. Behavioral Effects of Neurofeedback Compared to Stimulants and Physical Activity in Attention-Deficit/Hyperactivity Disorder: A Randomized Controlled Trial. *J Clin Psychiatry*. 2016 Oct;77(10):e1270-e7. doi: 10.4088/JCP.15m10149. PMID: 27631143.
49. Gevensleben H, Holl B, Albrecht B, et al. Is neurofeedback an efficacious treatment for ADHD? A randomised controlled clinical trial. *J Child Psychol Psychiatry*. 2009 Jul;50(7):780-9. doi: 10.1111/j.1469-7610.2008.02033.x. PMID: 19207632.
50. Gustafsson PA, Birberg-Thornberg U, Duchén K, et al. EPA supplementation improves teacher-rated behaviour and oppositional symptoms in children with ADHD. *Acta Paediatr*. 2010 Oct;99(10):1540-9. doi: 10.1111/j.1651-2227.2010.01871.x. PMID: 20491709.
51. Hahn-Markowitz J, Berger I, Manor I, et al. Efficacy of Cognitive-Functional (Cog-Fun) Occupational Therapy Intervention Among Children With ADHD: An RCT. *J Atten Disord*. 2016 Sep 16doi: 10.1177/1087054716666955. PMID: 27637735.
52. Hammerness P, Petty C, Faraone SV, et al. Do Stimulants Reduce the Risk for Alcohol and Substance Use in Youth With ADHD? A Secondary Analysis of a Prospective, 24-Month Open-Label Study of Osmotic-Release Methylphenidate. *J Atten Disord*. 2012 Dec 20doi: 10.1177/1087054712468051. PMID: 23264367.
53. Hariri M, Djazayeri A, Djalali M, et al. Effect of n-3 supplementation on hyperactivity, oxidative stress and inflammatory mediators in children with attention-deficit-hyperactivity disorder. *Malays J Nutr*. 2012 Dec;18(3):329-35. PMID: 24568073.
54. Hiscock H, Sciberras E, Mensah F, et al. Impact of a behavioural sleep intervention on symptoms and sleep in children with attention deficit hyperactivity disorder, and parental mental health: randomised controlled trial. *BMJ*. 2015;350:h68. doi: 10.1136/bmj.h68. PMID: 25646809.

55. Hong SS, Cho SH. Treating attention deficit hyperactivity disorder with acupuncture: A randomized controlled trial. *European Journal of Integrative Medicine*. 2015.
56. Huang YH, Chung CY, Ou HY, et al. Treatment effects of combining social skill training and parent training in Taiwanese children with attention deficit hyperactivity disorder. *Journal of the Formosan Medical Association*. 2015;114(3):260-7.
57. Johnson M, Ostlund S, Fransson G, et al. Omega-3/omega-6 fatty acids for attention deficit hyperactivity disorder: a randomized placebo-controlled trial in children and adolescents. *J Atten Disord*. 2009 Mar;12(5):394-401. doi: 10.1177/1087054708316261. PMID: 18448859.
58. Katz M, Levine AA, Kol-Degani H, et al. A compound herbal preparation (CHP) in the treatment of children with ADHD: a randomized controlled trial. *J Atten Disord*. 2010 Nov;14(3):281-91. doi: 10.1177/1087054709356388. PMID: 20228219.
59. Li JJ, Li ZW, Wang SZ, et al. Ningdong granule: a complementary and alternative therapy in the treatment of attention deficit/hyperactivity disorder. *Psychopharmacology (Berl)*. 2011 Aug;216(4):501-9. doi: 10.1007/s00213-011-2238-z. PMID: 21416235.
60. Manor I, Magen A, Keidar D, et al. The effect of phosphatidylserine containing Omega3 fatty-acids on attention-deficit hyperactivity disorder symptoms in children: a double-blind placebo-controlled trial, followed by an open-label extension. *Eur Psychiatry*. 2012 Jul;27(5):335-42. doi: 10.1016/j.eurpsy.2011.05.004. PMID: 21807480.
61. Mautone JA, Marshall SA, Sharman J, et al. Development of a Family-School Intervention for Young Children With Attention Deficit Hyperactivity Disorder. *School Psych Rev*. 2012;41(4):447-66. PMID: 24353368.
62. Milte CM, Parletta N, Buckley JD, et al. Eicosapentaenoic and docosahexaenoic acids, cognition, and behavior in children with attention-deficit/hyperactivity disorder: a randomized controlled trial. *Nutrition*. 2012 Jun;28(6):670-7. doi: 10.1016/j.nut.2011.12.009. PMID: 22541055.
63. Mohammadi MR, Mostafavi SA, Keshavarz SA, et al. Melatonin effects in methylphenidate treated children with attention deficit hyperactivity disorder: a randomized double blind clinical trial. *Iran J Psychiatry*. 2012 Spring;7(2):87-92. PMID: 22952551.
64. Mohammadpour N, Jazayeri S, Tehrani-Doost M, et al. Effect of vitamin D supplementation as adjunctive therapy to methylphenidate on ADHD symptoms: A randomized, double blind, placebo-controlled trial. *Nutr Neurosci*. 2016 Dec 07:1-8. doi: 10.1080/1028415x.2016.1262097. PMID: 27924679.
65. Molina BS, Hinshaw SP, Swanson JM, et al. The MTA at 8 years: prospective follow-up of children treated for combined-type ADHD in a multisite study. *J Am Acad Child Adolesc Psychiatry*. 2009 May;48(5):484-500. doi: 10.1097/CHI.0b013e31819c23d0. PMID: 19318991.
66. Moreno-García I, Delgado-Pardo G, de Reya CC-V, et al. Neurofeedback, pharmacological treatment and behavioral therapy in hyperactivity: Multilevel analysis of treatment effects on electroencephalography. *International Journal of Clinical and Health Psychology*. 2015;15(3):217-25. doi: 10.1016/j.ijchp.2015.04.003. PMID: 2015-48012-005.
67. Myers K, Vander Stoep A, Zhou C, et al. Effectiveness of a telehealth service delivery model for treating attention-deficit/hyperactivity disorder: a community-based randomized controlled trial. *J Am Acad Child Adolesc Psychiatry*. 2015 Apr;54(4):263-74. doi: 10.1016/j.jaac.2015.01.009. PMID: 25791143.

68. Newcorn JH, Harpin V, Huss M, et al. Extended-release guanfacine hydrochloride in 6-17-year olds with ADHD: a randomised-withdrawal maintenance of efficacy study. *J Child Psychol Psychiatry*. 2016 Jun;57(6):717-28. doi: 10.1111/jcpp.12492. PMID: 26871297.
69. Oberai P, Gopinadhan S, Varanasi R, et al. Homoeopathic management of attention deficit hyperactivity disorder: A randomised placebo-controlled pilot trial. *Indian Journal of Research in Homeopathy*. 2013;7(4):158-67.
70. Ostberg M, Rydell AM. An efficacy study of a combined parent and teacher management training programme for children with ADHD. *Nord J Psychiatry*. 2012 Apr;66(2):123-30. doi: 10.3109/08039488.2011.641587. PMID: 22150634.
71. Panei P, Arcieri R, Bonati M, et al. Safety of psychotropic drug prescribed for attention-deficit/hyperactivity disorder in Italy. *Adverse Drug Reaction Bulletin*. 2010(260):999-1002.
72. Pelsser LM, Frankena K, Toorman J, et al. Effects of a restricted elimination diet on the behaviour of children with attention-deficit hyperactivity disorder (INCA study): a randomised controlled trial. *Lancet*. 2011 Feb 5;377(9764):494-503. doi: 10.1016/s0140-6736(10)62227-1. PMID: 21296237.
73. Pfiffner LJ, Hinshaw SP, Owens E, et al. A two-site randomized clinical trial of integrated psychosocial treatment for ADHD-inattentive type. *J Consult Clin Psychol*. 2014 Dec;82(6):1115-27. doi: 10.1037/a0036887. PMID: 24865871.
74. Power TJ, Mautone JA, Soffer SL, et al. A family-school intervention for children with ADHD: results of a randomized clinical trial. *J Consult Clin Psychol*. 2012 Aug;80(4):611-23. doi: 10.1037/a0028188. PMID: 22506793.
75. Raz R, Carasso RL, Yehuda S. The influence of short-chain essential fatty acids on children with attention-deficit/hyperactivity disorder: a double-blind placebo-controlled study. *J Child Adolesc Psychopharmacol*. 2009 Apr;19(2):167-77. doi: 10.1089/cap.2008.070. PMID: 19364294.
76. Salehi B, Imani R, Mohammadi MR, et al. Ginkgo biloba for attention-deficit/hyperactivity disorder in children and adolescents: a double blind, randomized controlled trial. *Prog Neuropsychopharmacol Biol Psychiatry*. 2010 Feb 1;34(1):76-80. doi: 10.1016/j.pnpbp.2009.09.026. PMID: 19815048.
77. Sallee FR, Lyne A, Wigal T, et al. Long-term safety and efficacy of guanfacine extended release in children and adolescents with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol*. 2009 Jun;19(3):215-26. doi: 10.1089/cap.2008.0080. PMID: 19519256.
78. Sayer GR, McGough JJ, Levitt J, et al. Acute and Long-Term Cardiovascular Effects of Stimulant, Guanfacine, and Combination Therapy for Attention-Deficit/Hyperactivity Disorder. *J Child Adolesc Psychopharmacol*. 2016 Aug 2doi: 10.1089/cap.2015.0264. PMID: 27483130.
79. Shakibaei F, Radmanesh M, Salari E, et al. Ginkgo biloba in the treatment of attention-deficit/hyperactivity disorder in children and adolescents. A randomized, placebo-controlled, trial. *Complement Ther Clin Pract*. 2015 May;21(2):61-7. doi: 10.1016/j.ctcp.2015.04.001. PMID: 25925875.
80. Sibley MH, Graziano PA, Kuriyan AB, et al. Parent-teen behavior therapy + motivational interviewing for adolescents with ADHD. *J Consult Clin Psychol*. 2016 Aug;84(8):699-712. doi: 10.1037/ccp0000106. PMID: 27077693.

81. Steiner NJ, Frenette EC, Rene KM, et al. Neurofeedback and cognitive attention training for children with attention-deficit hyperactivity disorder in schools. *J Dev Behav Pediatr.* 2014 Jan;35(1):18-27. doi: 10.1097/dbp.000000000000009. PMID: 24399101.
82. Storebo OJ, Gluud C, Winkel P, et al. Social-skills and parental training plus standard treatment versus standard treatment for children with ADHD--the randomised SOSTRA trial. *PLoS One.* 2012;7(6):e37280. doi: 10.1371/journal.pone.0037280. PMID: 22745657.
83. Tobaiqy M, Stewart D, Helms PJ, et al. Parental reporting of adverse drug reactions associated with attention-deficit hyperactivity disorder (ADHD) medications in children attending specialist paediatric clinics in the UK. *Drug Saf.* 2011 Mar 1;34(3):211-9. doi: 10.2165/11586050-000000000-00000. PMID: 21332245.
84. Trzepacz PT, Spencer TJ, Zhang S, et al. Effect of atomoxetine on Tanner stage sexual development in children and adolescents with attention deficit/hyperactivity disorder: 18-month results from a double-blind, placebo-controlled trial. *Curr Med Res Opin.* 2011;27 Suppl 2:45-52. doi: 10.1185/03007995.2011.599372. PMID: 21973230.
85. van der Donk M, Hiemstra-Beernink AC, Tjeenk-Kalff A, et al. Cognitive training for children with ADHD: a randomized controlled trial of cogmed working memory training and 'paying attention in class'. *Front Psychol.* 2015;6:1081. doi: 10.3389/fpsyg.2015.01081. PMID: 26284005.
86. van Dongen-Boomsma M, Vollebregt MA, Buitelaar JK, et al. Working memory training in young children with ADHD: a randomized placebo-controlled trial. *J Child Psychol Psychiatry.* 2014 Aug;55(8):886-96. doi: 10.1111/jcpp.12218. PMID: 24628438.
87. Vidal R, Castells J, Richarte V, et al. Group therapy for adolescents with attention-deficit/hyperactivity disorder: a randomized controlled trial. *J Am Acad Child Adolesc Psychiatry.* 2015 Apr;54(4):275-82. doi: 10.1016/j.jaac.2014.12.016. PMID: 25791144.
88. Webster-Stratton CH, Reid MJ, Beauchaine T. Combining parent and child training for young children with ADHD. *J Clin Child Adolesc Psychol.* 2011;40(2):191-203. doi: 10.1080/15374416.2011.546044. PMID: 21391017.
89. Widenhorn-Muller K, Schwanda S, Scholz E, et al. Effect of supplementation with long-chain omega-3 polyunsaturated fatty acids on behavior and cognition in children with attention deficit/hyperactivity disorder (ADHD): a randomized placebo-controlled intervention trial. *Prostaglandins Leukot Essent Fatty Acids.* 2014 Jul-Aug;91(1-2):49-60. doi: 10.1016/j.plefa.2014.04.004. PMID: 24958525.
90. Zhang H, Du M, Zhuang S. Impact of long-term treatment of methylphenidate on height and weight of school age children with ADHD. *Neuropediatrics.* 2010 Aug;41(2):55-9. doi: 10.1055/s-0030-1261893. PMID: 20799150.



# Appendix G. Overview of Included Studies

**Table G-1. Overview of included studies in KQ 1**

<b>Study descriptions</b>	<b>Number of studies</b>
<b>Overview of all studies</b>	
Single center	20 <sup>1-20</sup>
Multiple centers	1 <sup>21</sup>
Primary care setting	5 <sup>3,7,11,15,18</sup>
Specialty practice	12 <sup>1,2,4,8-10,12,14-16,18,19</sup>
Community setting	3 <sup>3,15,21</sup>
School setting	5 <sup>6,11,19-21</sup>
Unclear or unknown location	3 <sup>5,13,17</sup>
Asia	3 <sup>1,7,16</sup>
Australia/NZ	1 <sup>2</sup>
Canada	1 <sup>20</sup>
Latin America	2 <sup>6,17</sup>
Middle East	3 <sup>8-10</sup>
United States	1 <sup>18</sup>
UK/Europe	10 <sup>3-5,11-15,19,21</sup>
Government funding	4 <sup>1-3,18</sup>
Non-government/non-industry funding	4 <sup>6,16,17,19</sup>
Combination of funding sources:	
Government/non-government	2 <sup>4,5</sup>
Government/industry	1 <sup>21</sup>
Unclear/NR	10 <sup>7-15,20</sup>
Good quality	3 <sup>18-20</sup>
Fair quality	16 <sup>1-3,6-17,21</sup>
Poor quality	2 <sup>4,5</sup>
<b>Studies examining diagnostic accuracy</b>	
Gold standard based on DSM-IV diagnostic criteria:	
ADHD-Rating Scale	2 <sup>4,19</sup>
Conners Teacher Rating Scale	2 <sup>9,21</sup>
K-DBDS	1 <sup>11</sup>
K-SADS-PL	2 <sup>2,16</sup>
Disc-IV	2 <sup>1,7</sup>
DICA-IV	1 <sup>14</sup>
Structured checklist	1 <sup>3</sup>
Specific ratings scales not reported (included mixture of parent/teacher scales, clinical evaluations, and various DSM-IV criteria checklists)	8 <sup>5,6,8,10,12,13,15,17</sup>
Diagnosis confirmed by specialist	13 <sup>1,3,6-12,14,16,17,19</sup>
Diagnosis confirmed by other care provider	1 <sup>12</sup>
Unclear validation of diagnosis	7 <sup>2-5,13,15,21</sup>
Subgroups	
Age	1 <sup>2</sup>
Sex	1 <sup>14</sup>
ADHD subtype	2 <sup>4,14</sup>
Comorbidity	1 <sup>11</sup>

**Table G-2. Overview of included studies in KQ 2**

<b>Study descriptions</b>	<b>Number of studies</b>
<b>Overview of all studies</b>	
Single center	36 <sup>22-57</sup>
Multiple centers	31 <sup>58-88</sup>
NR or unclear	2 <sup>89,90</sup>
Primary care setting	9 <sup>23-25,30,52,57,63,69,81</sup>
Specialty practice	41 <sup>22,26-28,32-35,37-42,44,46-51,53,56,58-60,62,64,66,72,73,75-78,80,82,83,86-88</sup>
Community setting	1 <sup>43</sup>
School setting	4 <sup>45,65,68,85</sup>
Other location	5 <sup>54,61,67,79,86</sup>
Specialty practice/school setting	1 <sup>64</sup>
Specialty practice/other location	1 <sup>55</sup>
Unclear	9 <sup>29,31,36,70,71,74,84,89,90</sup>
Asia	8 <sup>22-26,54,57,58</sup>
Australia/NZ	2 <sup>59,60</sup>
Latin America	1 <sup>27</sup>
Middle East	10 <sup>28-34,61,87,88</sup>
United States	19 <sup>35-43,55,62-69,85</sup>
UK/Europe	25 <sup>44-53,56,71-82,89,90</sup>
UK/Europe and United States	2 <sup>70,86</sup>
UK/Europe and Australia/NZ	1 <sup>83</sup>
Unclear	1 <sup>84</sup>
Government funding	30 <sup>30,37,38,40,42,45-48,50-52,55,56,58-60,63-68,72-74,78,81,85,89</sup>
Industry	9 <sup>27,31,35,62,69,70,83,84,86</sup>
Non-government/non-industry funding	8 <sup>24,28,33,53,54,87,88,90</sup>
Combination of funding sources:	
Industry/government/non-government	1 <sup>23</sup>
Non-government/industry	1 <sup>80</sup>
Government/non-government	2 <sup>43,79</sup>
Unclear/NR	18 <sup>22,25,26,29,32,34,36,39,41,44,49,57,61,71,75-77,82</sup>
Good quality	32 <sup>23,25,28,31,33,37,38,43,47-49,51,53,55-60,64-66,71,75,76,78-82,87,90</sup>
Fair quality	30 <sup>24,26,30,32,34-36,39-42,44-46,52,54,61,63,67-69,72-74,77,83,85,86,88</sup>
Poor quality	7 <sup>22,27,29,62,70,84,89</sup>

## References to Appendix G

1. Kim JW, Lee J, Kim BN, et al. Theta-phase gamma-amplitude coupling as a neurophysiological marker of attention deficit/hyperactivity disorder in children. *Neurosci Lett*. 2015 Aug 31;603:25-30. doi: 10.1016/j.neulet.2015.07.006. PMID: 26170246.
2. Ferrin M, Vance A. Examination of neurological subtle signs in ADHD as a clinical tool for the diagnosis and their relationship to spatial working memory. *J Child Psychol Psychiatry*. 2012 Apr;53(4):390-400. doi: 10.1111/j.1469-7610.2011.02496.x. PMID: 22141455.
3. Gonzalez JJ, Mendez LD, Manas S, et al. Performance analysis of univariate and multivariate EEG measurements in the diagnosis of ADHD. *Clin Neurophysiol*. 2013 Jun;124(6):1139-50. doi: 10.1016/j.clinph.2012.12.006. PMID: 23332776.
4. Carballo JJ, Rodriguez-Blanco L, Garcia-Nieto R, et al. Screening for the ADHD Phenotype Using the Strengths and Difficulties Questionnaire in a Clinical Sample of Newly Referred Children and Adolescents. *J Atten Disord*. 2014 Dec 16;doi: 10.1177/1087054714561858. PMID: 25515677.
5. Martin-Martinez D, Casaseca-de-la-Higuera P, Alberola-Lopez S, et al. Nonlinear analysis of actigraphic signals for the assessment of the attention-deficit/hyperactivity disorder (ADHD). *Med Eng Phys*. 2012 Nov;34(9):1317-29. doi: 10.1016/j.medengphy.2011.12.023. PMID: 22297088.
6. Castro-Cabrera P, Gomez-Garcia J, Restrepo F, et al. Evaluation of feature extraction techniques on event-related potentials for detection of attention-deficit/hyperactivity disorder. *Conf Proc IEEE Eng Med Biol Soc*. 2010;2010:851-4. doi: 10.1109/iembs.2010.5626862. PMID: 21096317.
7. Kim J, Lee Y, Han D, et al. The utility of quantitative electroencephalography and Integrated Visual and Auditory Continuous Performance Test as auxiliary tools for the Attention Deficit Hyperactivity Disorder diagnosis. *Clin Neurophysiol*. 2015 Mar;126(3):532-40. doi: 10.1016/j.clinph.2014.06.034. PMID: 25088931.
8. Bloch Y, Fixman M, Maoz H, et al. Can computerized cognitive tests assist in the clinical diagnosis of attention-deficit hyperactivity disorder? *J Neuropsychiatry Clin Neurosci*. 2012 Winter;24(1):111-4. doi: 10.1176/appi.neuropsych.11010014. PMID: 22450621.
9. Zelnik N, Bennett-Back O, Miari W, et al. Is the test of variables of attention reliable for the diagnosis of attention-deficit hyperactivity disorder (ADHD)? *J Child Neurol*. 2012 Jun;27(6):703-7. doi: 10.1177/0883073811423821. PMID: 22378668.
10. Berger I, Goldzweig G. Objective measures of attention-deficit/hyperactivity disorder: a pilot study. *Isr Med Assoc J*. 2010 Sep;12(9):531-5. PMID: 21287795.
11. Bunte TL, Schoemaker K, Hessen DJ, et al. Clinical usefulness of the Kiddie-Disruptive Behavior Disorder Schedule in the diagnosis of DBD and ADHD in preschool children. *J Abnorm Child Psychol*. 2013 Jul;41(5):681-90. doi: 10.1007/s10802-013-9732-1. PMID: 23474833.
12. Ogrim G, Kropotov J, Hestad K. The quantitative EEG theta/beta ratio in attention deficit/hyperactivity disorder and normal controls: sensitivity, specificity, and behavioral correlates. *Psychiatry Res*. 2012 Aug 15;198(3):482-8. doi: 10.1016/j.psychres.2011.12.041. PMID: 22425468.

