



Effective Health Care Program

Therapies for Children With Autism Spectrum Disorder

A Review of the Research for Parents and Caregivers



Agency for Healthcare Research and Quality

Advancing Excellence in Health Care • www.ahrq.gov

Is This Guide Right for the Child in My Care?

Yes, if:

The child you care for is 0 to 12 years old and has autism spectrum disorder (ASD).

No, if:

The child you care for is older than 12 years or has a different behavioral, emotional, developmental, or learning disorder.

What does this guide cover?

This guide describes research about the possible benefits and negative side effects of therapies for children who are 0 to 12 years old and have ASD. It was created to help you talk with your doctor, school administrator, social worker, or health insurance representative about programs and therapies.

Where does the information in this guide come from?

The information for this guide comes from a review of more than 200 studies by an independent research center. The Agency for Healthcare Research and Quality, a Federal government agency, funded this report. The report was reviewed by doctors, patients, and other researchers. You can read the full report at www.effectivehealthcare.ahrq.gov/autism1.cfm.

What is autism spectrum disorder (ASD)?

ASD includes a range of behavioral symptoms.

The two core features of ASD are:

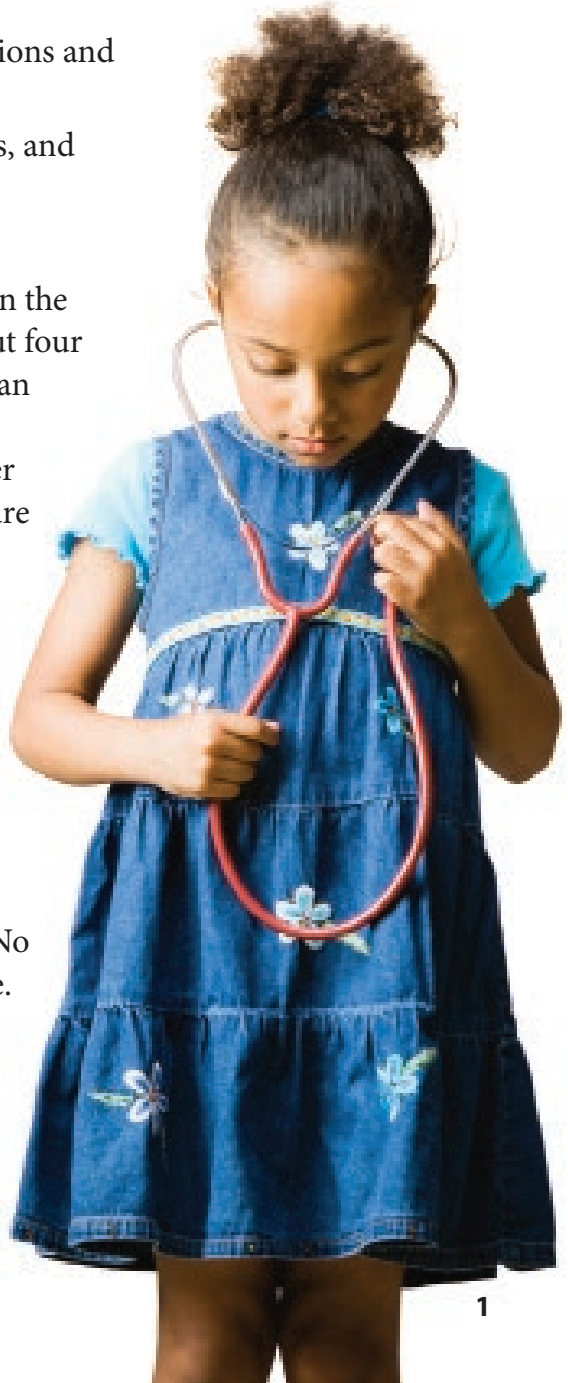
- Difficulty with social interactions and communication.
- Repetitive behaviors, interests, and activities.

How common is ASD?

About one in every 68 children in the United States has ASD. It is about four times more common in boys than girls. It can affect children of all races and social classes wherever they live. Researchers are not sure what causes ASD.

No two children with ASD are alike

ASD is called a “wide-spectrum disorder” because the symptoms are different for each child. Symptoms can range from mild to severe, and can change as the child grows. No two children with ASD are alike. This makes understanding ASD and finding the best therapies difficult.