13. Caudal F. New marker using bioimpedance technology in screening for attention deficit/hyperactivity disorder (ADHD) in children as an adjunct to conventional diagnostic methods. *Psychol Res Behav Manag.* 2011;4:113-7. doi: 10.2147/prbm.s22924. PMID: 22114541.
14. Soliva JC, Fauquet J, Bielsa A, et al. Quantitative MR analysis of caudate abnormalities in pediatric ADHD: proposal for a diagnostic test. *Psychiatry Res.* 2010 Jun 30;182(3):238-43. doi: 10.1016/j.psychres.2010.01.013. PMID: 20488672.
15. Thorell LB, Eninger L, Brocki KC, et al. Childhood executive function inventory (CHEXI): a promising measure for identifying young children with ADHD? *J Clin Exp Neuropsychol.* 2010 Jan;32(1):38-43. doi: 10.1080/13803390902806527. PMID: 19381995.
16. Park J, Kim C, Ahn JH, et al. Clinical Use of Continuous Performance Tests to Diagnose Children With ADHD. *J Atten Disord.* 2016 Jul 12;doi: 10.1177/1087054716658125. PMID: 27412120.
17. Markovska-Simoska S, Pop-Jordanova N. Quantitative EEG in Children and Adults With Attention Deficit Hyperactivity Disorder: Comparison of Absolute and Relative Power Spectra and Theta/Beta Ratio. *Clin EEG Neurosci.* 2016 May 11;doi: 10.1177/1550059416643824. PMID: 27170672.
18. dosReis S, Barksdale CL, Sherman A, et al. Stigmatizing experiences of parents of children with a new diagnosis of ADHD. *Psychiatric Services.* 2010;61(8):811-6. doi: 10.1176/appi.ps.61.8.811. PMID: 2010-16657-009.
19. Klenberg L, Jamsa S, Hayrinen T, et al. The Attention and Executive Function Rating Inventory (ATEX): Psychometric properties and clinical utility in diagnosing ADHD subtypes. *Scand J Psychol.* 2010 Mar 19;51(5):439-48. doi: 10.1111/j.1467-9450.2010.00812.x. PMID: 20338019.
20. Ohan JL, Visser TAW, Strain MC, et al. Teachers' and education students' perceptions of and reactions to children with and without the diagnostic label 'ADHD'. *Journal of School Psychology.* 2011;49(1):81-105. doi: 10.1016/j.jsp.2010.10.001. PMID: 2011-00464-004.
21. Liechti MD, Valko L, Muller UC, et al. Diagnostic value of resting electroencephalogram in attention-deficit/hyperactivity disorder across the lifespan. *Brain Topogr.* 2013 Jan;26(1):135-51. doi: 10.1007/s10548-012-0258-6. PMID: 23053601.
22. Zhang H, Du M, Zhuang S. Impact of long-term treatment of methylphenidate on height and weight of school age children with ADHD. *Neuropediatrics.* 2010 Aug;41(2):55-9. doi: 10.1055/s-0030-1261893. PMID: 20799150.
23. Bai GN, Wang YF, Yang L, et al. Effectiveness of a focused, brief psychoeducation program for parents of ADHD children: Improvement of medication adherence and symptoms. *Neuropsychiatr Dis Treat.* 2015;11:2721-35.
24. Huang YH, Chung CY, Ou HY, et al. Treatment effects of combining social skill training and parent training in Taiwanese children with attention deficit hyperactivity disorder. *Journal of the Formosan Medical Association.* 2015;114(3):260-7.
25. Dutta B, Barua TK, Ray J, et al. A study of evaluation of safety and efficacy of memomet, a multi herbal formulation (memomet) in the treatment of behavioural disorder in children. *International Journal of Research in Pharmaceutical Sciences.* 2012;3(2):282-6.
26. Oberai P, Gopinadhan S, Varanasi R, et al. Homoeopathic management of attention deficit hyperactivity disorder: A randomised placebo-controlled pilot trial. *Indian Journal of Research in Homeopathy.* 2013;7(4):158-67.

27. Barragan E, Breuer D, Dopfner M. Efficacy and Safety of Omega-3/6 Fatty Acids, Methylphenidate, and a Combined Treatment in Children With ADHD. *J Atten Disord*. 2014 Jan 24;doi: 10.1177/1087054713518239. PMID: 24464327.
28. Shakibaei F, Radmanesh M, Salari E, et al. Ginkgo biloba in the treatment of attention-deficit/hyperactivity disorder in children and adolescents. A randomized, placebo-controlled, trial. *Complement Ther Clin Pract*. 2015 May;21(2):61-7. doi: 10.1016/j.ctcp.2015.04.001. PMID: 25925875.
29. Hariri M, Djazayeri A, Djalali M, et al. Effect of n-3 supplementation on hyperactivity, oxidative stress and inflammatory mediators in children with attention-deficit-hyperactivity disorder. *Malays J Nutr*. 2012 Dec;18(3):329-35. PMID: 24568073.
30. Mohammadi MR, Mostafavi SA, Keshavarz SA, et al. Melatonin effects in methylphenidate treated children with attention deficit hyperactivity disorder: a randomized double blind clinical trial. *Iran J Psychiatry*. 2012 Spring;7(2):87-92. PMID: 22952551.
31. Manor I, Magen A, Keidar D, et al. The effect of phosphatidylserine containing Omega3 fatty-acids on attention-deficit hyperactivity disorder symptoms in children: a double-blind placebo-controlled trial, followed by an open-label extension. *Eur Psychiatry*. 2012 Jul;27(5):335-42. doi: 10.1016/j.eurpsy.2011.05.004. PMID: 21807480.
32. Katz M, Levine AA, Kol-Degani H, et al. A compound herbal preparation (CHP) in the treatment of children with ADHD: a randomized controlled trial. *J Atten Disord*. 2010 Nov;14(3):281-91. doi: 10.1177/1087054709356388. PMID: 20228219.
33. Salehi B, Imani R, Mohammadi MR, et al. Ginkgo biloba for attention-deficit/hyperactivity disorder in children and adolescents: a double blind, randomized controlled trial. *Prog Neuropsychopharmacol Biol Psychiatry*. 2010 Feb 1;34(1):76-80. doi: 10.1016/j.pnpbp.2009.09.026. PMID: 19815048.
34. Çetin FH, Taş Torun Y, Işık Taner Y. Atomoxetine versus OROS methylphenidate in attention deficit hyperactivity disorder: A six-month follow up study for efficacy and adverse effects. *Türkiye Klinikleri Journal of Medical Sciences*. 2015;35(2):88-96.
35. Hammerness P, Petty C, Faraone SV, et al. Do Stimulants Reduce the Risk for Alcohol and Substance Use in Youth With ADHD? A Secondary Analysis of a Prospective, 24-Month Open-Label Study of Osmotic-Release Methylphenidate. *J Atten Disord*. 2012 Dec 20;doi: 10.1177/1087054712468051. PMID: 23264367.
36. Beck SJ, Hanson CA, Puffenberger SS, et al. A controlled trial of working memory training for children and adolescents with ADHD. *J Clin Child Adolesc Psychol*. 2010;39(6):825-36. doi: 10.1080/15374416.2010.517162. PMID: 21058129.
37. Abikoff HB, Thompson M, Laver-Bradbury C, et al. Parent training for preschool ADHD: a randomized controlled trial of specialized and generic programs. *J Child Psychol Psychiatry*. 2015 Jun;56(6):618-31. doi: 10.1111/jcpp.12346. PMID: 25318650.
38. Chacko A, Bedard AC, Marks DJ, et al. A randomized clinical trial of Cogmed Working Memory Training in school-age children with ADHD: a replication in a diverse sample using a control condition. *J Child Psychol Psychiatry*. 2014 Mar;55(3):247-55. doi: 10.1111/jcpp.12146. PMID: 24117656.
39. Power TJ, Mautone JA, Soffer SL, et al. A family-school intervention for children with ADHD: results of a randomized clinical trial. *J Consult Clin Psychol*. 2012 Aug;80(4):611-23. doi: 10.1037/a0028188. PMID: 22506793.

40. Mautone JA, Marshall SA, Sharman J, et al. Development of a Family-School Intervention for Young Children With Attention Deficit Hyperactivity Disorder. *School Psych Rev.* 2012;41(4):447-66. PMID: 24353368.
41. Webster-Stratton CH, Reid MJ, Beauchaine T. Combining parent and child training for young children with ADHD. *J Clin Child Adolesc Psychol.* 2011;40(2):191-203. doi: 10.1080/15374416.2011.546044. PMID: 21391017.
42. Arnold LE, Disilvestro RA, Bozzolo D, et al. Zinc for attention-deficit/hyperactivity disorder: placebo-controlled double-blind pilot trial alone and combined with amphetamine. *J Child Adolesc Psychopharmacol.* 2011 Feb;21(1):1-19. doi: 10.1089/cap.2010.0073. PMID: 21309695.
43. Chacko A, Wymbs BT, Wymbs FA, et al. Enhancing traditional behavioral parent training for single mothers of children with ADHD. *J Clin Child Adolesc Psychol.* 2009 Mar;38(2):206-18. doi: 10.1080/15374410802698388. PMID: 19283599.
44. Ercan ES, Ardic UA, Kutlu A, et al. No beneficial effects of adding parent training to methylphenidate treatment for ADHD + ODD/CD children: a 1-year prospective follow-up study. *J Atten Disord.* 2014 Feb;18(2):145-57. doi: 10.1177/1087054711432884. PMID: 22522574.
45. van der Donk M, Hiemstra-Beernink AC, Tjeenk-Kalff A, et al. Cognitive training for children with ADHD: a randomized controlled trial of cogmed working memory training and 'paying attention in class'. *Front Psychol.* 2015;6:1081. doi: 10.3389/fpsyg.2015.01081. PMID: 26284005.
46. Widenhorn-Muller K, Schwanda S, Scholz E, et al. Effect of supplementation with long-chain omega-3 polyunsaturated fatty acids on behavior and cognition in children with attention deficit/hyperactivity disorder (ADHD): a randomized placebo-controlled intervention trial. *Prostaglandins Leukot Essent Fatty Acids.* 2014 Jul-Aug;91(1-2):49-60. doi: 10.1016/j.plefa.2014.04.004. PMID: 24958525.
47. van Dongen-Boomsma M, Vollebregt MA, Buitelaar JK, et al. Working memory training in young children with ADHD: a randomized placebo-controlled trial. *J Child Psychol Psychiatry.* 2014 Aug;55(8):886-96. doi: 10.1111/jcpp.12218. PMID: 24628438.
48. Ferrin M, Moreno-Granados JM, Salcedo-Marin MD, et al. Evaluation of a psychoeducation programme for parents of children and adolescents with ADHD: immediate and long-term effects using a blind randomized controlled trial. *Eur Child Adolesc Psychiatry.* 2014 Aug;23(8):637-47. doi: 10.1007/s00787-013-0494-7. PMID: 24292412.
49. Egeland J, Aarlien AK, Saunes BK. Few effects of far transfer of working memory training in ADHD: a randomized controlled trial. *PLoS One.* 2013;8(10):e75660. doi: 10.1371/journal.pone.0075660. PMID: 24124503.
50. Duric NS, Assmus J, Gundersen D, et al. Neurofeedback for the treatment of children and adolescents with ADHD: a randomized and controlled clinical trial using parental reports. *BMC Psychiatry.* 2012;12:107. doi: 10.1186/1471-244x-12-107. PMID: 22877086.
51. Storebo OJ, Gluud C, Winkel P, et al. Social-skills and parental training plus standard treatment versus standard treatment for children with ADHD--the randomised SOSTRA trial. *PLoS One.* 2012;7(6):e37280. doi: 10.1371/journal.pone.0037280. PMID: 22745657.
52. Moreno-García I, Delgado-Pardo G, de Reya CC-V, et al. Neurofeedback, pharmacological treatment and behavioral therapy in hyperactivity: Multilevel analysis of treatment effects on electroencephalography. *International Journal of Clinical and Health Psychology.* 2015;15(3):217-25. doi: 10.1016/j.ijchp.2015.04.003. PMID: 2015-48012-005.

53. Ferrin M, Perez-Ayala V, El-Abd S, et al. A Randomized Controlled Trial Evaluating the Efficacy of a Psychoeducation Program for Families of Children and Adolescents With ADHD in the United Kingdom: Results After a 6-Month Follow-Up. *J Atten Disord*. 2016 Feb 2doi: 10.1177/1087054715626509. PMID: 26838557.
54. Hong SS, Cho SH. Treating attention deficit hyperactivity disorder with acupuncture: A randomized controlled trial. *European Journal of Integrative Medicine*. 2015.
55. Sayer GR, McGough JJ, Levitt J, et al. Acute and Long-Term Cardiovascular Effects of Stimulant, Guanfacine, and Combination Therapy for Attention-Deficit/Hyperactivity Disorder. *J Child Adolesc Psychopharmacol*. 2016 Aug 2doi: 10.1089/cap.2015.0264. PMID: 27483130.
56. Gelade K, Janssen TW, Bink M, et al. Behavioral Effects of Neurofeedback Compared to Stimulants and Physical Activity in Attention-Deficit/Hyperactivity Disorder: A Randomized Controlled Trial. *J Clin Psychiatry*. 2016 Oct;77(10):e1270-e7. doi: 10.4088/JCP.15m10149. PMID: 27631143.
57. Anand P, Sachdeva A. Effect of Poly Unsaturated Fatty Acids Administration on Children with Attention Deficit Hyperactivity Disorder: A Randomized Controlled Trial. *J Clin Diagn Res*. 2016 Sep;10(9):Oc01-oc5. doi: 10.7860/jcdr/2016/20423.8471. PMID: 27790483.
58. Li JJ, Li ZW, Wang SZ, et al. Ningdong granule: a complementary and alternative therapy in the treatment of attention deficit/hyperactivity disorder. *Psychopharmacology (Berl)*. 2011 Aug;216(4):501-9. doi: 10.1007/s00213-011-2238-z. PMID: 21416235.
59. Hiscock H, Sciberras E, Mensah F, et al. Impact of a behavioural sleep intervention on symptoms and sleep in children with attention deficit hyperactivity disorder, and parental mental health: randomised controlled trial. *BMJ*. 2015;350:h68. doi: 10.1136/bmj.h68. PMID: 25646809.
60. Milte CM, Parletta N, Buckley JD, et al. Eicosapentaenoic and docosahexaenoic acids, cognition, and behavior in children with attention-deficit/hyperactivity disorder: a randomized controlled trial. *Nutrition*. 2012 Jun;28(6):670-7. doi: 10.1016/j.nut.2011.12.009. PMID: 22541055.
61. Raz R, Carasso RL, Yehuda S. The influence of short-chain essential fatty acids on children with attention-deficit/hyperactivity disorder: a double-blind placebo-controlled study. *J Child Adolesc Psychopharmacol*. 2009 Apr;19(2):167-77. doi: 10.1089/cap.2008.070. PMID: 19364294.
62. Clemow DB, Mason OW, Sarkis EH, et al. Atomoxetine monotherapy compared with combination therapy for the treatment of ADHD: a retrospective chart review study. *Expert Rev Neurother*. 2015 Oct 21;15(11):1353-66. doi: 10.1586/14737175.2015.1102060. PMID: 26488905.
63. Myers K, Vander Stoep A, Zhou C, et al. Effectiveness of a telehealth service delivery model for treating attention-deficit/hyperactivity disorder: a community-based randomized controlled trial. *J Am Acad Child Adolesc Psychiatry*. 2015 Apr;54(4):263-74. doi: 10.1016/j.jaac.2015.01.009. PMID: 25791143.
64. Piffner LJ, Hinshaw SP, Owens E, et al. A two-site randomized clinical trial of integrated psychosocial treatment for ADHD-inattentive type. *J Consult Clin Psychol*. 2014 Dec;82(6):1115-27. doi: 10.1037/a0036887. PMID: 24865871.
65. Steiner NJ, Frenette EC, Rene KM, et al. Neurofeedback and cognitive attention training for children with attention-deficit hyperactivity disorder in schools. *J Dev Behav Pediatr*. 2014 Jan;35(1):18-27. doi: 10.1097/dbp.0000000000000009. PMID: 24399101.

66. Abikoff H, Gallagher R, Wells KC, et al. Remediating organizational functioning in children with ADHD: immediate and long-term effects from a randomized controlled trial. *J Consult Clin Psychol*. 2013 Feb;81(1):113-28. doi: 10.1037/a0029648. PMID: 22889336.
67. Molina BS, Hinshaw SP, Swanson JM, et al. The MTA at 8 years: prospective follow-up of children treated for combined-type ADHD in a multisite study. *J Am Acad Child Adolesc Psychiatry*. 2009 May;48(5):484-500. doi: 10.1097/CHI.0b013e31819c23d0. PMID: 19318991.
68. Evans SW, Langberg JM, Schultz BK, et al. Evaluation of a School-Based Treatment Program for Young Adolescents With ADHD. *Journal of Consulting and Clinical Psychology*. 2016;84(1):15-30.
69. Findling RL, Adeyi B, Chen G, et al. Clinical response and symptomatic remission in children treated with lisdexamfetamine dimesylate for attention-deficit/hyperactivity disorder. *CNS Spectrums*. 2010;15(9):559-68.
70. Banaschewski T, Johnson M, Lecendreux M, et al. Health-related quality of life and functional outcomes from a randomized-withdrawal study of long-term lisdexamfetamine dimesylate treatment in children and adolescents with attention-deficit/hyperactivity disorder. *CNS Drugs*. 2014 Dec;28(12):1191-203. doi: 10.1007/s40263-014-0193-z. PMID: 25139785.
71. Cortese S, Panei P, Arcieri R, et al. Safety of Methylphenidate and Atomoxetine in Children with Attention-Deficit/Hyperactivity Disorder (ADHD): Data from the Italian National ADHD Registry. *CNS Drugs*. 2015 Oct;29(10):865-77. doi: 10.1007/s40263-015-0266-7. PMID: 26293742.
72. Didoni A, Sequi M, Panei P, et al. One-year prospective follow-up of pharmacological treatment in children with attention-deficit/hyperactivity disorder. *Eur J Clin Pharmacol*. 2011 Oct;67(10):1061-7. doi: 10.1007/s00228-011-1050-3. PMID: 21538145.
73. Tobaiqy M, Stewart D, Helms PJ, et al. Parental reporting of adverse drug reactions associated with attention-deficit hyperactivity disorder (ADHD) medications in children attending specialist paediatric clinics in the UK. *Drug Saf*. 2011 Mar 1;34(3):211-9. doi: 10.2165/11586050-000000000-00000. PMID: 21332245.
74. Panei P, Arcieri R, Bonati M, et al. Safety of psychotropic drug prescribed for attention-deficit/hyperactivity disorder in Italy. *Adverse Drug Reaction Bulletin*. 2010(260):999-1002.
75. Dovis S, Van der Oord S, Wiers RW, et al. Improving executive functioning in children with ADHD: training multiple executive functions within the context of a computer game. a randomized double-blind placebo controlled trial. *PLoS One*. 2015;10(4):e0121651. doi: 10.1371/journal.pone.0121651. PMID: 25844638.
76. Vidal R, Castells J, Richarte V, et al. Group therapy for adolescents with attention-deficit/hyperactivity disorder: a randomized controlled trial. *J Am Acad Child Adolesc Psychiatry*. 2015 Apr;54(4):275-82. doi: 10.1016/j.jaac.2014.12.016. PMID: 25791144.
77. Boyer BE, Geurts HM, Prins PJ, et al. Two novel CBTs for adolescents with ADHD: the value of planning skills. *Eur Child Adolesc Psychiatry*. 2015 Sep;24(9):1075-90. doi: 10.1007/s00787-014-0661-5. PMID: 25549767.
78. Ostberg M, Rydell AM. An efficacy study of a combined parent and teacher management training programme for children with ADHD. *Nord J Psychiatry*. 2012 Apr;66(2):123-30. doi: 10.3109/08039488.2011.641587. PMID: 22150634.
79. Pelsser LM, Frankena K, Toorman J, et al. Effects of a restricted elimination diet on the behaviour of children with attention-deficit hyperactivity disorder (INCA study): a randomised controlled trial. *Lancet*. 2011 Feb 5;377(9764):494-503. doi: 10.1016/s0140-6736(10)62227-1. PMID: 21296237.



80. Gustafsson PA, Birberg-Thornberg U, Duchon K, et al. EPA supplementation improves teacher-rated behaviour and oppositional symptoms in children with ADHD. *Acta Paediatr.* 2010 Oct;99(10):1540-9. doi: 10.1111/j.1651-2227.2010.01871.x. PMID: 20491709.
81. Gevensleben H, Holl B, Albrecht B, et al. Is neurofeedback an efficacious treatment for ADHD? A randomised controlled clinical trial. *J Child Psychol Psychiatry.* 2009 Jul;50(7):780-9. doi: 10.1111/j.1469-7610.2008.02033.x. PMID: 19207632.
82. Johnson M, Ostlund S, Fransson G, et al. Omega-3/omega-6 fatty acids for attention deficit hyperactivity disorder: a randomized placebo-controlled trial in children and adolescents. *J Atten Disord.* 2009 Mar;12(5):394-401. doi: 10.1177/1087054708316261. PMID: 18448859.
83. Trzepacz PT, Spencer TJ, Zhang S, et al. Effect of atomoxetine on Tanner stage sexual development in children and adolescents with attention deficit/hyperactivity disorder: 18-month results from a double-blind, placebo-controlled trial. *Curr Med Res Opin.* 2011;27 Suppl 2:45-52. doi: 10.1185/03007995.2011.599372. PMID: 21973230.
84. Sallee FR, Lyne A, Wigal T, et al. Long-term safety and efficacy of guanfacine extended release in children and adolescents with attention-deficit/hyperactivity disorder. *J Child Adolesc Psychopharmacol.* 2009 Jun;19(3):215-26. doi: 10.1089/cap.2008.0080. PMID: 19519256.
85. Sibley MH, Graziano PA, Kuriyan AB, et al. Parent-teen behavior therapy + motivational interviewing for adolescents with ADHD. *J Consult Clin Psychol.* 2016 Aug;84(8):699-712. doi: 10.1037/ccp0000106. PMID: 27077693.
86. Newcorn JH, Harpin V, Huss M, et al. Extended-release guanfacine hydrochloride in 6-17-year olds with ADHD: a randomised-withdrawal maintenance of efficacy study. *J Child Psychol Psychiatry.* 2016 Jun;57(6):717-28. doi: 10.1111/jcpp.12492. PMID: 26871297.
87. Hahn-Markowitz J, Berger I, Manor I, et al. Efficacy of Cognitive-Functional (Cog-Fun) Occupational Therapy Intervention Among Children With ADHD: An RCT. *J Atten Disord.* 2016 Sep 16doi: 10.1177/1087054716666955. PMID: 27637735.
88. Mohammadpour N, Jazayeri S, Tehrani-Doost M, et al. Effect of vitamin D supplementation as adjunctive therapy to methylphenidate on ADHD symptoms: A randomized, double blind, placebo-controlled trial. *Nutr Neurosci.* 2016 Dec 07:1-8. doi: 10.1080/1028415x.2016.1262097. PMID: 27924679.
89. Arcieri R, Germinario EA, Bonati M, et al. Cardiovascular measures in children and adolescents with attention-deficit/hyperactivity disorder who are new users of methylphenidate and atomoxetine. *J Child Adolesc Psychopharmacol.* 2012 Dec;22(6):423-31. PMID: 23362511.
90. Bink M, van Nieuwenhuizen C, Popma A, et al. Behavioral effects of neurofeedback in adolescents with ADHD: a randomized controlled trial. *Eur Child Adolesc Psychiatry.* 2015 Sep;24(9):1035-48. doi: 10.1007/s00787-014-0655-3. PMID: 25477074.

## Appendix H. Data Tables

**Table H-1. Diagnostic accuracy of included studies with subjects ages 6 and under**

<b>Quality (Study)<sup>a</sup> N Subjects Diagnostic Tool(s)</b>	<b>Gold Standard</b>	<b>Overall Accuracy</b>	<b>AUC</b>	<b>Sensitivity</b>	<b>Specificity</b>	<b>PPV</b>	<b>NPV</b>
<b>Observational assessment studies</b>							
Fair quality (Bunte, 2013 <sup>1,2</sup> ) 178 subjects (120 ADHD, 58 non-ADHD) 1. Disruptive Behavior – Diagnostic Observation Schedule	Clinical interview with psychiatrist and psychologist who agreed on diagnosis using K-DBDS semi-structured DSM-4 interview		92%	87%	79%		
<b>Executive function studies</b>							
Fair quality (Thorell, 2010 <sup>3</sup> ) 52 subjects (22 ADHD, 30 non-ADHD) 1. Childhood Executive Function Inventory– Parent rating inhibition subscale	Children met the symptom criteria, the age of onset criterion (i.e., <7 years) the pervasiveness criterion (symptoms present in two settings), and the duration criterion (>6 months) for ADHD according to DSM-IV. Subjects saw a child psychologist and if deemed "at risk" they were given scales to confirm diagnosis.	93.3%		93.3%	93.3%		
<b>Standardized questionnaire studies</b>							
Fair quality (Bunte, 2013 <sup>1,2</sup> ) Subgroup = ADHD subtypes 168 subjects (110 ADHD HI, 58 non-ADHD) 1. Kiddie-Disruptive Behavior Disorder Schedule (K-DBDS) – specific coding method	Clinical interview with psychiatrist and psychologist who agreed on diagnosis using K-DBDS semi-structured DSM-4 interview		98% (ADHD-HI)	77% (ADHD-HI)	98% (ADHD-HI)		

<sup>a</sup> See Methods section "Quality Assessment of Individual Studies" for definitions of quality assessment ratings.

Abbreviations: ADHD=attention deficit hyperactivity disorder; ADHD-C=ADHD combined type; ADHD-HI=ADHD hyperactive/impulsive type; ADHD-I=ADHD inattentive type; AUC=area under the curve; CPT=continuous performance test; EEG=electroencephalogram; IVA=integrated visual and auditory; MRI=magnetic resonance imaging; NPV=negative predictive value; PPV= positive predictive value; TOVA=test of variables of attention

**Table H-2. Diagnostic accuracy of included studies with subjects ages 7-17**

<b>Quality (Study)<sup>a</sup> N Subjects Diagnostic Tool(s)</b>	<b>Gold Standard</b>	<b>Overall Accuracy</b>	<b>AUC</b>	<b>Sensitivity</b>	<b>Specificity</b>	<b>PPV</b>	<b>NPV</b>
<b>Biometric devices</b>							
Poor quality (Martin-Martinez, 2012 <sup>4</sup> ) 63 subjects (31 ADHD, 32 non-ADHD) 1. Actigraphy-PCA1 [Px00(15 min, D) + Pz22 (1 min, FR) + Py01 (15 min, AA)]	Case group was diagnosed as having the combined kind of ADHD according to the DSM-IV criteria	90.48%	94.96%	96.77%	84.38%		
<b>EEG and imaging studies</b>							
Fair quality (Markovska-Simoska, 2016 <sup>5</sup> ) 60 subjects (30 ADHD, 30 non-ADHD) 1. EEG Theta-Beta Ratio 2. EEG absolute theta 3. EEG absolute beta 4. EEG relative theta 5. EEG relative beta	Team of neuropsychologist, pediatrician and clinical psychologist. Also used Conners rating scale			58.6% 100% 86.2% 68.6% 0%	92.2% 71.1% 34.4% 60.0% 100%		
Fair quality (Gonzalez, 2013 <sup>6</sup> ) 43 subjects (22 ADHD, 21 non-ADHD) 1. EEG IM generalized 2. EEG IM beta band	Physical examination, clinical interview and a structured checklist covering DSM-IV and ICD-10 criteria	86.7% 74.4%		81.80% 63.60%	90.50% 90.50%		

<b>Quality (Study)<sup>a</sup> N Subjects Diagnostic Tool(s)</b>	<b>Gold Standard</b>	<b>Overall Accuracy</b>	<b>AUC</b>	<b>Sensitivity</b>	<b>Specificity</b>	<b>PPV</b>	<b>NPV</b>
Fair quality (Liechti, 2013 <sup>7</sup> ) 62 subjects (32 ADHD, 30 non-ADHD) 1. EEG + event-related potentials—including all stepwise variables	Children with ADHD combined subtype (DSM-IV), aged 8–16 years, were diagnosed using the semi-structured clinical diagnostic interview PACS (parental account of children's symptoms; plus Conners teacher rating scale—revised	72.6%		71.9%	73.3%		
Fair quality (Castro-Cabrera, 2010 <sup>8</sup> ) 46 subjects (23 ADHD, 23 non-ADHD) 1. Event-related potentials—best combination of features	Medical diagnostic was determined by neurophysiological evaluation based on clinical criteria of DSM IV	91.3%	94%	96%	87%		
Fair quality (Soliva, 2010 <sup>9</sup> ) Subgroup = ADHD subtypes 78 subjects (39 ADHD, 39 non-ADHD) 1. MRI of caudate body volume	ADHD subjects were diagnosed by a team consisting of a psychologist and a psychiatrist. Scoring was based on parent and teacher rating scales, as well as a semi-structured clinical interview, which systematically reviewed DSM-IV-TR criteria for ADHD, oppositional-defiant disorder, conduct disorder, and depressive and anxiety disorders (DICA-IV).	84%		60.0%	95.0%		
<b>EEG, imaging, and CPT studies</b>							

<b>Quality (Study)<sup>a</sup> N Subjects Diagnostic Tool(s)</b>	<b>Gold Standard</b>	<b>Overall Accuracy</b>	<b>AUC</b>	<b>Sensitivity</b>	<b>Specificity</b>	<b>PPV</b>	<b>NPV</b>
Fair quality (Kim, 2015 <sup>10</sup> ) 97 subjects (53 ADHD, 44 non-ADHD) 1. EEG theta-phase gamma-amplitude coupling 2. EEG delta wave 3. EEG theta/beta ratio 4. IVA CPT commission error 5. IVA CPT omission error	ADHD Diagnosis was based on a Korean version of the Diagnostic Interview Schedule for Children Version IV (DISC-IV) and the diagnoses were confirmed by multiple child and adolescent psychiatrists. The DISC-IV uses diagnostic criteria as specified in DSM-IV.	71.1% 63.3% 58.7% 75.3% 68.1%		60% 56% 49% 66% 58%	23% 27% 30% 18% 27%		
Fair quality (Kim, 2015 <sup>11</sup> ) 157 subjects (85 ADHD, 72 non-ADHD) 1. EEG delta wave 2. EEG theta wave 3. EEG theta/beta ratio 4. IVA CPT commission error 5. IVA CPT omission error	ADHD Diagnosis was based on a Korean version of the Diagnostic Interview Schedule for Children Version IV (DISC-IV) and the diagnoses were confirmed by multiple child and adolescent psychiatrists. The DISC-IV uses diagnostic criteria as specified in DSM-IV.	60.8% 56.4% 45.7% 82.1% 78.6%		60.1% 48.2% 47.1% 68.1% 64.7%	43.0% 40.5% 49.4% 9.54% 13.7%		
Fair quality (Ogrim, 2012 <sup>12</sup> ) 101 subjects (62 ADHD, 39 non-ADHD) 1. EEG theta 2. EEG theta/beta ratio 3. Visual CPT omission error	All diagnoses were according to DSM IV-TR and accepted clinical guidelines. A senior neuropsychologist (GO) was responsible for diagnostic conclusions after discussions in the team, which included a pediatrician and a clinical psychologist.	63% 58% 85%					
<b>CPT studies</b>							
Fair quality (Park, 2016 <sup>13</sup> ) Subgroups = ADHD subtype 114 subjects (79 ADHD, 35 non-ADHD) 1. Advanced Test of Attention	DSM-4 criteria and Korean version of the K-SADS-PL-K	72.8%		84.8%	45.7%	77.9%	57.1%

<b>Quality (Study)<sup>a</sup> N Subjects Diagnostic Tool(s)</b>	<b>Gold Standard</b>	<b>Overall Accuracy</b>	<b>AUC</b>	<b>Sensitivity</b>	<b>Specificity</b>	<b>PPV</b>	<b>NPV</b>
Fair quality (Zelnik, 2012 <sup>14</sup> ) 230 subjects (179 ADHD, 51 non-ADHD) 1. TOVA (Test of Variables of Attention)	Clinical diagnostic work-up included a family interview about the behavioral and neurodevelopmental history of the child, neurological evaluation and observation at the physician's office, utilization of the DSM-IV diagnostic criteria, and employment of the Conners Rating Scales			91.1%	21.6%	80.3%	40.7%
Fair quality (Berger, 2010 <sup>15</sup> ) 58 subjects (45 ADHD, 13 non-ADHD) 1. Continuous performance functions tests (CPT) 2. TOVA 3. Conners CPT 4. TOVA + Conners CPT	A neurologic examination, the completion of DSM-based questionnaires by parents and teachers, and neuropsychologic evaluation confirmed the diagnosis	94.8% — —		100% 75% 52% 64%			
<b>CPT and executive function studies</b>							
Fair quality (Bloch, 2012 <sup>16</sup> ) 34 subjects (27 ADHD, 7 non-ADHD) 1. Cambridge Neuropsychological Testing Automated Battery 2. TOVA	Consensus achieved on a structured interview by a psychologist using DSM-IV based assessment and a clinical interview by child and adolescent psychiatrist			57%-71% 63%	7%-22% 85%	94%	37%
<b>Executive function studies</b>							
Good quality (Klenberg, 2010 <sup>17</sup> ) Subgroups = sex & ADHD subtype 916 subjects (215 ADHD, 701 non-ADHD) 1. Attention and Executive Function Rating Inventory	Diagnoses were based on structured interviews of parents and children and a parent rating scale (ADHD RS-IV: Home Version) and teacher reports from school	91% (boys) 93% (girls)	87% subtype	85% (boys) 83% (girls) 81% (subtype)	84% (boys) 85% (girls) 76% (subtype)		

Quality (Study) <sup>a</sup> N Subjects Diagnostic Tool(s)	Gold Standard	Overall Accuracy	AUC	Sensitivity	Specificity	PPV	NPV
<b>Biometric devices</b>							
Fair quality (Caudal, 2011 <sup>18</sup> ) 112 subjects (52 ADHD, 60 non-ADHD) 1. Electro-interstitial scans	Children diagnosed with ADHD according to the DSM-IV and further examinations			80%	98%		
<b>Observational assessment studies</b>							
Fair quality (Ferrin, 2012 <sup>19</sup> ) Subgroup = age 1185 subjects (1055 ADHD, 130 non-ADHD) 1. Neurological subtle signs	ADHD status was categorically defined by the semistructured clinical interview of their parent's K-SADS-PL, and dimensionally by the Conners' Global Index (CGI). The K-SADS-PL is a semi-structured diagnostic interview designed to assess current and past episodes of psychopathology in children and adolescents according to DSM-IV criteria.	84%	90.3% (<13 year) 77.9% (≥13 year)				
Poor quality (Carballo, 2014 <sup>20</sup> ) Subgroup = ADHD subtypes 523 subjects (283 ADHD, 240 non-ADHD) 1. Strengths and Difficulties Questionnaire	Positive ADHD diagnosis based exclusively on the ADHD RS-IV which assesses DSM-IV-TR ADHD symptoms			38.3% (ADHD) 84% (ADHD-C) 25% (ADHD-I) 77.8% (ADHD-HI)	66.7% (ADHD) 60.0% (ADHD-C) 75.0% (ADHD-I) 66.7% (ADHD-HI)		

<sup>a</sup> See Methods section "Quality Assessment of Individual Studies" for definitions of quality assessment ratings.

Abbreviations: ADHD=attention deficit hyperactivity disorder; ADHD-C=ADHD combined type; ADHD-HI=ADHD hyperactive/impulsive type; ADHD-I=ADHD inattentive type; AUC=area under the curve; CPT=continuous performance test; EEG=electroencephalogram; IVA=integrated visual and auditory; MRI=magnetic resonance imaging; NPV=negative predictive value; PPV= positive predictive value; TOVA=test of variables of attention

**Table H-3. Adverse events reported in Italian National ADHD Registry**

<b>Reported Adverse Event of Interest</b>	<b>Atomoxetine (%)</b>	<b>Methylphenidate (%)</b>
<b>Cortese, 2015<sup>21</sup></b>	N=753	N=1350
GI effects	1.3	0.4
Eating disorders	1.5	0.7
Suicidal Ideation	0.7	0
Sleep disorders	0.4	.07
Mood disorders	0.5	0.07
Tachycardia	0.5	0.1
<b>Didoni, 2011<sup>22</sup></b>	N=96	N=34
Decreased appetite	16	15
Irritability	9	0
Tachycardia	8	0
Unstable mood	7	0
Insomnia	3	3
Tics	2	3
Abdominal pain	3	0
Dyspepsia	3	0
Epigastralgia	8	0
<b>Pane, 2010<sup>23</sup></b>	N=781	N=643
Suicidal ideation	0.4	0
ECG abnormality	1	0.9
Tics	0	0.2
Decreased appetite	0.3	0.3
GI disease	0.9	0
Increased blood pressure	0.1	0.2

Abbreviations: ECG=electrocardiogram; GI=gastrointestinal

**Table H-4. Rates of adverse events**

<b>Selected Adverse Event</b>	<b>Monotherapy N=206</b>	<b>Combination Therapy N=53</b>
Somnolence	38%	–
Headache	25%	23%
Fatigue	15%	–
Upper abdominal pain	12%	15%
Syncope	2%	0%



**Table H-5. Findings on pharmacologic versus nonpharmacologic interventions for ADHD**

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Type of ADHD Diagnosis Criteria Age range in years % Male	Intervention	Comparison	Follow- up Times	Findings–Intervention	Findings–Comparison
<b>Academic performance</b>						
Molina, 2009 <sup>24</sup> (Vitiello, 2012 <sup>25</sup> ) 579 Fair RCT  b	Combined Type DSM-IV 7.0-9.9 years 80% Male	Medication management	Behavioral training (parent group, parent individual, classroom (student), and teacher sessions)  Combination: Medication management and Behavioral training  Usual care	8 years	WIAT reading Mean = 96.1 (SD = 14.2) p=.8541 WIAT math = 91.5 (SD = 14.8) p=.5156 GPA = 2.79 (SD = .57) p=.3354	WIAT reading Mean = 96.2 (SD = 13.2) WIAT math = 96 (SD = 17) GPA = 2.83 (SD = .56)  WIAT reading Mean = 94.7 (SD = 14.5) WIAT math = 94.7 (SD = 17.4) GPA = 2.7 (SD = 0.56)  WIAT reading Mean = 95.6 (SD = 13.4) WIAT math = 95.7 (SD = 15.9) GPA = 2.71 (SD = 0.59)
<b>Aggression</b>						
Molina, 2009 <sup>24</sup> (Vitiello, 2012 <sup>25</sup> ) 579 Fair RCT  b	Combined Type DSM-IV 7.0-9.9 years 80% Male	Medication management	Behavioral training (parent group, parent individual, classroom (student), and teacher sessions)  Combination: Medication management and Behavioral training  Usual care	8 years	Aggression conduct parent measure rated 1 (never) to 4 (often) Mean = 1.17 (SD = .22 ) p=.4511	Aggression conduct parent measure rated 1 (never) to 4 (often) Mean = 1.13 (SD = .17)  Aggression conduct parent measure rated 1 (never) to 4 (often) Mean = 1.15 (SD = .24)  Aggression conduct parent measure rated 1 (never) to 4 (often) Mean = 1.15 (SD = .23)

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Type of ADHD Diagnosis Criteria Age range in years % Male	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison
<b>Behavior changes</b>						
Gelade, 2016 <sup>26</sup> 112 Good RCT  b	Combined Type DSM-IV-TR 9.63 years (SD1.76) 76% Male	Neurofeedback training	MPH	12 weeks	SWAN-Inattention (parent) Mean = -0.32 (95% CI: -0.53, -0.10) SWAN-Hyperactivity/Impulsiveness (parent) Mean = -0.29 (95% CI: -0.50, -0.07)  SWAN-Inattention (teacher) Mean = -0.10 (95% CI: -0.31, -0.11) SWAN-Hyperactivity/Impulsiveness (teacher) Mean = -0.03 (95% CI: -0.28, 0.23)	SWAN-Inattention (parent) Mean = -0.78 (95%CI: -1.03 to -0.53) SWAN-Hyperactivity/Impulsiveness (parent) Mean = -0.52 (95% CI: -0.74 to -0.30)  SWAN-Inattention (teacher) Mean = -0.95 (95% CI: -1.23 to -0.68) SWAN-Hyperactivity/Impulsiveness (teacher) Mean = -0.70 (95% CI: -1.05 to -0.34)
Barragan, 2014 <sup>27</sup> 90 Poor RCT  b	Any subtype DSM-IV-TR 6-12 years 67.0% Male	MPH (maximum 1 mg/kg/day)	Omega-3/6 fatty acid supplementation (6 capsules/day)  MPH (maximum 1 mg/kg/day and omega-3/6 fatty acid supplementation (6 capsules/day)	1 year	Irritability by the end of the study period (clinical assessment) % patients with outcome = 23.33	Irritability by the end of the study period (clinical assessment) % patients with outcome = 0  Irritability by the end of the study period % patients with outcome = 0
Li, 2011 <sup>28</sup> 72 Good RCT  b	NR DSM-IV 6-13 years 65.3% Male	MPH 1 mg/kg/day	Ningdong granule (a traditional Chinese medicine preparation)	8 weeks	Anxiety # patients with outcome = 5	Anxiety # patients with outcome = 1
<b>Changes in appetite</b>						
Barragan, 2014 <sup>27</sup> 90 Poor RCT  b	Any subtype DSM-IV-TR 6-12 years 67.0% Male	MPH (maximum 1 mg/kg/day)	Omega-3/6 fatty acid supplementation (6 capsules/day)  MPH (maximum 1 mg/kg/day and omega-3/6 fatty acid supplementation (6 capsules/day)	1 year	Appetite suppression by the end of the study period % patients with outcome = 70	Appetite suppression by the end of the study period % patients with outcome = 33.3  Appetite suppression by the end of the study period % patients with outcome = 6.7
Li, 2011 <sup>28</sup> 72 Good RCT  b	NR DSM-IV 6-13 years 65.3% Male	MPH 1 mg/kg/day	Ningdong granule (a traditional Chinese medicine preparation)	8 weeks	Decreased appetite # patients with outcome = 13 Increased appetite # patients with outcome = 4	Decreased appetite # patients with outcome = 1 Increased appetite # patients with outcome = 5

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Type of ADHD Diagnosis Criteria Age range in years % Male	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison
Salehi, 2010 <sup>29</sup> 50 Good RCT  b	Combined Type DSM-IV-TR 6-14 years 78% Male	MPH (up to 30 mg/day)	Ginkgo biloba	6 weeks	Decreased appetite # patients with outcome = 5	Decreased appetite # patients with outcome = 19
<b>Changes in standardized symptom scores</b>						
Barragan, 2014 <sup>27</sup> 90 Poor RCT  b	Any subtype DSM-IV-TR 6-12 years 67.0% Male	MPH (maximum 1 mg/kg/day)	Omega-3/6 fatty acid supplementation (6 capsules/day)  MPH (maximum 1 mg/kg/day and omega-3/6 fatty acid supplementation (6 capsules/day)	1 year	ADHD-RS total score – 6 month Mean = 25.43 (SD = 4.84) ADHD-RS inattention – 6 months Mean = 11.73 (SD = 1.78) ADHD- RS hyperactivity – 6 months Mean = 13.7 (SD = 3.71) ADHD- RS – total – 12 month Mean = 25.83 (SD = 4.67) ADHD-RS inattention – 12 month Mean = 12.03 (SD = 1.71) ADHD-RS hyperactive – 12 month Mean = 13.8 (SD = 3.68)	ADHD-RS total score – 6 month Mean = 28.17 (SD = 7.92) ADHD-RS inattention – 6 months Mean = 12.33 (SD = 2.83) ADHD-RS hyperactivity – 6 months Mean = 15.83 (SD = 5.78) ADHD-RS – total – 12 month Mean = 27.77 (SD = 7.84) ADHD-RS inattention – 12 month Mean = 12.17 (SD = 2.7) ADHD-RS hyperactive – 12 month Mean = 15.6 (SD = 5.68)  ADHD-RS total score – 6 month Mean = 25.5 (SD = 5.01) ADHD-RS inattention – 6 months Mean = 11.7 (SD = 2.17) ADHD-RS hyperactivity – 6 months Mean = 13.8 (SD = 3.28) ADHD-RS – total – 12 month Mean = 24.33 (SD = 5.09) ADHD-RS inattention – 12 month Mean = 11.3 (SD = 1.95) ADHD-RS hyperactive – 12 month Mean = 13.03 (SD = 3.44)
Duric 2012 <sup>30</sup> (Duric, 2014 <sup>31</sup> ) 91 Poor RCT  b	Attention and Hyperactive ICD-10 Diagnosis Criteria 6-18 years 80% Male	MPH (dose not reported) MPH + Neurofeedback	Neurofeedback	10 weeks	Total: Barkley Rating Scale for parent's Mean w/in group change = 7.9 95% CI = 4.5-11.4 p=0.31	Total: Barkley Rating Scale for parent's Mean w/in group change = 8.6 95% CI = 5.0-12.2