Understanding Your Options

How do I make sense of all the different treatments?

Treatments for ASD can be grouped into different categories (see figure below). Each category focuses on a type of treatment.



Because children with ASD may show different symptoms, a family will need to choose from the available treatments, therapies, and programs based on their child's needs. The treatment plan for your child may have some treatments from each of these categories.

What can the research tell me?

There is a lot of research being done on how to treat the symptoms of ASD in children or to help children overcome the challenges of ASD. But to decide whether something helps or not (or works better than something else), researchers need to look at the results from many studies rather than just one. One study may find that something helped, while another study may find that it did not. The information in this section will tell you about each type of treatment and what researchers found when they looked at all the studies at once.



Behavior programs

These programs address social skills, attention, sleep, play, anxiety, parent interaction, and challenging behaviors. Some programs also help with children's overall development.



Many of these programs use specially trained providers who work with parents and children for up to 25 hours every week. The programs can last as long as 12 weeks to 3 years. They are held in homes, schools, and clinics.

Early intensive behavioral intervention, cognitive behavioral therapy, and social skills training are types of behavior programs. Early intensive behavioral interventions target children's overall development. Programs such as the Lovaas Model and Early Start Denver Model mostly focus on working with children. Other programs, such as Pivotal Response Training and Hanen More Than Words, focus on teaching parents how to help their children.

Programs that use cognitive behavioral therapy help children manage anxiety. Coping Cat and Facing Your Fears are examples of this type of program.

Social skills programs address social skills, attention, and play. Programs such as Skillstreaming help older children with their social skills. Programs such as Joint Attention Symbolic Play Engagement and Regulation (JASPER) aim to help younger children with issues such as trouble with cooperative play.

The behavior programs in your area may be based on these or other models. However, they might be called by different names.

Do they help?

- Early intensive behavioral interventions that focus on helping children with their overall development may improve a young child's reasoning and communication skills. Research is not clear about whether they improve social skills, daily living skills, or the severity of ASD symptoms.
- Programs that focus on teaching parents how to help their children show promise, but researchers do not yet know if they work.
- Cognitive behavioral therapy reduces anxiety in some older children with ASD who do not have other developmental delays and have average reasoning and language skills.
- Social skills programs may help school-age children without other developmental or language delays for short periods of time. More research is needed to know whether children remember and use these skills after the programs end.
- Programs that address how children play may improve children's social interactions, but more research is needed to know for sure.

What are the costs?

The costs of behavior programs vary by State. Providers have different fees. Insurance may not cover some costs. You should check with your insurance plan to find out about coverage. Other assistance may be available. Ask your doctor.

What else should I think about?

Because of the amount of time involved, you may need to change your family's schedule or routine to participate in some programs.



Education and learning programs

These programs are offered in schools or other learning centers. They focus on learning and reasoning skills and “whole life” approaches. Schools may have different names for their programs, but many of these programs are based on the Treatment and Education of Autistic and Communication related handicapped CHildren (TEACCH) approach. Programs like TEACCH use visual tools and arrange the classroom in ways that are easier to manage for a child with ASD. Other programs are classroom- or center-based and use “applied behavior analysis” (commonly known as ABA) strategies like positive reinforcement.



Do they help?

- Some children in the TEACCH program showed improvement in motor skills (the ability to walk, run, hold items, or sit up straight), eye-hand coordination, and thinking and reasoning. There were not enough studies for researchers to say for sure, however, whether TEACCH was effective.
- Other education programs have not been studied enough to know if they work.

What are the costs?

Usually, these services are included in the cost of the school or learning center, so there may not be any other costs to you if you are a resident of the school district or community.

What else should I think about?

Your school district or learning center may have other names for these educational approaches, so you may want to ask about the exact types of strategies they use. Schools or other public agencies may be able to help pay for these programs if there are costs.

Medications

What medicines are used to treat ASD symptoms?



- Antipsychotics:
 - Risperidone (brand name: Risperdal®).
 - Aripiprazole (brand name: Abilify®).
- Serotonin-reuptake inhibitors or “SRIs” (antidepressants).
 - Examples include Prozac®, Sarafem®, Celexa®, and Cipramil®.
- Stimulants and other hyperactivity medicines.
 - Examples include Ritalin®, Adderall®, and Tenex®.
- Secretin. This medicine is used for digestion problems but some researchers thought it might help children with ASD symptoms as well.
- Chelation. This therapy uses substances to remove heavy metals from the body, which some people think causes autism.