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Type of ADHD Diagnosis Criteria Age range in years % Male	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison
Li, 2011 <sup>28</sup> 72 Good RCT  b	NR DSM-IV 6-13 years 65.3% Male	MPH 1 mg/kg/day	Ningdong granule (a traditional Chinese medicine preparation)	8 weeks	ADHD-RS Parent Mean w/in group change = 13.3 (SD = 3.2)	ADHD-RS Parent Mean w/in group change = 14.1 (SD = 2.9)
Salehi, 2010 <sup>29</sup> 50 Good RCT  b	Combined Type DSM-IV-TR 6-14 years 78% Male	MPH (up to 30 mg/day)	Ginkgo biloba	6 weeks	Parent ADHD Rating Scale-IV Mean = 26 ( 13,38) p<0.01 Teacher ADHD Rating Scale-IV Mean = 25 (15,35) p<0.001	Parent ADHD Rating Scale-IV Mean = 16 ( 5, 27)  Teacher ADHD Rating Scale-IV Mean = 11 (4, 20)
Moreno-Garcia, 2015 <sup>32</sup> 57 Fair RCT  b	Combined, Inattentive and Hyperactive/Impulsive DSM-V 7-14 years 77.2% Male	Standard Pharmacological Treatment	Neurofeedback   Behavioral treatment	20 weeks	Integrated Visual and Auditory Continuous Performance Test (IVA/CPT) – Full Scale Attention Mean = 2.1 (SD = 16.88) p=.002 p=0.013	Integrated Visual and Auditory Continuous Performance Test (IVA/CPT) – Full Scale Attention Mean = -28.57 (SD = 11.67)  Integrated Visual and Auditory Continuous Performance Test (IVA/CPT) – Full Scale Attention Mean = -3.88 (SD = 16.24)
<b>Chemical leukoderma</b>						
Li, 2011 <sup>28</sup> 72 Good RCT  b	NR DSM-IV 6-13 years 65.3% Male	MPH 1 mg/kg/day	Ningdong granule (a traditional Chinese medicine preparation)	8 weeks	ADHD-RS Teacher Mean w/in group change = 12.3 (SD = 3.1)	ADHD-RS Teacher Mean w/in group change = 13.9 (SD = 2.3)
<b>Depression or anxiety</b>						
Salehi, 2010 <sup>29</sup> 50 Good RCT  b	Combined Type DSM-IV-TR 6-14 years 78% Male	MPH (up to 30 mg/day)	Ginkgo biloba	6 weeks	Sadness # patients with outcome = 2 Anxiety # patients with outcome = 7	Sadness # patients with outcome = 7 Anxiety # patients with outcome = 9

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Type of ADHD Diagnosis Criteria Age range in years % Male	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison
Molina, 2009 <sup>24</sup> (Vitiello, 2012 <sup>25</sup> ) 579 Fair RCT  b	Combined Type DSM-IV 7.0-9.9 years 80% Male	Medication management	Behavioral training (parent group, parent individual, classroom (student), and teacher sessions)  Combination: Medication management and Behavioral training  Usual care	8 years	Depression (CDI) Mean = 5.78 (SD = 7.84) Anxiety (MASC) Mean = 77.7 (SD = 14.9)	Depression (CDI) Mean = 7.84 (SD = 7.24) Anxiety (MASC) Mean = 82.8 (SD = 16.7)  Depression (CDI) Mean = 8 (SD = 7.66) Anxiety (MASC) Mean = 84.1 (SD = 18.3)  Depression (CDI) Mean = 7.19 (SD = 7.73) Anxiety (MASC) Mean = 85.8 (SD = 19.7)
<b>Elevated blood pressure</b>						
Molina, 2009 <sup>24</sup> (Vitiello, 2012 <sup>25</sup> ) 579 Fair RCT  b	Combined Type DSM-IV 7.0-9.9 years 80% Male	Medication management	Behavioral training (parent group, parent individual, classroom (student), and teacher sessions)  Combination: Medication management and Behavioral training  Usual care	8 years	SBP at 14 months Mean = 102.4 (SD = 9.7) DBP at 14 months Mean = 67.6 (SD = 9.6)	SBP at 14 months Mean = 103.2 (SD = 10.3) DBP at 14 months Mean = 68.9 (SD = 9.1)  SBP at 14 months Mean = 102.6 (SD = 10.2) DBP at 14 months Mean = 66.5 (SD = 10.4)  SBP at 14 months Mean = 104.1 (SD = 10.6) DBP at 14 months Mean = 67.8 (SD = 8.8)

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Type of ADHD Diagnosis Criteria Age range in years % Male	Intervention	Comparison	Follow- up Times	Findings–Intervention	Findings–Comparison
<b>Functional impairment</b>						
Barragan, 2014 <sup>27</sup> 90 Poor RCT  b	Any subtype DSM-IV-TR 6-12 years 67.0% Male	MPH (maximum 1 mg/kg/day)	Omega-3/6 fatty acid supplementation (6 capsules/day)  MPH (maximum 1 mg/kg/day and omega-3/6 fatty acid supplementation (6 capsules/day)	1 year	CGI-severity – parents- 6 months Mean = 4 (SD = 0.98) CGI-clinician – 6 months Mean = 4 (SD = 1.08) CGI-parent – 12 month Mean = 4.1 (SD = 1.06) CGI-clinician – 12 month Mean = 4.1 (SD = 1.06)	CGI-severity – parents- 6 months Mean = 3.97 (SD = 1.33) CGI-clinician – 6 months Mean = 4.1 (SD = 1.32) CGI-parent – 12 month Mean = 3.7 (SD = 1.51) CGI-clinician – 12 month Mean = 3.7 (SD = 1.51)  CGI-severity – parents- 6 months Mean = 3.23 (SD = 0.866) CGI-clinician – 6 months Mean = 3.23 (SD = 0.86) CGI-parent – 12 month Mean = 3.63 (SD = 0.85) CGI-clinician – 12 month Mean = 3.63 (SD = 0.85)
<b>Gastrointestinal symptoms</b>						
Barragan, 2014 <sup>27</sup> 90 Poor RCT  b	Any subtype DSM-IV-TR 6-12 years 67.0% Male	MPH (maximum 1 mg/kg/day)	Omega-3/6 fatty acid supplementation (6 capsules/day)  MPH (maximum 1 mg/kg/day and omega-3/6 fatty acid supplementation (6 capsules/day)	1 year	Dyspepsia by the end of the study period % patients with outcome = 0	Dyspepsia by the end of the study period % patients with outcome = 0  Dyspepsia by the end of the study period % patients with outcome = 40
Li, 2011 <sup>28</sup> 72 Good RCT  b	NR DSM-IV 6-13 years 65.3% Male	MPH 1 mg/kg/day	Ningdong granule (a traditional Chinese medicine preparation)	8 weeks	Nausea # patients with outcome = 16 Stomach pain # patients with outcome = 12	Nausea # patients with outcome = 2 Stomach pain # patients with outcome = 2
<b>Incarceration</b>						

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Type of ADHD Diagnosis Criteria Age range in years % Male	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison
Molina, 2009 <sup>24</sup> (Vitiello, 2012 <sup>25</sup> ) 579 Fair RCT  b	Combined Type DSM-IV 7.0-9.9 years 80% Male	Medication management	Behavioral training (parent group, parent individual, classroom (student), and teacher sessions)  Combination: Medication management and Behavioral training  Usual care	8 years	Arrested once % patients with outcome = 22.4 p=.735 Arrested 2 or more times % patients with outcome = 10.3 p=.735	Arrested once % patients with outcome = 17.4 Arrested 2 or more times % patients with outcome = 7.8  Arrested once % patients with outcome = 18.9 Arrested 2 or more times % patients with outcome = 5.7  Arrested once % patients with outcome = 22.9 Arrested 2 or more times % patients with outcome = 7.8
<b>Increased heart rate</b>						
Molina, 2009 <sup>24</sup> (Vitiello, 2012 <sup>25</sup> ) 579 Fair RCT  b	Combined Type DSM-IV 7.0-9.9 years 80% Male	Medication management	Behavioral training (parent group, parent individual, classroom (student), and teacher sessions)  Combination: Medication management and Behavioral training  Usual care	14 months	Heart rate at 14 months Mean = 84.2 (SD = 12.4) Incidence of Tachycardia at 14 months % patients with outcome = .8	Heart rate at 14 months Mean = 79.1 (SD = 12) Incidence of Tachycardia at 14 months % patients with outcome = .8  Heart rate at 14 months Mean = 84.6 (SD = 12.2) Incidence of Tachycardia at 14 months % patients with outcome = 2.2  Heart rate at 14 months Mean = 78.9 (SD = 12.9) Incidence of Tachycardia at 14 months % patients with outcome = 2.5

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Type of ADHD Diagnosis Criteria Age range in years % Male	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison
<b>Motor vehicle collisions</b>						
Molina, 2009 <sup>24</sup> (Vitiello, 2012 <sup>25</sup> ) 579 Fair RCT  b	Combined Type DSM-IV 7.0-9.9 years 80% Male	Medication management	Behavioral training (parent group, parent individual, classroom (student), and teacher sessions)  Combination: Medication management and Behavioral training  Usual care	8 years	Accidents, citations, ticket % patients with outcome = 28.6	Accidents, citations, ticket % patients with outcome = 19.7  Accidents, citations, ticket % patients with outcome = 19  Accidents, citations, ticket % patients with outcome = 21.5
<b>Sleep disturbance</b>						
Barragan, 2014 <sup>27</sup> 90 Poor RCT  b	Any subtype DSM-IV-TR 6-12 years 67.0% Male	MPH (maximum 1 mg/kg/day)	Omega-3/6 fatty acid supplementation (6 capsules/day)  MPH (maximum 1 mg/kg/day and omega-3/6 fatty acid supplementation (6 capsules/day)	1 year	Insomnia by the end of the study period % patients with outcome = 20	Insomnia by the end of the study period % patients with outcome = 0  Insomnia by the end of the study period % patients with outcome = 0
Gelade, 2016 <sup>26</sup> 112 Good RCT  b	Combined Type DSM-IV-TR 9.63 years (SD1.76) 76% Male	Neurofeedback training	MPH	12 weeks	SDSC Mean = -2.16 (95% CI: -4.82, 0.51)	SDSC Mean = -0.54 (95% CI: -2.90, 1.81)
Li, 2011 <sup>28</sup> 72 Good RCT  b	NR DSM-IV 6-13 years 65.3% Male	MPH 1 mg/kg/day	Ningdong granule (a traditional Chinese medicine preparation)	8 weeks	Trouble falling asleep # patients with outcome = 9 Hypersomnia # patients with outcome = 0	Trouble falling asleep # patients with outcome = 1 Hypersomnia # patients with outcome = 6
Salehi, 2010 <sup>29</sup> 50 Good RCT  b	Combined Type DSM-IV-TR 6-14 years 78% Male	MPH (up to 30 mg/day)	Ginkgo biloba	6 weeks	Insomnia # patients with outcome = 3	Insomnia # patients with outcome = 12



Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Type of ADHD Diagnosis Criteria Age range in years % Male	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison
<b>Weight decrease</b>						
Salehi, 2010 <sup>29</sup> 50 Good RCT  b	Combined Type DSM-IV-TR 6-14 years 78% Male	MPH (up to 30 mg/day)	Ginkgo biloba	6 weeks	Weight loss # patients with outcome = 3	Weight loss # patients with outcome = 8

<sup>a</sup> See Methods section “Quality Assessment of Individual Studies” for definitions of quality assessment ratings.

<sup>b</sup> Age categories: a = children aged ≤6 years, b = children aged 7-17, c = children of all ages ≤17.

Abbreviations: CDI=Children’s Depression Inventory; DSM=Diagnostic and Statistical Manual of Mental Disorders; MASC=Multidimensional Anxiety Scale for Children; MPH=methylphenidate; WIAT=Wechsler Individual Achievement Test

**Table H-6. Summary of adverse effects**

Adverse Effect	Findings
<i>Physical</i>	
Weight loss <sup>29</sup>	12.0% (n=3) receiving ginkgo biloba and 32.0% (n=8) receiving MPH
<i>Gastrointestinal</i>	
Nausea <sup>27,28</sup>	5.6% (n=2) receiving NDG and 44.4% (n=16) receiving MPH 20%(n=6) receiving MPH alone
Dyspepsia <sup>27</sup>	40% (n=9) receiving omega-3/6 alone after 1 month of treatment
Stomach pain <sup>28,29</sup>	5.6% (n=2) receiving NDG and 33.3% (n=12) receiving MPH 12.0% (n=3) receiving ginkgo biloba and 20.0% (n=5) receiving MPH
<i>Sleep</i>	
Insomnia <sup>27,29</sup>	20% (n=6) receiving MPH alone 12.0% (n=3) receiving ginkgo biloba and 48.0% (n=12) receiving MPH
Hypersomnia <sup>28</sup>	16.7% (n=5) receiving NDG and 0 receiving MPH
Trouble falling asleep <sup>28</sup>	2.8% (n=1) receiving NDG and 13.9% (n=5) receiving MPH
<i>Appetite</i>	
Suppression <sup>27</sup>	70% (n=21) receiving MPH alone, 6.7% (n=2) receiving omega-3/6 alone, and 33.3% (n=10) receiving combined
Decreased <sup>28,29</sup>	2.8% (n=1) receiving NDG and 36.1% (n=13) receiving MPH 20.0% (n=5) receiving ginkgo biloba and 76.0% (n=19) receiving MPH
Increased <sup>28</sup>	13.9% (n=5) receiving NDG and 11.1% (n=4) receiving MPH

Abbreviations: MPH=methylphenidate, NDG=ningdong granule

**Table H-7. Findings on neurofeedback interventions for ADHD**

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
<b>Acceptability of treatment</b>						
Gevensleben, 2009 <sup>33</sup> (Gevensleben, 2010 <sup>34</sup> Wangler, 2011 <sup>35</sup> ) 102 Good RCT  b	Neuro-feedback training	Attention skills training	2 months	Effectiveness of treatment Mean = 3.19 (SD = .82)	Effectiveness of treatment Mean = 3.13 (SD = .90)	p=.77
				Parent rated motivation of their children to participate in treatment Mean = .64 (SD = .77)	Parent rated motivation of their children to participate in treatment Mean = .56 (SD = 1.13)	p = .71
<b>Behavior changes</b>						
Gelade, 2016 <sup>26</sup> 103 Good RCT  b	Neuro-feedback training	Physical activity	12 weeks	SWAN-Inattention (parent) Mean = -0.32 (95% CI: -0.53, -0.10)	SWAN-Inattention (parent) Mean = -0.17 (95%CI: -0.37, 0.02)	NS
				SWAN-Hyperactivity/Impulsiveness (parent) Mean = -0.29 (95% CI: -0.50, -0.07)	SWAN-Hyperactivity/Impulsiveness (parent) Mean = -0.21 (95% CI: -0.41, -0.01)	NS
				SWAN-Inattention (teacher) Mean = -0.10 (95% CI: -0.31, -0.11)	SWAN-Inattention (teacher) Mean = -0.05 (95% CI: -0.23, -0.12)	NS
				SWAN-Hyperactivity/Impulsiveness (teacher) Mean = -0.03 (95% CI: -0.28, 0.23)	SWAN-Hyperactivity/Impulsiveness (teacher) Mean = -0.02 (95% CI: -0.18, 0.13)	NS

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
<b>Changes in standardized symptom scores</b>						
Bink, 2015 <sup>36</sup> 90 Good RCT  b	Neuro-feedback plus treatment as usual	Treatment as usual	0 months baseline          6 months	ADHD-RS Inattention Mean=4.4 (SD=2.49)  ADHD-RS Hyperactivity/inattention Mean=3.44 (SD=2.12)  Youth Self Report Total score Mean=48.5 (SD=22.01)  CBCL Total score Mean=60.81 (SD=28.57)	ADHD-RS Inattention Mean=5.27 (SD=2.16)  ADHD-RS Hyperactivity/inattention Mean=3.27 (SD=2.01)  Youth Self Report Total score Mean=52.58 (SD=18.89)  CBCL Total score Mean=63.77 (SD=27)	NS
Gevensleben, 2009 <sup>33</sup> (Gevensleben, 2010 <sup>34</sup> Wangler, 2011 <sup>35</sup> ) 102 Good RCT  b	Neuro-feedback training	Attention skills training	2 months	German ADHD rating scale  Mean within group change = -.39 (SD = .37)	German ADHD rating scale  Mean within group change = -.1 (SD = .44)	p<.005

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
Moreno-Garcia, 2015 <sup>32</sup> 57 Fair RCT  b	Neuro-feedback	Standard Pharmacological Treatment  Behavioral Treatment	NR	Integrated Visual and Auditory Continuous Performance Test – Full Scale Attention  Mean = 2.1 (SD = 16.88)	Integrated Visual and Auditory Continuous Performance Test – Full Scale Attention  Mean = 28.57 (SD = 11.67)  Changes in standardized symptom scores  Integrated Visual and Auditory Continuous Performance Test – Full Scale Attention  Mean = 3.88 (SD = 16.24)	p = .002       p = .013
Steiner, 2014 <sup>37</sup> (Steiner, 2014 <sup>38</sup> ) 104 Good RCT  b	Neuro-feedback	Cognitive training    Control		Conner 3 Parent Inattention Within-group effect size = -0.8  Conners 3 Parent Executive Functioning Within-group effect size = -0.49  Conners 3 Parent Global Index Within-group effect size = -0.37  Conners 3 Teacher Inattention Within-group effect size = -0.25	Conner 3 Parent Inattention Within-group effect size = -0.46  Conners 3 Parent Executive Functioning Within-group effect size -0.12  Conners 3 Parent Global Index Within-group effect size = -0.09  Conners 3 Teacher Inattention Within-group effect size = -0.24  Conner 3 Parent Inattention Within-group effect size = -0.15  Conners 3 Parent Executive Functioning Within-group effect size = -0.09  Conners 3 Parent Global Index Within-group effect size = -0.05  Conners 3 Teacher Inattention Within-group effect size = 0	p<.05       p<.001  p<.001  p<.001
<b>Sleep disturbance</b>						
Gelade, 2016 <sup>26</sup> 103 Good RCT  b	Neuro-feedback training	Physical activity	12 weeks	SDSC Mean = -2.16 (95% CI: -4.82, 0.51)	SDSC Mean = -1.03 (95% CI: -2.86, 0.80)	NS

<sup>a</sup> See Methods section “Quality Assessment of Individual Studies” for definitions of quality assessment ratings.

<sup>b</sup> Age categories: a = children aged ≤6 years, b = children aged 7-17, c = children of all ages ≤17.

Abbreviations: ADHD=attention deficit hyperactivity disorder; CBCL=Child Behavior Checklist; RS=rating scale; SD=standard deviation

**Table H-8. Findings on cognitive training interventions for ADHD**

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
<b>Academic performance</b>						
Chacko, 2014 <sup>39</sup> 85 Good RCT  b	Cogmed working memory training with difficulty titrated to a user's ability	"Placebo" Cogmed working memory training with difficulty <u>not</u> titrated to a user's ability	3 weeks post	WRAT-4 – word reading  WRAT-4 Sentence completion  WRAT-4 Math computation  WRAT-4 Spelling		Treatment effect = -2.72 (SE = 5.5) p = .5  Treatment effect = 5.6 (SE = 4.7) p = .23  Treatment effect = 5.22 (SE = 5.21) p = .31  Treatment effect = 1.28 (SE = 6.17) p = .83
<b>Acceptability of treatment</b>						
Gevensleben,2 009 <sup>33</sup> (Gevensleben, 2010 <sup>34</sup> Wangler, 2011 <sup>35</sup> ) 102 Good RCT  b	Neurofeedback training	Attention skills training	2 months	Effectiveness of treatment Mean = 3.19 (SD = .82)  Parent-rated motivation of their children to participate in treatment Mean = .64 (SD = .77)	Effectiveness of treatment Mean = 3.13 (SD = .90)  Parent-rated motivation of their children to participate in treatment Mean = .56 (SD = 1.13)	P= .77  P= .71

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
<b>Behavior changes</b>						
Dovis, 2015 <sup>40</sup> 89 Good RCT  b	Braingame Brian (computerized, home-based executive functioning training)	Braingame Brian in training mode and the working memory task in placebo mode  All tasks in training mode (overall easier)	3 months	Parent DBDRS Inattention Mean=12.9 (SD=4.1)  P-DBDRS Hyperactivity/Impulsivity Mean = 12.6 (SD = 6.4)  Teacher DBDRS Inattention Mean = 12.2 (SD = 5.8)  Teacher DBDRS Hyperactivity/Impulsivity Mean = 9.3 (SD = 4.9)	Parent DBDRS Inattention Mean = 14.6 (SD = 5.3)  P-DBDRS Hyperactivity/Impulsivity Mean = 13 (SD = 5.1)  Teacher DBDRS Inattention Mean = 13.3 (SD = 6.6)  Teacher DBDRS Hyperactivity/Impulsivity Mean = 11.5 (SD = 7)  Parent DBDRS Inattention Mean = 14.1 (SD = 4.7)  P-DBDRS Hyperactivity/Impulsivity Mean = 12.5 (SD = 5.7)  Teacher DBDRS Inattention Mean = 11.3 (SD = 5.1)  Teacher DBDRS Hyperactivity/Impulsivity Mean = 6 (SD = 9.1)	NS  NS  NS  NS  NS  NS
<b>Changes in standardized symptom scores</b>						
Chacko, 2014 <sup>39</sup> 85 Good RCT  b	Cogmed working memory training with difficulty titrated to a user's ability	"Placebo" Cogmed working memory training with difficulty <u>not</u> titrated to a user's ability	3 weeks post	Parent Disruptive Behavior Disorder Rating Scale – Inattention symptoms  Parent Disruptive Behavior Disorder Rating Scale – Hyperactive symptoms  Teacher Disruptive Behavior Disorder Rating Scale – Inattention symptoms  Teacher Disruptive Behavior Disorder Rating Scale – Hyperactive		Treatment effect = 1.98 (SE = 1.17) p = .2  Treatment effect = 1.88 (SE = 1.15) p = .2  Treatment effect = 1.84 (SE = 1.49) p = .22  Treatment effect = 1.94 (SE = 1.54) p = .21