Do they help?

- Research found that two antipsychotic drugs – risperidone (Risperdal®) and aripiprazole (Abilify®) – can help reduce emotional distress, aggression, hyperactivity, and self-injury. Many people who take risperidone and aripiprazole report side effects such as weight gain, sleepiness, tremors, and abnormal movements. Because of these side effects, these medicines may be best only for children who have more severe symptoms or have symptoms that might increase their risk of hurting themselves.
- SRIs and a hyperactivity medicine called methylphenidate (Ritalin®) have not been studied enough to know if they help treat ASD symptoms.
- Research showed that secretin is not effective in improving autistic symptoms.

- According to the U. S. Food and Drug Administration, there are serious safety issues associated with chelation products. Even when used under the care of a doctor, these products can cause serious harm, including dehydration, kidney failure, and death. Research does not support the use of chelation for ASD.

What are the costs?

The cost to you for each type of medicine will depend on your health insurance, the amount (dose) your child needs to take, and whether a generic form of the medicine is available.



Other treatments and therapies

You may have heard or read of other types of treatments or therapies that have been used for children with ASD, such as:

- Speech and language therapy.
- Music therapy.
- Occupational therapy.
- Acupuncture.
- Vitamins and mineral supplements.
- Massage therapy.
- The Picture Exchange Communication System.
- Responsive Prelinguistic Milieu Teaching.
- Neurofeedback.
- Sleep education and training.



Do they help?

These other therapies have not been studied enough to know if they help or have any side effects. This does not mean that they do not work or are not safe. It just means that researchers do not have enough information to know for sure.

What else should I think about?

Because little is known about how well these treatments or therapies work, talking about them with your doctor, other health care or education professionals, your family, and other people that you trust may help you decide whether to try them.

Why is there so little known about ASD and these treatments?

The research reviewed for this guide showed that some treatments can make specific improvements in the way a child thinks or acts. But researchers do not have enough information to know whether one type of treatment works better than any other. For most treatments, researchers also do not know which treatments will work best for specific children. For example, research does not show whether a program usually works best for older or younger children, or for children with severe or less severe ASD.

This does not mean that a treatment, therapy, or program will not be helpful for your child. It only means that researchers do not have enough information to say so with strong confidence.

Researchers are still studying these treatments and therapies. Check with your doctor or a support group to find out about new research on the programs and treatments in this guide and about new options.



Making a Decision

There are many things for you to consider when choosing therapies or programs for your child. There are many people you should talk to, including your doctor, social worker, school administrator, and health insurance representative. Here are some questions to ask:

What plan is best for my child?

- Do you think an early intensive intervention would help my child?
- What other types of programs might be helpful?
- Do you think my child would benefit from taking medicine?

What is available in my community?

- Are there any early intensive intervention programs in this community?
- Do the schools in this district have programs for children with ASD?
- What support groups are available?

What are the costs?

- How much will it cost for us to participate in these programs?
- Is help available from the schools or other public agencies?
- Does my health insurance plan cover any costs?

What changes to our work schedules and life will we need to make?

- How much time does each option take?
- What are ways that other families have fit these programs into their lives?
- What else can we do to help our child?

Which medicine, if any, is best for my child?

- What symptoms will the medicines help?
- How soon should I see changes in my child's symptoms?
- What are the warning signs that my child may be having a harmful side effect?
- What else is available if my child needs different medicine?



Source

The information in this guide comes from the reports, *Comparative Effectiveness of Therapies for Children With Autism Spectrum Disorders* and *Therapies for Children With Autism Spectrum Disorder: Behavioral Interventions Update*. The reports were produced by the Vanderbilt Evidence-based Practice Center with funds from the Agency for Healthcare Research and Quality (AHRQ). For a copy of the reports, or for more information about AHRQ and the Effective Health Care Program, go to www.effectivehealthcare.ahrq.gov/autism1.cfm.

This summary guide was prepared by the John M. Eisenberg Center for Clinical Decisions and Communications Science at Baylor College of Medicine, Houston, TX. It was reviewed by parents and caregivers of children with ASD. It was updated in 2014 by researchers at AHRQ.