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
Egeland, 2013 <sup>41</sup> (Hovik, 2013 <sup>42</sup> ) 75 Good RCT  b	Cogmed RoboMemo program	Waitlist control	8 months	ADHD-RS Total Score Teacher Mean=20.1 (SD=9.8)  ADHD-RS Parent Mean=27 (SD=11.5)	ADHD-RS Total Score Teacher Mean=22.6 (SD=12.3)  ADHD-RS Parent Mean=28.1 (SD=11)	NS  NS
Gevensleben, 2009 <sup>33</sup> (Gevensleben, 2010 <sup>34</sup> Wangler, 2011 <sup>35</sup> ) 102 Good RCT  b	Neurofeedback Training	Attention skills training	1 month	German ADHD rating scale (FBB-HKS)  Mean w/in group change = -.39 (SD = .37)	German ADHD rating scale (FBB-HKS)  Mean w/in group change = -.1 (SD = .44)	P<.005
Steiner, 2014 <sup>37</sup> (Steiner, 2014 <sup>38</sup> ) 104 Good RCT  b	Neurofeedback	Cognitive training       Waitlist control	5 months	Conner 3 Parent Inattention Within-group effect size = -0.8  Conners 3 Parent Executive Functioning Within-group effect size = -0.49  Conners 3 Parent Global Index Within-group effect size = -0.37  Conners 3 Teacher Inattention Within-group effect size = -0.25	Conner 3 Parent Inattention Within-group effect size = -0.46  Conners 3 Parent Executive Functioning Within-group effect size -0.12  Conners 3 Parent Global Index Within-group effect size = -0.09  Conners 3 Teacher Inattention Within-group effect size = 0.24  Conner 3 Parent Inattention Within-group effect size = -0.15  Conners 3 Parent Executive Functioning Within-group effect size = -0.09  Conners 3 Parent Global Index Within-group effect size = -0.05  Conners 3 Teacher Inattention Within-group effect size =0	p<.05  NS  p<.05  p<.05  p<.001  p<.001  p<.001  NS

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
van Dongen-Boomsma, 2014 <sup>43</sup> 51 Good RCT  c	Cogmed training program	Cogmed training program without adjustment for patient skill level (control group)	5 weeks	ADHD-RS Total Investigator Score Mean=32.4 (SE=5.7)  ADHD-RS Teacher Mean=27.5 (SE=10.1)	ADHD-RS Total Investigator Score Mean=30.3 (SE=7.4)  ADHD-RS Teacher Mean=25.5 (SE=7.7)	NS  NS



Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
Beck, 2010 <sup>44</sup> 52 Fair Observational  b	Computer-based working memory intervention	Waitlist control	Baseline/ 4-month follow-up	ADHD Index Parent Mean = 71.7 (SD = 8.82) / Mean = 62.78 (SD = 9.35)  Conners Cognitive Problems/Inattention Parent Mean = 67.96 (SD = 9.55) / Mean = 59.89 (SD = 9.15)  Conners Hyperactivity Parent Mean = 68.37 (SD = 15.98) / Mean = 59.59 (SD = 14.89)  Conners Oppositional Parent Mean = 60 (SD = 13.34) / Mean = 53.96 (SD = 9.67)  Conners ADHD Index Teacher # patients with outcome = 60.78 (SD = 14.96) / # patients with outcome = 56.38 (SD = 13.28)  Conners Cognitive Problems/Inattention Teacher Mean = 60.89 (SD = 10.58) / Mean = 57.5 (SD = 7.91)  Conners Hyperactivity Teacher Mean = 59.59 (SD = 15.17) / Mean = 56.31 (SD = 13.47)  Conners Oppositional Teacher Mean = 56.52 (SD = 8.93) / Mean = 52.35 (SD = 10.12)  BRIEF Metacognition Index Parent Mean = 72.96 (SD = 8.06) / Mean = 64.19 (SD = 9.24)  BRIEF Metacognition Index Teacher Mean = 67.96 (SD = 18.67) / Mean = 64.85 (SD = 16.35)	ADHD Index Parent Mean = 69.92 (SD = 7.86) / Mean = 67.33 (SD = 7.33)  Conners Cognitive Problems/Inattention Parent Mean = 65.38 (SD = 9.22) / Mean = 64.75 (SD = 10.22)  Conners Hyperactivity Parent Mean = 65.7 (SD = 16.5) / Mean = 62.75 (SD = 13.73)  Conners Oppositional Parent Mean = 59.79 (SD = 12.17) / Mean = 57.5 (SD = 10.59)  Conners ADHD Index Teacher # patients with outcome = 58.4 (SD = 11.4) / # patients with outcome = 56.52 (SD = 10.25)  Conners Cognitive Problems/Inattention Teacher Mean = 56.24 (SD = 11.05) / Mean = 55.56 (SD = 10.26)  Conners Hyperactivity Teacher Mean = 55.36 (SD = 13.2) / Mean = 55.64 (SD = 11.14)  Conners Oppositional Teacher Mean = 52.92 (SD = 8.93) / Mean = 50.58 (SD = 8.71)  BRIEF Metacognition Index Parent Mean = 71.38 (SD = 7.73) / Mean = 69.61 (SD = 7.19)  BRIEF Metacognition Index Teacher Mean = 60.2 (SD = 13.04) / Mean = 60.79 (SD = 12.76)	p=.01  p<.01  p=.04  p=.10  p=.43  p=.23  p=.25  p=.59  p=.01  p=.22

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
Van der Donk, 2015 <sup>45</sup> 105 Fair RCT  b	Cogmed Working Memory Training	Paying Attention in Class (experimental, combined working memory and compensatory training)	6 weeks  6 months	CBCL Attention Problems Scale  CBCL Externalizing Problems Scale	CBCL Attention Problems Scale  CBCL Externalizing Problems Scale	NR  NR
<b>Functional impairment</b>						
van Dongen-Boomsma, 2014 <sup>43</sup> 51 Good RCT  c	Cogmed training program	Cogmed training program without adjustment for patient skill level (control group)	5 weeks	CGI-I # patients w/ outcome = 25	CGI-I # patients w/ outcome = 21	P=0.514

<sup>a</sup> See Methods section “Quality Assessment of Individual Studies” for definitions of quality assessment ratings.

<sup>b</sup> Age categories: a = children aged ≤6 years, b = children aged 7-17, c = children of all ages ≤17.

Abbreviations: ADHD=attention deficit hyperactivity disorder; BRIEF=Behavior Rating Inventory of Executive Function; CBCL= Child Behavior Checklist; DBDRS=Disruptive Behavior Disorder Rating Scale; SNAP=Swanson, Nolan and Pelham Revision

**Table H-9. Findings on cognitive behavioral therapy interventions for ADHD**

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
<b>Changes in standardized symptom scores</b>						
Vidal, 2015 <sup>46</sup> 119 Good RCT  b	CBT	Usual care	12 weeks	ADHD-RS Adolescent Inattention Mean 10.14 (0.51)  ADHD-RS Adolescent Impulsivity Mean 8.29 (0.7)  ADHD-RS Parents Inattention 11.31 (0.58)  ADHD RS Parents Impulsivity Mean 7.72 (0.77)	ADHD-RS Adolescent Inattention Mean 14.47 (0.5)  ADHD-RS Adolescent Impulsivity Mean 11.72 (0.7)  ADHD-RS Parents Inattention Mean 16.99 (0.6)  ADHD RS Parents Impulsivity Mean 11.56 (0.78)	ES=8.57 (p<.001)  ES=4.9 (p<.001)  ES=9.62 (p<.001)  ES=4.95 (p<.001)

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
Boyer, 2015 <sup>47</sup> (Boyer, 2015 <sup>48</sup> ) 159 Fair RCT  b	CBT with an aim to improve planning skills	Solution-focused CBT without an aim to improve planning skills	3 months	ADHD symptom scale – combined inattentive and Hyperactivity/Impulsivity Mean = 18.66 (9.64)  Disruptive Behavior Disorders – summarized ODD/CD subscales Mean = 5.84 (5.49)	ADHD symptom scale – combined inattentive and Hyperactivity/Impulsivity Mean = 19.99 (9.69)  Disruptive Behavior Disorders – summarized ODD/CD subscales Mean = 5.99 (5.78)	
			12 months	ADHD symptom scale – combined inattentive and Hyperactivity/Impulsivity Mean = 18.41 (9.76)  Disruptive Behavior Disorders – summarized ODD/CD subscales Mean = 4.74 (4.30)	ADHD symptom scale – combined inattentive and Hyperactivity/Impulsivity Mean = 20.02 (8.21)  Disruptive Behavior Disorders – summarized ODD/CD subscales Mean = 4.55 (3.80)	p < .001  p < .001
<b>Depression or anxiety</b>						
Boyer, 2015 <sup>47</sup> (Boyer, 2015 <sup>48</sup> ) 159 Fair RCT  b	CBT with an aim to improve planning skills	Solution-focused CBT without an aim to improve planning skills	3 months	Child Depression Inventory Mean = 8.92 (6.82)  Screen for Child Anxiety Related Emotional Disorders Mean = 20.49 (16.17)	Child Depression Inventory Mean = 9.21 (5.57)  Screen for Child Anxiety Related Emotional Disorders Mean = 19.54 (18.17)	
			12 months	Child Depression Inventory Mean = 7.68 (5.10)  Screen for Child Anxiety Related Emotional Disorders Mean = 18.86 (14.39)	Child Depression Inventory Mean = 8.48 (4.65)  Screen for Child Anxiety Related Emotional Disorders Mean = 18.53 (16.17)	p < .001  p < .001
<b>Functional impairment</b>						
Vidal, 2015 <sup>46</sup> 119 Good RCT  b	CBT	Usual care	12 weeks	CGI-S Self Report Mean 2.9 (0.12)  CGI-S Clinician 2.86 (0.07)	CGI-S Self Report Mean 3.35 (0.12)  CGI-S Clinician 3.4 (0.07)	ES=3.75 (p<.001)  ES=7.71 (p<.001)

<sup>a</sup> See Methods section “Quality Assessment of Individual Studies” for definitions of quality assessment ratings.

<sup>b</sup> Age categories: a = children aged ≤6 years, b = children aged 7-17, c = children of all ages ≤17.

Abbreviation: CBT=cognitive behavioral therapy; CGI-S=Clinical Global Impression-Severity; ODD/CD=Oppositional defiant disorder/conduct disorder

**Table H-10. Findings on child or parent training or behavioral interventions for ADHD**

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
<b>Academic performance</b>						
Abikoff, 2013 <sup>49</sup> 180 Good RCT  b	Organizational skills	Performance-based intervention precluding skill  Waitlist	12 weeks	Academic Performance Rating Scale Mean=pre: 53.45; post: 62.16 (SD=pre: 10.34; post: 10.52)  Academic Proficiency Scale Mean=pre: 16.39; post: 18.55 (SD=pre: 4.27; post: 4.26)	Academic Performance Rating Scale Mean=pre: 54.45; post: 63.96 (SD=pre: 11.12; post: 11.90)  Academic Proficiency Scale Mean=pre: 17.08; post: 18.35 (SD=pre: 3.54; post: 3.89)  Academic Performance Rating Scale Mean=pre: 54.06 ; post: 54.53 (SD=pre: 8.58; post: 9.74)  Academic Proficiency Scale Mean=pre: 16.05 ; post: 16.63 (SD= pre: 3.22; post: 3.30)	NS     NS
Storebo, 2012 <sup>50</sup> 56 Good RCT  b	Social skills group + medication management	Medication management (usual care)	3 months  6 months	Conners CBRS Academic Score Mean=20.13 (SD=15.15)  Conners CBRS Academic Score Mean=21.04 (SD= 11.98); Between group MD: -0.48 (95% CI=-7.254 to 6.293)	Conners CBRS Academic Score Mean=17.88 (SD=10.11)  Conners CBRS Academic Score Mean=21.52 (SD 12.56)	NS  NS
<b>Acceptability of treatment</b>						
Chacko, 2009 <sup>51</sup> 120 Good RCT  c	<b>STEPP</b>	BPT program  Waitlist	2.07 months	Parent Treatment Attitude Inventory- Satisfaction with Process Mean = 16.36 (SD = 2.03)	Parent Treatment Attitude Inventory- Satisfaction with Process Mean = 14.12 (SD = 2.09)	P<0.01
<b>Changes in standardized symptom scores</b>						
Bai, 2015 <sup>52</sup> 89 Good RCT  b	A psycho-education program based on the theory of planned behavior	General clinical counseling	3 months	ADHD-RS-IV Mean=33.7 (SD=5.4) (Baseline mean=49.9, SD 11.5)	ADHD-RS-IV Mean=45.1 (SD=7.9) (Baseline mean=48.1, SD 8.1)	P=.008

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
Chacko, 2009 <sup>51</sup> 120 Good RCT  c	STEPP	BPT program	2.07 months	Disruptive Behavior Disorder scale-Inattentive Mean = 1.78 (SD = .63)	Disruptive Behavior Disorder scale-Inattentive Mean = 1.67 (SD = .74)	NR
				Disruptive Behavior Disorder-Hyperactive/Impulsive: Mean = 1.69 (SD = .57)	Disruptive Behavior Disorder-Hyperactive/Impulsive: Mean = 1.59 (SD = .70)	NR
		Waitlist	Treatment Attitude Inventory- Satisfaction with Outcome Mean = 24.18 (SD = 3.02)	Treatment Attitude Inventory- Satisfaction with Outcome Mean = 20.20 (SD = 2.35)	NR	
			Disruptive Behavior Disorder scale-Inattentive Mean = 1.72 (SD = .65)	Disruptive Behavior Disorder-Hyperactive/Impulsive: Mean = 1.72 (SD = .56)	NR	
Ferrin, 2014 <sup>53</sup> 81 Good RCT  c	Psycho-educational program	Control	12 weeks	CPRS inattention -12 weeks Mean = 7.95 (SD = 3.84) p = .001	CPRS inattention -12 weeks Mean = 11 (SD = 3.28)	P=0.001
			12 months	CPRS hyperactivity/impulsivity -12 weeks Mean = 6.74 (SD = 4.84)	CPRS hyperactivity/impulsivity -12 weeks Mean = 8.45 (SD = 4)	NS
				Conners parent rating scale – index Mean = 18.6 (SD = 8.66)	Conners parent rating scale – index Mean = 21.16 (SD = 7.08)	NS
				Conners parent rating scale – opposition subscale Mean = 5.2 (SD = 4.06)	Conners parent rating scale – opposition subscale Mean = 5.63 (SD = 3.86)	NS
				Conners parent rating scale- inattention/cognition Mean = 8.26 (SD = 4.3) p = .032	Conners parent rating scale- inattention/cognition Mean = 10.41 (SD = 3.62)	P=0.0032
				Conners parent rating scale – hyperactivity/impulsivity Mean = 7.4 (SD = 4.84)	Conners parent rating scale – hyperactivity/impulsivity Mean = 8.47 (SD = 3.82)	NS
				CPRS index -12 weeks Mean = 16.8 (SD = 7.18) p = .001	CPRS index -12 weeks Mean = 22.44 (SD = 6.13)	P=0.001
			CPRS opposition -12 weeks Mean = 4.95 (SD = 3.79)	CPRS opposition -12 weeks Mean = 6.18 (SD = 3.87)	NS	

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
Hiscock, 2015 <sup>54</sup> (Papadopoulos, 2015 <sup>55</sup> ) 244 Good RCT  c	Sleep hygiene practices and standardized behavioral strategies	Children in the control group received usual clinical care	6 Months	ADHD rating scale IV-total symptoms (parent report) Mean = 28.4 (SD = 10.8)	ADHD rating scale IV-total symptoms (parent report) Mean = 33.8 (SD = 9.5)	P=0.004
				ADHD Rating Scale IV – Parent Report (Inattentive) Mean = 15.1 (SD = 6.0)	ADHD Rating Scale IV – Parent Report (Inattentive) Mean = 18.2 (SD = 4.8)	P=0.001
				ADHD Rating Scale IV – Parent Report (Hyperactivity/Impulsivity) Mean = 13.3 (SD = 6.0)	ADHD Rating Scale IV – Parent Report (Hyperactivity/Impulsivity) Mean = 15.6 (SD = 5.8)	P=0.04
				ADHD rating scale IV Total Score (Teacher Report) Mean = 20.6 (SD = 11.6)	ADHD rating scale IV Total Score (Teacher Report) Mean = 25.1 (SD = 12.6)	P=0.31
				ADHD Rating Scale IV: Teacher Report (Inattentive) Mean = 14.1 (SD = 6.9)	ADHD Rating Scale IV: Teacher Report (Inattentive) Mean = 12.3 (SD = 6.9)	P=0.59
				ADHD Rating Scale IV: Teachers Report (Hyperactivity/Impulsivity) Mean = 8.4 (SD = 6.2)	ADHD Rating Scale IV: Teachers Report (Hyperactivity/Impulsivity) Mean = 10.9 (SD = 7.1)	P=0.19
Ostberg, 2012 <sup>56</sup> 92 Good RCT  b	Barkley based Parent + Teacher behavioral intervention	Waitlist	10 weeks	ADHD-C Parent Mean = 9.1 (SD = 4.5)	ADHD-C Parent Mean = 9.8 (SD = 6)	NS
				ADHD-C Teacher Mean = 7.7 (SD = 6.3)	ADHD-C Teacher Mean = 9.4 (SD = 6.3)	NS
			3 months	ADHD-C Parent Mean = 7.7 (SD = 4.7)	ADHD-C Parent Mean = 10.1 (SD = 5.3)	P<.05
				ADHD-C Teacher Mean = 7.7 (SD = 5.7)	ADHD-C Teacher Mean = 9.4 (SD = 5.4)	NS

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
Piffner, 2014 <sup>57</sup> 199 Good RCT  b	Child Life and Attention Skills Treatment	Parent group component only   Evaluation and community care  Parent group component only  Evaluation and community care	10-13 weeks   5-7 months	Parent Child Symptom Inventory Mean=2.2 (SE=0.3)  Child Symptom Inventory Mean=2.99 (SE=0.3)   Parent Child symptom inventory Mean=2.2 (SE=0.3)  Child symptom inventory Mean=3.7 (SE=0.4)	Parent Child Symptom Inventory Mean=3.2 (SE=0.3)  Child Symptom Inventory Mean=4.2 (SE=0.3)  Parent Child Symptom Inventory Mean=4.1 (SE=0.4)  Child Symptom Inventory Mean=5 (SE=0.4)  Parent Child Symptom Inventory Mean=3.2 (SE=0.3)  Child Symptom Inventory Mean=4.2 (SE=0.4) Parent Child Symptom Inventory Mean=4.1 (SE=0.4)  Child Symptom Inventory Mean=4.2 (SE=0.4)  Parent Child Symptom Inventory Mean=4.1 (SE=0.4)  Child Symptom Inventory Mean=4.2 (SE=0.4)	P=.001  P<0.001  NR  NR  NR  NR  P<0.001  P=0.396  NR
Ercan, 2014 <sup>58</sup> 120 Fair Observational  b	MPH+11 months of parent training	MPH (Usual care)	12 months	CPRS Mean w/in group change = 7.91 (SD = 6.9)  CTRS–teacher Mean = 29.69 (SD = 15.03)	CPRS Mean w/in group change = 10.07 (SD = 5.74)  CTRS–teacher Mean = 35.27 (SD = 13.47)	NS

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
Huang, 2015 <sup>59</sup> 97 Fair RCT  b	Behavioral-based social skill training for patients and parallel parent group sessions	Group therapy for motivation and treatment per usual care, such as medication and counseling at the outpatient department	6 months	<p>Change in Child Behavioral Checklist Withdrawn Subscale Mean= -.84 (SD=2.3)</p> <p>Change in CBCL Somatic Complaints Subscale Mean within group change= -.14 (SD=2.7)</p> <p>CBCL Change Anxious/Depressed Subscale Mean within group change= -2.19 (SD=4)</p> <p>CBCL Change Social Problems Subscale Mean within group change= -1.4 (SD=2.3)</p> <p>CBCL Change Thought Problems Subscale Mean within group change= -1.02 (SD=2.8)</p> <p>CBCL Change Attention Problems Subscale Mean within group change= -1.26 (SD=2.8)</p> <p>CBCL Change Delinquent Behavior Subscale Mean within group change= -.76 (SD=2.2)</p> <p>CBCL Change Aggressive Behavior Subscale Mean within group change= -4 (SD=7.1)</p>	<p>Change in Child Behavioral Checklist Withdrawn Subscale Mean= -.28 (SD=1.6)</p> <p>Change in CBCL Somatic Complaints Subscale Mean within group change= -1.42 (SD=3.7)</p> <p>CBCL Change Anxious/Depressed Subscale Mean within group change= -.89 (SD=3.7)</p> <p>CBCL Change Social Problems Subscale Mean within group change= -.92 (SD=2.2)</p> <p>CBCL Change Thought Problems Subscale Mean within group change= -1.06 (SD=2.1)</p> <p>CBCL Change Attention Problems Subscale Mean within group change= -1.772 (SD=3.2)</p> <p>CBCL Change Delinquent Behavior Subscale Mean within group change= -.6 (SD=1.9)</p> <p>CBCL Change Aggressive Behavior Subscale Mean within group change= -2.37 (SD=5.9)</p>	<p>P=0.84</p> <p>P=0.14</p> <p>P=0.79</p> <p>P=0.57</p> <p>P=0.60</p> <p>P=0.04</p> <p>P=0.91</p> <p>P=0.94</p>
<b>Depression or anxiety</b>						
Hiscock, 2015 <sup>54</sup> (Papadopoulos, 2015 <sup>55</sup> ) 244 Good RCT  c	Sleep hygiene practices and standardized behavioral strategies	Children in the control group received usual clinical care	6 Months	<p>Depression or anxiety-Depression Anxiety Stress Scale Mean = 31.3 (SD = 23.6)</p> <p>Depression or anxiety-Parent mental health with the Depression Anxiety Stress Scale – Total score</p>	Depression or anxiety-Depression Anxiety Stress Scale Mean = 33.9 (SD = 28.5)	P=0.55
<b>Functional impairment</b>						
Chacko, 2009 <sup>51</sup> 120 Good RCT  c	STEPP	BPT program  Waitlist	2.07 months	Impairment Rating Scale (IRS)-Overall Mean = 3.31 (SD 1.41)	<p>Impairment Rating Scale (IRS)-Overall Mean = 4.11 (SD 1.67)</p> <p>Impairment Rating Scale (IRS)- Overall Mean = 4.65 (SD 1.30)</p>	<p>P&lt;.01</p> <p>NR</p>



Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value	
Piffner, 2014 <sup>57</sup> 199 Good RCT  b	Child Life and Attention Skills Treatment	Parent group component only	10-13 weeks	Parent CGI Mean=6 (SE=0.7)  Teacher CGI Severity Mean=5.8 (SE=0.8)	Parent CGI Mean=5.8 (SE=0.9)  Teacher CGI Severity Mean=5.2 (SE=1)	P=0.0  P=0.0	
		Evaluation and community care			Parent CGI Mean=5 (SE=1)  Teacher CGI Severity Mean=5 (SE=1.1)	NR  NR	
			5-7 months	Parent CGI Mean=6 (SE=1)  Teacher CGI-Severity Mean=3.4 (SE=0.2)	Parent CGI Mean=5.8 (SE=1)  Teacher CGI-Severity Mean=3.5 (SE=0.2)	P=0.001  P=0.775	
		Parent group component only			Parent CGI Mean=5.3 (SE=0.23)  Teacher CGI Severity Mean=3.6 (SE=0.2)	NR  NR	
		Evaluation and community care					
<b>Sleep disturbance</b>							
Hiscock, 2015 <sup>54</sup> (Papadopoulos, 2015 <sup>55</sup> ) 244 Good RCT  c	Sleep hygiene practices and standardized behavioral strategies	Children in the control group received usual clinical care	6 Months	Sleep disturbance-Child Sleep Habits Questionnaire (CSHQ) Total Score Mean 53.2 (7.5)	Sleep disturbance-Child Sleep Habits Questionnaire (CSHQ) Total Score, Mean = 55.9 (8.8)	P<0.001	

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
<b>Workforce participation</b>						
Hiscock, 2015 <sup>54</sup> (Papadopoulos, 2015 <sup>55</sup> ) 244 Good RCT  c	Sleep hygiene practices and standardized behavioral strategies	Children in the control group received usual clinical care	3 months	Workforce participation-Days late for work  Workforce participation-Missed days of work		P=0.02  P=0.03 (both non-parametric tests)

<sup>a</sup> See Methods section “Quality Assessment of Individual Studies” for definitions of quality assessment ratings.

<sup>b</sup> Age categories: a = children aged ≤6 years, b = children aged 7-17, c = children of all ages ≤17.

Abbreviations: ADHD=attention deficit hyperactivity disorder; BPT=Behavioral Parent training; CBCL=Child Behavior Checklist; CBRS=Comprehensive Behavior Rating Scale; CGI=Clinician Global Impressions; DASS=Depression Anxiety Stress Scale; NR=not reported; STEPP=Strategies to Enhance Positive Parenting; RCT=randomized controlled trial

**Table H-11. Findings on omega-3 fatty acid supplementation for ADHD**

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
<b>Behavior changes</b>						
Manor, 2012 <sup>60</sup> (Manor, 2013 <sup>61</sup> ) 200 Good RCT  b	Phosphatidylserine enriched with omega-3 fatty acids	Placebo	15 weeks	Euphoric % patients with outcome = 38.9  Anxiety % patients with outcome = 45  Irritable % patients with outcome = 79.1  Prone Cry % patients with outcome = 62.7  Talk Less % patients with outcome = 31.8  Sad/Unhappy % patients with outcome = 40  Irritability % patients with outcome = 15.31	Euphoric % patients with outcome = 34.6  Anxiety % patients with outcome = 63.5  Irritable % patients with outcome = 84.6  Prone Cry % patients with outcome = 57.7  Talk Less % patients with outcome = 32.7  Sad/Unhappy % patients with outcome = 34  Irritability % patients with outcome = 11.63	NR  NR  NR  NR  NR  NR
<b>Changes in standardized symptom scores</b>						
Anand, 2016 <sup>62</sup> 50 Good RCT  c	Polyunsaturated fatty acids (300 mg/d) plus atomoxetine (0.5 mg/kg/d)	Atomoxetine (0.5 mg/kg/d)	4 months	Conners Parent Rating Scale-Revised: Short Form Mean = 36.6 (SD = 2.21)	Conners Parent Rating Scale-Revised: Short Form Mean = 37.4 (SD = 2.18)	NS
Gustafsson, 2010 <sup>63</sup> 109 Good RCT  b	Omega-3 fatty acid supplementation (eicosapentaenoic acid 500mg daily)	Placebo	15 weeks	Total Conners Parent Rating Scale score Mean = 43.8 (SD = 18.6)  Total Conners Rating Scale score Mean = 43.1 (SD = 18.8)	Total Conners Parent Rating Scale score Mean = 39.4 (SD = 18.4)  Total Conners Rating Scale score Mean = 40.7 (SD = 17.9)	NS  NS

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
Johnson, 2009 <sup>54</sup> (Johnson, 2012 <sup>55</sup> ) 75 Good RCT  b	Omega-3/6 fatty acid supplementation (792mg daily)	Placebo	3 months (double-blind phase) 6 months (open-label extension: continuous and naïve groups)	ADHD Rating Scale Mean change = -3.78 (7.14)  ADHD Rating Scale Mean change = -7.82 (8.07)	ADHD Rating Scale Mean change = -1.65 (4.54)  ADHD Rating Scale Mean change = -5.81 (7.16)	NS  NS
Manor, 2012 <sup>60</sup> (Manor, 2013 <sup>61</sup> ) 200 Good RCT  b	Phosphatidylserine enriched with omega-3 fatty acids	Placebo	15 weeks (treatment and placebo groups, N=162)  30 weeks (open-label extension: continuous and naïve groups, N=147)	CRS-P PS-Omega-3 continuous (30 weeks) ADHD Index Mean = 64.05 (10.21)  CRS-T PS-Omega-3 continuous (30 weeks) ADHD Index Mean = 62.35 (10.64)  CRS-P PS-Omega-3 continuous (30 weeks) ADHD Index Mean Change = -0.95 (7.91)  CRS-T PS-Omega-3 continuous (30 weeks) ADHD Index Mean Change = 0 (8.62)	CRS-P Placebo (weeks 1-15) ADHD Index Mean = 65.67 (12.79)  CRS-T Placebo (weeks 1-15) ADHD Index Mean = 64.44 (10.07)  CRS-P PS-Omega-3 (weeks 15-30) ADHD Index Mean Change = -2.86 (8.51)  CRS-T PS-Omega-3 (weeks 15-30) ADHD Index Mean Change = -1.72 (6.19)	NS  NS  NS
Milte, 2012 <sup>66</sup> (Milte, 2015 <sup>67</sup> ) 90 Good RCT  b	Fish oil rich in the omega-3 fatty acid, eicosapentaenoic acid (EPA)	Fish oil rich in the omega-3 fatty acid, docosahexaenoic acid (DHA)  Placebo: Linoleic acid (LA)	4 months	Conners Parent Rating Scale ADHD total Mean between-group change (vs. placebo) = 1.56 (1.77)	Conners Parent Rating Scale ADHD total Mean between-group change (vs. placebo) = 1.64 (1.9)	NR  EPA vs. placebo p=0.38  DHA vs. placebo p=0.39
Raz, 2009 <sup>68</sup> 78 Fair RCT  b	Omega-3 fatty acid supplementation	Placebo	1.75 months	Conners-ADHD (Teacher) Mean = 3.64 (1.48)  Conners Mood (Teacher) Mean = 2.76 (1.28)  Conners Mood (Parent) Mean = 3.44 (1.42)	Conners-ADHD (Teacher) Mean = 3.66 (1.12)  Conners Mood (Teacher) Mean = 2.74 (1.30)  Conners Mood (Parent) Mean = 4.03 (1.25)	NS  NS  NS

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
Widenhorn-Muller, 2014 <sup>69</sup> 110 Fair RCT b	Omega-3 fatty acid supplementation (720 mg daily) plus 15 mg vitamin E	Placebo	4	CBCL total problems Mean = 62.36 (SE = 1.47)  Teacher Report Form--total problems Mean = 55.8 (SE = 1.09)	CBCL total problems Mean = 60.15 (SE = 1.38)  Teacher Report Form--total problems Mean = 56.82 (SE = 1.16)	P=0.98  P=0.62
Hariri, 2012 <sup>70</sup> 120 Poor RCT b	Omega-3 fatty acid supplementation (900 mg daily)	Placebo	8 weeks	Conners Abbreviated Mean = 21.03 (3.98)	Conners Abbreviated Mean = 24.02 (4.22)	P=0.251
<b>Elevated blood pressure</b>						
Manor, 2012 <sup>60</sup> (Manor, 2013 <sup>61</sup> ) 200 Good RCT b	Phosphatidylserine enriched with omega-3 fatty acids	Placebo	15 weeks	Systolic Mean = 103.6 (SD = 14.82)  Diastolic Mean = 64.66 (SD = 11.39)	Systolic Mean = 100.25 (SD = 12.95)  Diastolic Mean = 63.89 (SD = 10.28)	P=0.955  P=0.342
<b>Functional impairment</b>						
Johnson, 2009 <sup>64</sup> (Johnson, 2012 <sup>65</sup> ) 75 Good RCT b	Omega-3/6 fatty acid supplementation (792 mg daily)	Placebo	3 months (double-blind phase)  6 months (open-label extension: continuous and naïve groups)	Clinical Global Impression score Mean change = -0.58 (0.87)  Clinical Global Impression score Mean change = -1.24 (1.07)	Clinical Global Impression score Mean change = -0.13 (0.50)  Clinical Global Impression score Mean change = -0.93 (0.92)	NS  NS
<b>Sleep disturbance</b>						
Manor, 2012 <sup>60</sup> (Manor, 2013 <sup>61</sup> ) 200 Good RCT b	Phosphatidylserine enriched with omega-3 fatty acids	Placebo	15 weeks	Insomnia % patients with outcome = 38.2  Severe insomnia % patients with outcome = 2.04  Nightmares % patients with outcome = 29.1	Insomnia % patients with outcome = 53.9  Severe insomnia % patients with outcome = 6.98  Nightmares % patients with outcome = 34.6	NR  NR  NR

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
<b>Tics or other movement disorders</b>						
Manor, 2012 <sup>60</sup> (Manor, 2013 <sup>61</sup> ) 200 Good RCT  b	Phosphatidylserine enriched with omega-3 fatty acids	Placebo	15 weeks	Tics % patients with outcome = 22.7	Tics % patients with outcome = 32.7	NR
<b>Gastrointestinal symptoms</b>						
Manor, 2012 <sup>60</sup> (Manor, 2013 <sup>61</sup> ) 200 Good RCT  b	Phosphatidylserine enriched with omega-3 fatty acids	Placebo	15 weeks	Stomachaches % patients with outcome = 39.5  Decreased appetite % patients with outcome = 32.7  Severely decreased appetite % patients with outcome = 4.08	Stomachaches % patients with outcome = 46.2  Decreased appetite % patients with outcome = 32.7  Severely decreased appetite % patients with outcome = 4.65	NR  NR  NR
<b>Growth suppression</b>						
Manor, 2012 <sup>60</sup> (Manor, 2013 <sup>61</sup> ) 200 Good RCT  b	Phosphatidylserine enriched with omega-3 fatty acids	Placebo	15 weeks	Height in cm Mean = 135.25 (SD = 13.35)	Height in cm Mean = 136.77 (SD = 12.26)	P=0.196
<b>Increased heart rate</b>						
Manor, 2012 <sup>60</sup> (Manor, 2013 <sup>61</sup> ) 200 Good RCT  b	Phosphatidylserine enriched with omega-3 fatty acids	Placebo	15 weeks	Increased Heart Rate Mean = 79.72 (SD = 12.03)	Increased Heart Rate Mean = 81.18 (SD = 13.24)	p=0.825
<b>Personality change</b>						
Manor, 2012 <sup>60</sup> (Manor, 2013 <sup>61</sup> ) 200 Good RCT  b	Phosphatidylserine enriched with omega-3 fatty acids	Placebo	15 weeks	Uninterested % patients with outcome = 32.7	Uninterested % patients with outcome = 38	NR

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
<b>Weight decrease</b>						
Manor, 2012 <sup>60</sup> (Manor, 2013 <sup>61</sup> ) 200 Good RCT  b	Phosphatidylserine enriched with omega-3 fatty acids	Placebo	15 weeks	Weight (kg) Mean = 33.39 (SD = 10.61)	Weight (kg) Mean = 33.06 (SD = 8.42)	P=0.980

<sup>a</sup> See Methods section “Quality Assessment of Individual Studies” for definitions of quality assessment ratings.

<sup>b</sup> Age categories: a = children aged ≤6 years, b = children aged 7-17, c = children of all ages ≤17.

Abbreviations: ADHD=attention deficit hyperactivity disorder; CRS-P=Conners Rating Scale-Parent; CRS-T=Conners Rating Scale-Teacher; NR=not reported; SE=standard error; SD=standard deviation; RCT=randomized controlled trial

**Table H-12. Findings on herbal interventions or dietary approaches for ADHD**

Study N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
<b>Behavior changes</b>						
Shakibaei, 2015 <sup>71</sup> 66 Good RCT  b	Methylphenidate and Ginkgo Biloba	Methylphenidate and placebo	6 weeks	Parent ADHD Rating Scale IV Inattention Mean = 13.58 (SD = 3.68)	Parent ADHD Rating Scale IV Inattention Mean = 14.34 (SD = 4.03)	P<.001
				Parent ADHD Rating Scale IV Hyperactivity-Impulsivity Mean = 11.54 (SD = 4.42)	Parent ADHD Rating Scale IV Hyperactivity-Impulsivity Mean = 11.37 (SD = 4.11)	P=0.417
				Teacher ADHD Rating Scale IV Inattention Mean = 13.74 (SD = 4.04)	Teacher ADHD Rating Scale IV Inattention Mean = 13.75 (SD = 3.85)	P=0.004
				Teacher ADHD Rating Scale IV Hyperactivity-Impulsivity Mean = 10.93 (SD = 4.06)	Teacher ADHD Rating Scale IV Hyperactivity-Impulsivity Mean = 11.2 (SD = 4.43)	P=0.203
				Children’s Global Assessment Scale (CGAS) Mean w/in group change = 8.92 (SD = 7.37)	CGSA Mean w/in group change = 8.51 (SD = 5.33)	P=0.901

Study N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
Arnold, 2011 <sup>72</sup> 52 Fair RCT  b	Zinc 15 mg once daily	Zinc 15mg twice daily	8 weeks	Affective blunting # patients with outcome = 1	Affective blunting # patients with outcome = 0	NR
			>8 weeks	Affective blunting # patients with outcome = 4	Affective blunting # patients with outcome = 0	NR
	(> 8 weeks with amphetamine in all groups)	Placebo	8 weeks	Anxiety # patients with outcome = 6	Anxiety # patients with outcome = 2	NR
			>8 weeks	Anxiety # patients with outcome = 9	Anxiety # patients with outcome = 3	NR
			8 weeks	Depression # patients with outcome = 7	Depression # patients with outcome = 2	NR
			>8 weeks	Depression # patients with outcome = 11	Depression # patients with outcome = 4	NR
			8 weeks	Irritability # patients with outcome = 9	Irritability # patients with outcome = 5	NR
			>8 weeks	Irritability # patients with outcome = 9	Irritability # patients with outcome = 6	NR
			8 weeks		Affective blunting # patients with outcome = 1	NR
			>8 weeks		Affective blunting # patients with outcome = 6	NR
			8 weeks		Anxiety # patients with outcome = 6	NR
			>8 weeks		Anxiety # patients with outcome = 5	NR
			8 weeks		Depression # patients with outcome = 5	NR
			>8 weeks		Depression # patients with outcome = 9	NR
			8 weeks		Irritability # patients with outcome = 10	NR
			>8 weeks		Irritability # patients with outcome = 14	NR



Study N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
Mohammadpour, 2016 <sup>73</sup> 54 Fair RCT  c	2000 IU Vitamin D plus MPH	Placebo Vitamin D plus MPH	2 days	WPREMB morning symptoms Mean = 2.76 (SD 2.2)  WPREMB evening symptoms Mean = 8.32 (SD 3.9)  WPREMB total score Mean = 11.08 (SD 5.5)	WPREMB morning symptoms Mean = 3.65 (SD 3.1)  WPREMB evening symptoms Mean = 11.68 (SD 5.4)  WPREMB total score Mean = 15.34 (SD 7.7)	NS  Significant  Significant
<b>Changes in appetite</b>						
Arnold, 2011 <sup>72</sup> 52 Fair RCT  b	Zinc 15 mg once daily  (> 8 weeks with amphetamin e in all groups)	Zinc 15mg twice daily  Placebo	8 weeks  >8 weeks  8 weeks  >8 weeks	Changes in appetite # patients with outcome = 3  Changes in appetite # patients with outcome = 15	Changes in appetite # patients with outcome = 4  Changes in appetite # patients with outcome = 8  Changes in appetite # patients with outcome = 4  Changes in appetite # patients with outcome = 17	NR  NR  NR  NR
Katz, 2010 <sup>74</sup> 120 Fair RCT  b	Patented herbal preparation	Placebo	0.5 months	Decreased appetite # patients with outcome = 1	Decreased appetite # patients with outcome = 2	NR
<b>Changes in standardized symptom scores</b>						
Dutta, 2012 <sup>75</sup> 86 Good RCT  b	Memomet syrup (Bacopa monniera 125 mg, Convulvulus pleuricaulis 100 mg, Centella asiatica 100 mg)	Placebo	4 months	Conners 10-point rating scale (hyperactivity) Mean Percent Change 48%	Conners 10-point rating scale (hyperactivity) Mean Percent Change 29%	Reported as significant in text

Study N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
Pelsser, 2011 <sup>76</sup> 100 Good RCT  c	Restricted elimination diet	No elimination diet	5 weeks after intervention started	ADHD rating scale--Parental total score Mean 24.2 95% CI=19.5, 29.0	ADHD rating scale--Parental total score Mean 1.3 95% CI = 0.2, 2.5 Mean between group change = 23.7 95% CI = 18.6, 28.8	p<.0001
				ADHD rating scale, teacher total score Mean 14.3 95% CI=11.6, 17.1	ADHD rating scale, teacher total score Mean -0.4 95% CI=-1.7, 1.0 Mean between group change = 15.3 95% CI = 12.0, 18.6	p<.0001
				ADHD rating scale, Parent inattention score Mean 11.3 95% CI=8.9, 13.8	ADHD rating scale, Parent inattention score Mean 0.2 95% CI=-0.4, 0.8 Mean between group change = 11.8 95% CI = 9.1, 14.4	p<.0001
				ADHD rating scale, parent hyperactivity and impulsivity score Mean 12.9 95% CI 10.5, 15.3	ADHD rating scale, parent hyperactivity and impulsivity score Mean 0.3 95% CI=-0.6, 1.1 Mean between group change = 11.9 95% CI = 9.3, 14.5	p<.0001
				ADHD rating scale, Teacher hyperactivity and impulsivity score Mean 7.8 95% CI= 6.2, 9.5	ADHD rating scale, Teacher hyperactivity and impulsivity score Mean -0.6 95% CI=-1.4, 0.2 Mean between group change = 8.5 95% CI = 6.8, 10.3	p<.0001
				Abbreviated Conners' scale-Parent Mean 12.0 95% CI=9.4, 14.6	Abbreviated Conners' scale-Parent Mean 0.1 95% CI=-0.7, 0.8 Mean between group change = 11.8 95% CI = 9.2, 14.5	p<.0001
				Abbreviated Conners' scale-Teacher Mean 6.6 95% CI= 4.9, 8.4	Abbreviated Conners' scale-Teacher Mean -0.8 95% CI=-1.4, -0.3 Mean between group change = 7.5 95% CI = 5.9, 6.2	p<.0001
				ADHD Rating Scale "Behaviour scores" Total score Mean = 9.6 (SD = 6.9)	ADHD Rating Scale "Behaviour scores" Total score Mean = 46.9 (SD = 5.5)	
				ADHD Rating Scale "Behaviour scores" Inattention Mean = 4.1 (SD = 3.9)	ADHD Rating Scale "Behaviour scores" Inattention Mean= 23.4 (SD = 26.3)	
				ADHD Rating Scale Hyperactivity and Impulsivity Mean = 5.3 (SD = 3.9)	ADHD Rating Scale Hyperactivity and Impulsivity Mean = 24.1 (SD = 4.2)	p<.0001
Abbreviated Conners Scale Mean = 5.9 (SD = 3.7)	Abbreviated Conners Scale Mean = 24 (SD = 3.7)					

Study N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
Arnold, 2011 <sup>72</sup> 52 Fair RCT  b	Zinc 15 mg once daily  (> 8 weeks with amphetamine in all groups)	Zinc 15mg twice daily	8 weeks	SNAP parent DSM-IV ADHD symptoms Mean = 1.92 (SD = 0.54)	SNAP parent DSM-IV ADHD symptoms Mean = 1.47 (SD = 0.65)	NR
				CRS-parent Mean = 1.93 (SD = 0.49)	CRS-parent Mean = 1.62 (SD = 0.73)	NR
				CRS-Teacher * zinc vs. placebo Mean = 1.90 (0.67)	CRS-Teacher * zinc vs. placebo Mean = 1.71 (SD = 0.79)	NR
			10 weeks	SNAP parent DSM-IV ADHD symptoms Mean = 1.61 (SD = 0.52)	SNAP parent DSM-IV ADHD symptoms Mean = 1.26 (0.62)	NR
				CRS-parent Mean = 1.52 (SD = 0.52)	CRS-parent Mean = 1.21 (SD = 0.75)	NR
				CRS-Teacher * zinc vs. placebo Mean = 1.23 (SD = 0.58)	CRS-Teacher * zinc vs. placebo Mean = 1.40 (0.81)	NR
		Zinc 15mg twice daily	13 weeks	SNAP parent DSM-IV ADHD symptoms Mean = 1.19 (0.56)	SNAP parent DSM-IV ADHD symptoms Mean = 0.67 (0.38)	NR
				CRS-parent Mean = 1.08 (SD = 0.45)	CRS-parent Mean = 0.81 (SD = 0.58)	NR
				CRS-Teacher * zinc vs. placebo Mean = 0.9 (SD = 0.65)	CRS-Teacher * zinc vs. placebo Mean = 0.63 (0.58)	NR
			21 weeks	SNAP parent DSM-IV ADHD symptoms Mean = .99 (SD = 0.52)	SNAP parent DSM-IV ADHD symptoms Mean = 0.67 (SD = 0.56)	NR
				CRS-parent Mean = .83 (SD = 0.47)	CRS-parent Mean = 0.8 (SD = 0.59)	NR
				CRS-Teacher * zinc vs. placebo Mean = 1.17 (SD = 0.53)	CRS-Teacher * zinc vs. placebo Mean = 0.94 (0.69)	NR
H-42				SNAP parent DSM-IV ADHD symptoms Mean = 0.82 (0.44)	NR	
				CRS-parent Mean = 0.72 (0.52)	NR	

Study N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
Mohammadpour, 2016 <sup>73</sup> 54 Fair RCT  c	2000 IU Vitamin D plus MPH	Placebo Vitamin D plus MPH	2 days	CPRS Oppositional Mean = 55.28 (SD 11.6)  CPRS Cognitive Mean = 56 (SD 11.8)  CPRS Hyperactive Mean = 56.92 (SD 11.8)  CPRS ADHD index Mean = 55.84 (SD 10.2)  ADHD-RS, Inattentive Mean = 49.80 (SD 31.7)  ADHD-RS, Hyperactive/Impulsive Mean = 69.40 (SD 22.4)  ADHD-RS, Total score Mean = 60.44 (SD 22.1)	CPRS Oppositional Mean = 59.76 (SD 12.1)  CPRS Cognitive Mean = 57.21 (SD 10.5)  CPRS Hyperactive Mean = 59.79 (SD 12.4)  CPRS ADHD index Mean = 56.79 (SD 9.6)  ADHD-RS, Inattentive Mean = 61.37 (SD 29.5)  ADHD-RS, Hyperactive/Impulsive Mean = 77.44 (SD 19.5)  ADHD-RS, Total score Mean = 71.75 (SD 23.6)	NR  NR  NR  NR  NR  NR
<b>Gastrointestinal symptoms</b>						
Arnold, 2011 <sup>72</sup> 52 Fair RCT  b	Zinc 15 mg once daily	Zinc 15mg twice daily   Placebo	8 weeks  >8 weeks  8 weeks  >8 weeks	Stomachaches + other GI # patients with outcome = 11  Stomachaches + other GI # patients with outcome = 11	Stomachaches + other GI # patients with outcome = 4  Stomachaches + other GI # patients with outcome = 3  Stomachaches + other GI # patients with outcome = 18  Stomachaches + other GI # patients with outcome = 14	NR  NR  NR  NR
Katz, 2010 <sup>74</sup> 120 Fair RCT  b	Patented herbal preparation	Placebo	0.5 months	GI discomfort # patients with outcome = 2	GI discomfort # patients with outcome = 3	NR
<b>Mood disorders</b>						
Katz, 2010 <sup>74</sup> 120 Fair RCT  b	Patented herbal preparation	Placebo	0.5 months	Emotional lability # patients with outcome = 2	Emotional lability # patients with outcome = 4	NR

Study N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
<b>Motor vehicle collisions</b>						
Katz, 2010 <sup>74</sup> 120 Fair RCT  b	Patented herbal preparation	Placebo	0.5 months	Accidental injury # patients with outcome = 1	Accidental injury # patients with outcome = 2	NR
<b>Sleep disturbance</b>						
Arnold, 2011 <sup>72</sup> 52 Fair RCT  b	Zinc 15 mg once daily	Zinc 15mg twice daily	8 weeks	Sleep # patients with outcome = 0	Sleep # patients with outcome = 1	NR
			>8 weeks	Sleep # patients with outcome = 8	Sleep # patients with outcome = 6	NR
		Placebo	8 weeks	Sleep # patients with outcome = 4	NR	
			>8 weeks	Sleep # patients with outcome = 16	NR	
Katz, 2010 <sup>74</sup> 120 Fair RCT  b	Patented herbal preparation	Placebo	0.5 months	Sleep disturbance # patients with outcome = 1	Sleep disturbance # patients with outcome = 4	NR
<b>Suicide ideation</b>						
Arnold, 2011 <sup>72</sup> 52 Fair RCT  b	Zinc 15 mg once daily	Zinc 15mg twice daily	8 weeks	Harm to self or others # patients with outcome = 1	Harm to self or others # patients with outcome = 0	NR
			>8 weeks	Harm to self or others # patients with outcome = 1	Harm to self or others # patients with outcome = 0	NR
		Placebo	8 weeks	Harm to self or others # patients with outcome = 0	NR	
			>8 weeks	Harm to self or others # patients with outcome = 0	NR	

Study N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value	
<b>Tics or other movement disorders</b>							
Arnold, 2011 <sup>72</sup> 52 Fair RCT  b	Zinc 15 mg once daily	Zinc 15mg twice daily	8 weeks	Stereotypical behaviors # patients with outcome = 3	Stereotypical behaviors # patients with outcome = 1	NR	
			>8 weeks	Stereotypical behaviors # patients with outcome = 7	Stereotypical behaviors # patients with outcome = 2	NR	
		Placebo	8 weeks		Stereotypical behaviors # patients with outcome = 5		NR
			>8 weeks			Stereotypical behaviors # patients with outcome = 9	NR

<sup>a</sup> See Methods section “Quality Assessment of Individual Studies” for definitions of quality assessment ratings.

<sup>b</sup> Age categories: a = children aged ≤6 years, b = children aged 7-17, c = children of all ages ≤17.

Abbreviations: ADHD=attention deficit hyperactivity disorder; CRS=Conners Rating Scale; SNAP=Swanson, Nolan and Pelham Revision; WPREMB=Weekly Parent Ratings of Evening and Morning Behavior

**Table H-13. Findings on other approaches for ADHD**

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
<b>Academic performance</b>						
Evans, 2016 <sup>77</sup> 326 Fair RCT  b	Challenging Horizons Program–after school version	Challenging Horizons Program– mentoring version	12 months	GPA Mean = 2.3	GPA Mean = 2.1	P= 0.146
		Community Care			GPA Mean = 2.1	

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
Mautone, 2012 <sup>78</sup> 61 Fair RCT  c	Family-School Success-Early Elementary	Coping with ADHD through Relationships and Education	12 weeks  2 months post-12 weeks	Academic Competence Evaluation Scales score Mean = 3.38 (SD = 0.57)  ACES score Mean = 3.39 (SD = 0.48)	Academic Competence Evaluation Scales score Mean = 3.11 (SD = 0.5)  ACES score Mean = 3.25 (SD = 0.66)	NR  NR
Power, 2012 <sup>79</sup> 199 Fair RCT  b	Family School Success Therapy	Coping With ADHD Through Relationships and Education	3 months  6 months	Academic Performance Rating Scale Mean = 3.32 (SD = 0.65)  Mean = 3.51 (SD = 0.64)	Academic Performance Rating Scale Mean = 3.2 (SD = 0.68)  Mean = 3.36 (SD = 0.76)	NS  NS
<b>Behavior changes</b>						

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
Abikoff, 2015 <sup>50</sup> 164 Good RCT  a	New Forest Parenting Package	Helping the noncompliant child          Control	6.8 months	<p>Behavior changes-Conners Parent Rating Scale Revised Scale-Revised - Total Mean = 68.01 (SD = 11.69)</p> <p>Behavior changes-Conners Parent Rating Scale Revised Scale-Revised - Inattention Mean = 65.60 (SD 13.53)</p> <p>Behavior changes-Conners Parent Rating Scale Revised Scale-Revised - Hyperactivity Mean = 68.08 (SD 10.69)</p> <p>Behavior changes-Conners Teachers Rating Scale Revised Scale-Revised - Total Mean = 64.27 (SD = 12.27)</p> <p>Behavior changes-Conners Teacher Rating Scale Revised Scale-Revised - Inattention Mean = 61.39 (SD = 13.58)</p> <p>Behavior changes-Conners Teacher Rating Scale Revised Scale-Revised - Hyperactivity Mean = 64.25 (SD = 11.64)</p> <p style="text-align: center;">H-47</p>	<p>Behavior changes-Conners Parent Rating Scale Revised Scale-Revised - Total Mean = 63.44 (SD = 10.13)</p> <p>Behavior changes-Conners Parent Rating Scale Revised Scale-Revised - Inattention Mean = 61.74 (SD 10.04)</p> <p>Behavior changes-Conners Parent Rating Scale Revised Scale-Revised - Hyperactivity Mean = 63.39 (SD 10.24)</p> <p>Behavior changes-Conners Teachers Rating Scale Revised Scale-Revised - Total Mean = 62.06 (SD = 11.39)</p> <p>Behavior changes-Conners Teacher Rating Scale Revised Scale-Revised - Inattention Mean = 60.48 (SD = 11.79)</p> <p>Behavior changes-Conners Teacher Rating Scale Revised Scale-Revised - Hyperactivity Mean = 62.01 (SD = 12.06)</p> <p>Behavior changes-Conners Parent Rating Scale Revised Scale-Revised - Total Mean = 76.44 (SD = 9.84)</p> <p>Behavior changes-Conners Parent Rating Scale Revised Scale-Revised - Inattention Mean = 75.31 (SD 10.38)</p> <p>Behavior changes-Conners Parent Rating Scale Revised Scale-Revised - Hyperactivity Mean = 74.45 (SD 10.67)</p> <p>Behavior changes-Conners Teachers Rating Scale Revised Scale-Revised - Total Mean = 70.65 (SD = 11.22)</p> <p>Behavior changes-Conners Parent Rating Scale Revised Scale-Revised - Inattention Mean = 68.22 (SD = 11.81)</p> <p>Behavior changes-Conners Parent Rating Scale Revised Scale-Revised - Hyperactivity Mean = 70.26 (SD = 11.98)</p>	<p>NS</p> <p>NS</p> <p>NS</p> <p>NS</p> <p>NS</p> <p>NS</p> <p>P=.001</p> <p>P=.001</p> <p>P=.001</p> <p>NS</p> <p>NS</p> <p>NS</p>



Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
Mohammadi, 2012 <sup>81</sup> (Mostafavi, 2012 <sup>82</sup> ) 60 Fair RCT  b	MPH + melatonin	MPH + placebo	8 weeks	Irritability # patients with outcome = 16  Sadness # patients with outcome = 10	Irritability # patients with outcome = 10  Sadness # patients with outcome = 2	NR  NR
Myers, 2015 <sup>83</sup> 223 Fair RCT  c	Telemedicine	Usual Care + Consult	25 weeks	Behavior changes-Vanderbilt caregiver, meeting criteria for inattention  Behavior changes-Vanderbilt caregiver, meeting criteria for hyperactivity  Behavior changes-Vanderbilt caregiver, meeting criteria for Combined  Behavior changes-Vanderbilt teacher, meeting criteria for inattention  Behavior changes-Vanderbilt teacher, meeting criteria for hyperactivity  Behavior changes-Vanderbilt teacher, meeting criteria for combined		P<.001  P=.02  P=.005  NS  P=.02  P=.045

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
Oberai, 2013 <sup>84</sup> 61 Fair RCT  b	Homeopathy	Placebo	6 weeks	CPRS-R Oppositional Mean = 56.4 (SD = 7)	CPRS-R Oppositional Mean = 63.2 (SD = 8.3)	NR
				CPRS-R Cognition Problems Mean = 56.6 (SD = 7.4)	CPRS-R Cognition Problems Mean = 67.4 (SD = 5.4)	NR
				CPRS-R Hyperactivity Mean = 63.7 (SD = 9.8)	CPRS-R Hyperactivity Mean = 78.3 (SD = 7.9)	NR
				CPRS-R ADHD Index Mean = 58.2 (SD = 7.3)	CPRS-R ADHD Index Mean = 68.3 (SD = 4.6)	NR
			12 weeks	CPRS-R Oppositional Mean = 49.5 (9.5)	CPRS-R Oppositional Mean = 66.2 (7.6)	P=.0001
				CPRS-R Cognition Problems Mean = 50.7 (7.7)	CPRS-R Cognition Problems Mean = 66.6 (6.2)	P=.0001
				CPRS-R Hyperactivity Mean = 55.6 (11.9)	CPRS-R Hyperactivity Mean = 78.2 (6.9)	P=.0001
				CPRS-R ADHD Index Mean = 51.8 (9.1)	CPRS-R ADHD Index Mean = 68.4 (5)	P=.0001
Conners Parent Rating Scale – Revised Effect size = 0.22					P = 0.005	
<b>Changes in appetite</b>						
Mohammadi, 2012 <sup>81</sup> (Mostafavi <sup>82</sup> ) 60 Fair RCT  b	MPH + melatonin	MPH + placebo	8 weeks	Appetite score Mean = 13.26  Loss of appetite # patients with outcome = 14	Appetite score Mean = 12.33  Loss of appetite # patients with outcome = 11	P=0.755

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
<b>Changes in standardized symptom scores</b>						
Hong, 2015 <sup>85</sup> 48 Fair RCT  b	Acupuncture	Waitlist control	1.5 months	ADHD-RS (Korean version) total score Mean = -4.91 (SD 10.50)  ADHD-RS Inattention Mean w/in group change = -2.67 (SD 4.90)  ADHD-RS Hyperactivity/Impulsivity Mean w/in group change = -2.26 (SD 5.50)  Conners-RS Mean w/in group change = -2.51 (SD 4.95)  CBCL total score Mean w/in group change = -7.79 (SD 16.69)  CBCL-ADHD subscale Mean w/in group change = -1.38 (SD 3.54)  CBCL-external subscale Mean w/in group change = -1.85 (SD 7.19)	ADHD-RS (Korean version) total score Mean = -4.00 (SD 11.00)  ADHD-RS Inattention Mean w/in group change = -1.68 (SD 4.61)  ADHD-RS Hyperactivity/Impulsivity Mean w/in group change = -2.84 (SD 4.00)  Conners-RS Mean w/in group change = -1.78 (SD 4.14)  CBCL total score Mean w/in group change = -3.00 (SD 25.00)  CBCL-ADHD subscale Mean w/in group change = -0.64 (SD 4.36)  CBCL-external subscale Mean w/in group change = -1.00 (SD 10.00)	0.561  0.250  0.956  0.385  0.393  0.247  0.632
Mohammadi, 2012 <sup>81</sup> (Mostafavi, 2012 <sup>82</sup> ) 60 Fair RCT  b	MPH + melatonin	MPH + placebo	8 weeks	ADHD RS attention score Mean = 11.11  ADHD-RS Hyperactivity score Mean = 11.62	ADHD RS attention score Mean = 11.29  ADHD-RS Hyperactivity score Mean = 10.96	P= 0.974  P= 0.720
Webster-Stratton, 2011 <sup>86</sup> 99 Fair RCT  c	Incredible Years Program	Waitlist	5 months	CBCL-mother Attention problems Mean = 65.8 (SD = 7)  CBCL Father – Attention problems Mean = 64.8 (SD = 8.6)	CBCL-mother Attention problems Mean = 68.8 (SD = 9.6)  CBCL Father – Attention problems Mean = 65.8 (SD = 10)	NS  NS

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
<b>Functional impairment</b>						
Evans, 2016 <sup>77</sup> 326 Fair RCT  b	Challenging Horizons Program–after school version	Challenging Horizons Program–mentoring version	6 months post-treatment	Impairment Rating Scale- Parent report; relation to children Mean = 1.76 (SD = 1.89)	Impairment Rating Scale- Parent report; relation to children Mean = 1.67 (SD = 1.78)	NR
		Community Care		Impairment Rating Scale- Teacher report; Relation with peers Mean = 1.93 (SD = 1.91)	Impairment Rating Scale- Teacher report; Relation with peers Mean = 1.97 (SD = 1.83)	NS
					Impairment Rating Scale- Parent report; relation to children Mean = 1.8 (SD = 1.69)	NS
					Impairment Rating Scale- Teacher report; Relation with peers Mean = 1.72 (SD = 1.94)	
Hong, 2015 <sup>85</sup> 48 Fair RCT  b	Acupuncture	Waitlist control	1.5 months	CGI-S Mean w/in group change = -0.83 (SD 1.00)	CGI-S Mean w/in group change = 0.00 (SD 1.00)	0.012
Oberai, 2013 <sup>84</sup> 61 Fair RCT  b	Homeopathy	Placebo	6 weeks	CGI-SS Mean = 2.9 (SD = 0.7)	CGI-SS Mean = 3.8 (SD = 0.6)	NR
			12 weeks	Clinical Global Impression Severity Scale Mean = 2.5 (0.7)	Clinical Global Impression Severity Scale Mean = 4 (0.6)	P=.0001
<b>Gastrointestinal symptoms</b>						
Mohammadi, 2012 <sup>81</sup> (Mostafavi, 2012 <sup>82</sup> ) 60 Fair RCT  b	MPH + melatonin	MPH + placebo	8 weeks	Stomachache # patients with outcome = 9	Stomachache # patients with outcome = 5	NR
				Nausea and vomiting # patients with outcome = 3	Nausea and vomiting # patients with outcome = 3	NR

Study (Companion) N Quality <sup>a</sup> Design Age Category <sup>b</sup>	Intervention	Comparison	Follow-up Times	Findings–Intervention	Findings–Comparison	Between group P value
<b>Sleep disturbance</b>						
Mohammadi, 2012 <sup>81</sup> (Mostafavi, 2012 <sup>82</sup> ) 60 Fair RCT  b	MPH + melatonin	MPH + placebo	8 weeks	Mean sleep latency (min) Mean = 17.96  Total sleep (hour) Mean = 8.51  SDSC sleep score Mean = 41.3  Insomnia # patients with outcome = 8  Sleepiness # patients with outcome = 4	Mean sleep latency (min) Mean = 26.37  Total sleep (hour) Mean = 8.27  SDSC sleep score Mean = 45.5  Insomnia # patients with outcome = 8  Sleepiness # patients with outcome = 4	P=0.267  P= 0.197  P= 0.528  NR  NR
<b>Tics or other movement disorders</b>						
Mohammadi, 2012 <sup>81</sup> (Mostafavi, 2012 <sup>82</sup> ) 60 Fair RCT  b	MPH + melatonin	MPH + placebo	8 weeks	Dyskinesias # patients with outcome = 0  Tics # patients with outcome = 1	Dyskinesias # patients with outcome = 2  Tics # patients with outcome = 1	NR  NR
<b>Weight decrease</b>						
Mohammadi, 2012 <sup>81</sup> (Mostafavi, 2012 <sup>82</sup> ) 60 Fair RCT  b	MPH + melatonin	MPH + placebo	8 weeks	Weight loss # patients with outcome = 9	Weight loss # patients with outcome = 9	NR

<sup>a</sup> See Methods section “Quality Assessment of Individual Studies” for definitions of quality assessment ratings.

<sup>b</sup> Age categories: a = children aged ≤6 years, b = children aged 7-17, c = children of all ages ≤17.

Abbreviations: ADHD=attention deficit hyperactivity disorder; CBCL=Child Behavior Checklist; CGI-SS= Clinical Global Impression of Severity of Suicidality; CPRS=Conners Parent Rating Scale; GPA=grade point average; SDSC=Sleep Disturbance Scale for Children

## References to Appendix H

1. Bunte TL, Laschen S, Schoemaker K, et al. Clinical usefulness of observational assessment in the diagnosis of DBD and ADHD in preschoolers. *J Clin Child Adolesc Psychol.* 2013;42(6):749-61. doi: 10.1080/15374416.2013.773516. PMID: 23477379.
2. Bunte TL, Schoemaker K, Hessen DJ, et al. Clinical usefulness of the Kiddie-Disruptive Behavior Disorder Schedule in the diagnosis of DBD and ADHD in preschool children. *J Abnorm Child Psychol.* 2013 Jul;41(5):681-90. doi: 10.1007/s10802-013-9732-1. PMID: 23474833.
3. Thorell LB, Eninger L, Brocki KC, et al. Childhood executive function inventory (CHEXI): a promising measure for identifying young children with ADHD? *J Clin Exp Neuropsychol.* 2010 Jan;32(1):38-43. doi: 10.1080/13803390902806527. PMID: 19381995.
4. Martin-Martinez D, Casaseca-de-la-Higuera P, Alberola-Lopez S, et al. Nonlinear analysis of actigraphic signals for the assessment of the attention-deficit/hyperactivity disorder (ADHD). *Med Eng Phys.* 2012 Nov;34(9):1317-29. doi: 10.1016/j.medengphy.2011.12.023. PMID: 22297088.
5. Markovska-Simoska S, Pop-Jordanova N. Quantitative EEG in Children and Adults With Attention Deficit Hyperactivity Disorder: Comparison of Absolute and Relative Power Spectra and Theta/Beta Ratio. *Clin EEG Neurosci.* 2016 May 11;doi: 10.1177/1550059416643824. PMID: 27170672.
6. Gonzalez JJ, Mendez LD, Manas S, et al. Performance analysis of univariate and multivariate EEG measurements in the diagnosis of ADHD. *Clin Neurophysiol.* 2013 Jun;124(6):1139-50. doi: 10.1016/j.clinph.2012.12.006. PMID: 23332776.
7. Liechti MD, Valko L, Muller UC, et al. Diagnostic value of resting electroencephalogram in attention-deficit/hyperactivity disorder across the lifespan. *Brain Topogr.* 2013 Jan;26(1):135-51. doi: 10.1007/s10548-012-0258-6. PMID: 23053601.
8. Castro-Cabrera P, Gomez-Garcia J, Restrepo F, et al. Evaluation of feature extraction techniques on event-related potentials for detection of attention-deficit/hyperactivity disorder. *Conf Proc IEEE Eng Med Biol Soc.* 2010;2010:851-4. doi: 10.1109/iembs.2010.5626862. PMID: 21096317.
9. Soliva JC, Fauquet J, Bielsa A, et al. Quantitative MR analysis of caudate abnormalities in pediatric ADHD: proposal for a diagnostic test. *Psychiatry Res.* 2010 Jun 30;182(3):238-43. doi: 10.1016/j.psychres.2010.01.013. PMID: 20488672.
10. Kim JW, Lee J, Kim BN, et al. Theta-phase gamma-amplitude coupling as a neurophysiological marker of attention deficit/hyperactivity disorder in children. *Neurosci Lett.* 2015 Aug 31;603:25-30. doi: 10.1016/j.neulet.2015.07.006. PMID: 26170246.
11. Kim J, Lee Y, Han D, et al. The utility of quantitative electroencephalography and Integrated Visual and Auditory Continuous Performance Test as auxiliary tools for the Attention Deficit Hyperactivity Disorder diagnosis. *Clin Neurophysiol.* 2015 Mar;126(3):532-40. doi: 10.1016/j.clinph.2014.06.034. PMID: 25088931.
12. Ogrim G, Kropotov J, Hestad K. The quantitative EEG theta/beta ratio in attention deficit/hyperactivity disorder and normal controls: sensitivity, specificity, and behavioral correlates. *Psychiatry Res.* 2012 Aug 15;198(3):482-8. doi: 10.1016/j.psychres.2011.12.041. PMID: 22425468.

13. Park J, Kim C, Ahn JH, et al. Clinical Use of Continuous Performance Tests to Diagnose Children With ADHD. *J Atten Disord.* 2016 Jul 12;doi: 10.1177/1087054716658125. PMID: 27412120.
14. Zelnik N, Bennett-Back O, Miari W, et al. Is the test of variables of attention reliable for the diagnosis of attention-deficit hyperactivity disorder (ADHD)? *J Child Neurol.* 2012 Jun;27(6):703-7. doi: 10.1177/0883073811423821. PMID: 22378668.
15. Berger I, Goldzweig G. Objective measures of attention-deficit/hyperactivity disorder: a pilot study. *Isr Med Assoc J.* 2010 Sep;12(9):531-5. PMID: 21287795.
16. Bloch Y, Fixman M, Maoz H, et al. Can computerized cognitive tests assist in the clinical diagnosis of attention-deficit hyperactivity disorder? *J Neuropsychiatry Clin Neurosci.* 2012 Winter;24(1):111-4. doi: 10.1176/appi.neuropsych.11010014. PMID: 22450621.
17. Klenberg L, Jamsa S, Hayrinen T, et al. The Attention and Executive Function Rating Inventory (ATTEX): Psychometric properties and clinical utility in diagnosing ADHD subtypes. *Scand J Psychol.* 2010 Mar 19;51(5):439-48. doi: 10.1111/j.1467-9450.2010.00812.x. PMID: 20338019.
18. Caudal F. New marker using bioimpedance technology in screening for attention deficit/hyperactivity disorder (ADHD) in children as an adjunct to conventional diagnostic methods. *Psychol Res Behav Manag.* 2011;4:113-7. doi: 10.2147/prbm.s22924. PMID: 22114541.
19. Ferrin M, Vance A. Examination of neurological subtle signs in ADHD as a clinical tool for the diagnosis and their relationship to spatial working memory. *J Child Psychol Psychiatry.* 2012 Apr;53(4):390-400. doi: 10.1111/j.1469-7610.2011.02496.x. PMID: 22141455.
20. Carballo JJ, Rodriguez-Blanco L, Garcia-Nieto R, et al. Screening for the ADHD Phenotype Using the Strengths and Difficulties Questionnaire in a Clinical Sample of Newly Referred Children and Adolescents. *J Atten Disord.* 2014 Dec 16;doi: 10.1177/1087054714561858. PMID: 25515677.
21. Cortese S, Panei P, Arcieri R, et al. Safety of Methylphenidate and Atomoxetine in Children with Attention-Deficit/Hyperactivity Disorder (ADHD): Data from the Italian National ADHD Registry. *CNS Drugs.* 2015 Oct;29(10):865-77. doi: 10.1007/s40263-015-0266-7. PMID: 26293742.
22. Didoni A, Sequi M, Panei P, et al. One-year prospective follow-up of pharmacological treatment in children with attention-deficit/hyperactivity disorder. *Eur J Clin Pharmacol.* 2011 Oct;67(10):1061-7. doi: 10.1007/s00228-011-1050-3. PMID: 21538145.
23. Panei P, Arcieri R, Bonati M, et al. Safety of psychotropic drug prescribed for attention-deficit/hyperactivity disorder in Italy. *Adverse Drug Reaction Bulletin.* 2010(260):999-1002.
24. Molina BS, Hinshaw SP, Swanson JM, et al. The MTA at 8 years: prospective follow-up of children treated for combined-type ADHD in a multisite study. *J Am Acad Child Adolesc Psychiatry.* 2009 May;48(5):484-500. doi: 10.1097/CHI.0b013e31819c23d0. PMID: 19318991.
25. Vitiello B, Elliott GR, Swanson JM, et al. Blood pressure and heart rate over 10 years in the multimodal treatment study of children with ADHD. *Am J Psychiatry.* 2012 Feb;169(2):167-77. doi: 10.1176/appi.ajp.2011.10111705. PMID: 21890793.
26. Gelade K, Janssen TW, Bink M, et al. Behavioral Effects of Neurofeedback Compared to Stimulants and Physical Activity in Attention-Deficit/Hyperactivity Disorder: A Randomized Controlled Trial. *J Clin Psychiatry.* 2016 Oct;77(10):e1270-e7. doi: 10.4088/JCP.15m10149. PMID: 27631143.

27. Barragan E, Breuer D, Dopfner M. Efficacy and Safety of Omega-3/6 Fatty Acids, Methylphenidate, and a Combined Treatment in Children With ADHD. *J Atten Disord*. 2014 Jan 24;doi: 10.1177/1087054713518239. PMID: 24464327.
28. Li JJ, Li ZW, Wang SZ, et al. Ningdong granule: a complementary and alternative therapy in the treatment of attention deficit/hyperactivity disorder. *Psychopharmacology (Berl)*. 2011 Aug;216(4):501-9. doi: 10.1007/s00213-011-2238-z. PMID: 21416235.
29. Salehi B, Imani R, Mohammadi MR, et al. Ginkgo biloba for attention-deficit/hyperactivity disorder in children and adolescents: a double blind, randomized controlled trial. *Prog Neuropsychopharmacol Biol Psychiatry*. 2010 Feb 1;34(1):76-80. doi: 10.1016/j.pnpbp.2009.09.026. PMID: 19815048.
30. Duric NS, Assmus J, Gundersen D, et al. Neurofeedback for the treatment of children and adolescents with ADHD: a randomized and controlled clinical trial using parental reports. *BMC Psychiatry*. 2012;12:107. doi: 10.1186/1471-244x-12-107. PMID: 22877086.
31. Duric NS, Assmus J, Elgen IB. Self-reported efficacy of neurofeedback treatment in a clinical randomized controlled study of ADHD children and adolescents. *Neuropsychiatr Dis Treat*. 2014;10:1645-54. doi: 10.2147/ndt.s66466. PMID: 25214789.
32. Moreno-García I, Delgado-Pardo G, de Reya CC-V, et al. Neurofeedback, pharmacological treatment and behavioral therapy in hyperactivity: Multilevel analysis of treatment effects on electroencephalography. *International Journal of Clinical and Health Psychology*. 2015;15(3):217-25. doi: 10.1016/j.ijchp.2015.04.003. PMID: 2015-48012-005.
33. Gevensleben H, Holl B, Albrecht B, et al. Is neurofeedback an efficacious treatment for ADHD? A randomised controlled clinical trial. *J Child Psychol Psychiatry*. 2009 Jul;50(7):780-9. doi: 10.1111/j.1469-7610.2008.02033.x. PMID: 19207632.
34. Gevensleben H, Holl B, Albrecht B, et al. Neurofeedback training in children with ADHD: 6-month follow-up of a randomised controlled trial. *Eur Child Adolesc Psychiatry*. 2010 Sep;19(9):715-24. doi: 10.1007/s00787-010-0109-5. PMID: 20499120.
35. Wangler S, Gevensleben H, Albrecht B, et al. Neurofeedback in children with ADHD: specific event-related potential findings of a randomized controlled trial. *Clin Neurophysiol*. 2011 May;122(5):942-50. doi: 10.1016/j.clinph.2010.06.036. PMID: 20843737.
36. Bink M, van Nieuwenhuizen C, Popma A, et al. Behavioral effects of neurofeedback in adolescents with ADHD: a randomized controlled trial. *Eur Child Adolesc Psychiatry*. 2015 Sep;24(9):1035-48. doi: 10.1007/s00787-014-0655-3. PMID: 25477074.
37. Steiner NJ, Frenette EC, Rene KM, et al. Neurofeedback and cognitive attention training for children with attention-deficit hyperactivity disorder in schools. *J Dev Behav Pediatr*. 2014 Jan;35(1):18-27. doi: 10.1097/dbp.0000000000000009. PMID: 24399101.
38. Steiner NJ, Frenette EC, Rene KM, et al. In-school neurofeedback training for ADHD: sustained improvements from a randomized control trial. *Pediatrics*. 2014 Mar;133(3):483-92. doi: 10.1542/peds.2013-2059. PMID: 24534402.
39. Chacko A, Bedard AC, Marks DJ, et al. A randomized clinical trial of Cogmed Working Memory Training in school-age children with ADHD: a replication in a diverse sample using a control condition. *J Child Psychol Psychiatry*. 2014 Mar;55(3):247-55. doi: 10.1111/jcpp.12146. PMID: 24117656.



40. Dovis S, Van der Oord S, Wiers RW, et al. Improving executive functioning in children with ADHD: training multiple executive functions within the context of a computer game. a randomized double-blind placebo controlled trial. *PLoS One*. 2015;10(4):e0121651. doi: 10.1371/journal.pone.0121651. PMID: 25844638.
41. Egeland J, Aarli AK, Saunes BK. Few effects of far transfer of working memory training in ADHD: a randomized controlled trial. *PLoS One*. 2013;8(10):e75660. doi: 10.1371/journal.pone.0075660. PMID: 24124503.
42. Hovik KT, Saunes BK, Aarli AK, et al. RCT of working memory training in ADHD: long-term near-transfer effects. *PLoS One*. 2013;8(12):e80561. doi: 10.1371/journal.pone.0080561. PMID: 24352414.
43. van Dongen-Boomsma M, Vollebregt MA, Buitelaar JK, et al. Working memory training in young children with ADHD: a randomized placebo-controlled trial. *J Child Psychol Psychiatry*. 2014 Aug;55(8):886-96. doi: 10.1111/jcpp.12218. PMID: 24628438.
44. Beck SJ, Hanson CA, Puffenberger SS, et al. A controlled trial of working memory training for children and adolescents with ADHD. *J Clin Child Adolesc Psychol*. 2010;39(6):825-36. doi: 10.1080/15374416.2010.517162. PMID: 21058129.
45. van der Donk M, Hiemstra-Beernink AC, Tjeenk-Kalff A, et al. Cognitive training for children with ADHD: a randomized controlled trial of cogmed working memory training and 'paying attention in class'. *Front Psychol*. 2015;6:1081. doi: 10.3389/fpsyg.2015.01081. PMID: 26284005.
46. Vidal R, Castells J, Richarte V, et al. Group therapy for adolescents with attention-deficit/hyperactivity disorder: a randomized controlled trial. *J Am Acad Child Adolesc Psychiatry*. 2015 Apr;54(4):275-82. doi: 10.1016/j.jaac.2014.12.016. PMID: 25791144.
47. Boyer BE, Geurts HM, Prins PJ, et al. Two novel CBTs for adolescents with ADHD: the value of planning skills. *Eur Child Adolesc Psychiatry*. 2015 Sep;24(9):1075-90. doi: 10.1007/s00787-014-0661-5. PMID: 25549767.
48. Boyer BE, Geurts HM, Prins PJM, et al. One-year follow-up of two novel CBTs for adolescents with ADHD. *European Child and Adolescent Psychiatry*. 2015.
49. Abikoff H, Gallagher R, Wells KC, et al. Remediating organizational functioning in children with ADHD: immediate and long-term effects from a randomized controlled trial. *J Consult Clin Psychol*. 2013 Feb;81(1):113-28. doi: 10.1037/a0029648. PMID: 22889336.
50. Storebo OJ, Gluud C, Winkel P, et al. Social-skills and parental training plus standard treatment versus standard treatment for children with ADHD--the randomised SOSTRA trial. *PLoS One*. 2012;7(6):e37280. doi: 10.1371/journal.pone.0037280. PMID: 22745657.
51. Chacko A, Wymbs BT, Wymbs FA, et al. Enhancing traditional behavioral parent training for single mothers of children with ADHD. *J Clin Child Adolesc Psychol*. 2009 Mar;38(2):206-18. doi: 10.1080/15374410802698388. PMID: 19283599.
52. Bai GN, Wang YF, Yang L, et al. Effectiveness of a focused, brief psychoeducation program for parents of ADHD children: Improvement of medication adherence and symptoms. *Neuropsychiatr Dis Treat*. 2015;11:2721-35.
53. Ferrin M, Moreno-Granados JM, Salcedo-Marin MD, et al. Evaluation of a psychoeducation programme for parents of children and adolescents with ADHD: immediate and long-term effects using a blind randomized controlled trial. *Eur Child Adolesc Psychiatry*. 2014 Aug;23(8):637-47. doi: 10.1007/s00787-013-0494-7. PMID: 24292412.

54. Hiscock H, Sciberras E, Mensah F, et al. Impact of a behavioural sleep intervention on symptoms and sleep in children with attention deficit hyperactivity disorder, and parental mental health: randomised controlled trial. *BMJ*. 2015;350:h68. doi: 10.1136/bmj.h68. PMID: 25646809.
55. Papadopoulou N, Sciberras E, Hiscock H, et al. The Efficacy of a Brief Behavioral Sleep Intervention in School-Aged Children With ADHD and Comorbid Autism Spectrum Disorder. *J Atten Disord*. 2015 Feb 2doi: 10.1177/1087054714568565. PMID: 25646022.
56. Ostberg M, Rydell AM. An efficacy study of a combined parent and teacher management training programme for children with ADHD. *Nord J Psychiatry*. 2012 Apr;66(2):123-30. doi: 10.3109/08039488.2011.641587. PMID: 22150634.
57. Pfiffner LJ, Hinshaw SP, Owens E, et al. A two-site randomized clinical trial of integrated psychosocial treatment for ADHD-inattentive type. *J Consult Clin Psychol*. 2014 Dec;82(6):1115-27. doi: 10.1037/a0036887. PMID: 24865871.
58. Ercan ES, Ardic UA, Kutlu A, et al. No beneficial effects of adding parent training to methylphenidate treatment for ADHD + ODD/CD children: a 1-year prospective follow-up study. *J Atten Disord*. 2014 Feb;18(2):145-57. doi: 10.1177/1087054711432884. PMID: 22522574.
59. Huang YH, Chung CY, Ou HY, et al. Treatment effects of combining social skill training and parent training in Taiwanese children with attention deficit hyperactivity disorder. *Journal of the Formosan Medical Association*. 2015;114(3):260-7.
60. Manor I, Magen A, Keidar D, et al. The effect of phosphatidylserine containing Omega3 fatty-acids on attention-deficit hyperactivity disorder symptoms in children: a double-blind placebo-controlled trial, followed by an open-label extension. *Eur Psychiatry*. 2012 Jul;27(5):335-42. doi: 10.1016/j.eurpsy.2011.05.004. PMID: 21807480.
61. Manor I, Magen A, Keidar D, et al. Safety of phosphatidylserine containing omega3 fatty acids in ADHD children: a double-blind placebo-controlled trial followed by an open-label extension. *Eur Psychiatry*. 2013 Aug;28(6):386-91. doi: 10.1016/j.eurpsy.2012.11.001. PMID: 23312676.
62. Anand P, Sachdeva A. Effect of Poly Unsaturated Fatty Acids Administration on Children with Attention Deficit Hyperactivity Disorder: A Randomized Controlled Trial. *J Clin Diagn Res*. 2016 Sep;10(9):Oc01-oc5. doi: 10.7860/jcdr/2016/20423.8471. PMID: 27790483.
63. Gustafsson PA, Birberg-Thornberg U, Duchon K, et al. EPA supplementation improves teacher-rated behaviour and oppositional symptoms in children with ADHD. *Acta Paediatr*. 2010 Oct;99(10):1540-9. doi: 10.1111/j.1651-2227.2010.01871.x. PMID: 20491709.
64. Johnson M, Ostlund S, Fransson G, et al. Omega-3/omega-6 fatty acids for attention deficit hyperactivity disorder: a randomized placebo-controlled trial in children and adolescents. *J Atten Disord*. 2009 Mar;12(5):394-401. doi: 10.1177/1087054708316261. PMID: 18448859.
65. Johnson M, Mansson JE, Ostlund S, et al. Fatty acids in ADHD: plasma profiles in a placebo-controlled study of Omega 3/6 fatty acids in children and adolescents. *Atten Defic Hyperact Disord*. 2012 Dec;4(4):199-204. doi: 10.1007/s12402-012-0084-4. PMID: 22753087.
66. Milte CM, Parletta N, Buckley JD, et al. Eicosapentaenoic and docosahexaenoic acids, cognition, and behavior in children with attention-deficit/hyperactivity disorder: a randomized controlled trial. *Nutrition*. 2012 Jun;28(6):670-7. doi: 10.1016/j.nut.2011.12.009. PMID: 22541055.

67. Milte CM, Parletta N, Buckley JD, et al. Increased Erythrocyte Eicosapentaenoic Acid and Docosahexaenoic Acid Are Associated With Improved Attention and Behavior in Children With ADHD in a Randomized Controlled Three-Way Crossover Trial. *J Atten Disord*. 2015 Nov;19(11):954-64. doi: 10.1177/1087054713510562. PMID: 24214970.
68. Raz R, Carasso RL, Yehuda S. The influence of short-chain essential fatty acids on children with attention-deficit/hyperactivity disorder: a double-blind placebo-controlled study. *J Child Adolesc Psychopharmacol*. 2009 Apr;19(2):167-77. doi: 10.1089/cap.2008.070. PMID: 19364294.
69. Widenhorn-Muller K, Schwanda S, Scholz E, et al. Effect of supplementation with long-chain omega-3 polyunsaturated fatty acids on behavior and cognition in children with attention deficit/hyperactivity disorder (ADHD): a randomized placebo-controlled intervention trial. *Prostaglandins Leukot Essent Fatty Acids*. 2014 Jul-Aug;91(1-2):49-60. doi: 10.1016/j.plefa.2014.04.004. PMID: 24958525.
70. Hariri M, Djazayeri A, Djalali M, et al. Effect of n-3 supplementation on hyperactivity, oxidative stress and inflammatory mediators in children with attention-deficit-hyperactivity disorder. *Malays J Nutr*. 2012 Dec;18(3):329-35. PMID: 24568073.
71. Shakibaei F, Radmanesh M, Salari E, et al. Ginkgo biloba in the treatment of attention-deficit/hyperactivity disorder in children and adolescents. A randomized, placebo-controlled, trial. *Complement Ther Clin Pract*. 2015 May;21(2):61-7. doi: 10.1016/j.ctcp.2015.04.001. PMID: 25925875.
72. Arnold LE, Disilvestro RA, Bozzolo D, et al. Zinc for attention-deficit/hyperactivity disorder: placebo-controlled double-blind pilot trial alone and combined with amphetamine. *J Child Adolesc Psychopharmacol*. 2011 Feb;21(1):1-19. doi: 10.1089/cap.2010.0073. PMID: 21309695.
73. Mohammadpour N, Jazayeri S, Tehrani-Doost M, et al. Effect of vitamin D supplementation as adjunctive therapy to methylphenidate on ADHD symptoms: A randomized, double blind, placebo-controlled trial. *Nutr Neurosci*. 2016 Dec 07:1-8. doi: 10.1080/1028415x.2016.1262097. PMID: 27924679.
74. Katz M, Levine AA, Kol-Degani H, et al. A compound herbal preparation (CHP) in the treatment of children with ADHD: a randomized controlled trial. *J Atten Disord*. 2010 Nov;14(3):281-91. doi: 10.1177/1087054709356388. PMID: 20228219.
75. Dutta B, Barua TK, Ray J, et al. A study of evaluation of safety and efficacy of memomet, a multi herbal formulation (memomet) in the treatment of behavioural disorder in children. *International Journal of Research in Pharmaceutical Sciences*. 2012;3(2):282-6.
76. Pelsser LM, Frankena K, Toorman J, et al. Effects of a restricted elimination diet on the behaviour of children with attention-deficit hyperactivity disorder (INCA study): a randomised controlled trial. *Lancet*. 2011 Feb 5;377(9764):494-503. doi: 10.1016/s0140-6736(10)62227-1. PMID: 21296237.
77. Evans SW, Langberg JM, Schultz BK, et al. Evaluation of a School-Based Treatment Program for Young Adolescents With ADHD. *Journal of Consulting and Clinical Psychology*. 2016;84(1):15-30.
78. Mautone JA, Marshall SA, Sharman J, et al. Development of a Family-School Intervention for Young Children With Attention Deficit Hyperactivity Disorder. *School Psych Rev*. 2012;41(4):447-66. PMID: 24353368.
79. Power TJ, Mautone JA, Soffer SL, et al. A family-school intervention for children with ADHD: results of a randomized clinical trial. *J Consult Clin Psychol*. 2012 Aug;80(4):611-23. doi: 10.1037/a0028188. PMID: 22506793.

80. Abikoff HB, Thompson M, Laver-Bradbury C, et al. Parent training for preschool ADHD: a randomized controlled trial of specialized and generic programs. *J Child Psychol Psychiatry*. 2015 Jun;56(6):618-31. doi: 10.1111/jcpp.12346. PMID: 25318650.
81. Mohammadi MR, Mostafavi SA, Keshavarz SA, et al. Melatonin effects in methylphenidate treated children with attention deficit hyperactivity disorder: a randomized double blind clinical trial. *Iran J Psychiatry*. 2012 Spring;7(2):87-92. PMID: 22952551.
82. Mostafavi SA, Mohammadi MR, Hosseinzadeh P, et al. Dietary intake, growth and development of children with ADHD in a randomized clinical trial of Ritalin and Melatonin co-administration: Through circadian cycle modification or appetite enhancement? *Iran J Psychiatry*. 2012 Summer;7(3):114-9. PMID: 23139692.
83. Myers K, Vander Stoep A, Zhou C, et al. Effectiveness of a telehealth service delivery model for treating attention-deficit/hyperactivity disorder: a community-based randomized controlled trial. *J Am Acad Child Adolesc Psychiatry*. 2015 Apr;54(4):263-74. doi: 10.1016/j.jaac.2015.01.009. PMID: 25791143.
84. Oberai P, Gopinadhan S, Varanasi R, et al. Homoeopathic management of attention deficit hyperactivity disorder: A randomised placebo-controlled pilot trial. *Indian Journal of Research in Homeopathy*. 2013;7(4):158-67.
85. Hong SS, Cho SH. Treating attention deficit hyperactivity disorder with acupuncture: A randomized controlled trial. *European Journal of Integrative Medicine*. 2015.
86. Webster-Stratton CH, Reid MJ, Beauchaine T. Combining parent and child training for young children with ADHD. *J Clin Child Adolesc Psychol*. 2011;40(2):191-203. doi: 10.1080/15374416.2011.546044. PMID: 21391017.