



# Effective Health Care

## Skin-to-Skin Contact for Newborns

### Nomination Summary Document

#### Results of Topic Selection Process & Next Steps

- While a systematic review on this topic is feasible, *Skin-to-Skin Contact for Newborns* will not go forward for refinement as a systematic review due to programmatic resource constraints.

#### Topic Description

**Nominator(s):** Two health care professional associations

**Nomination Summary:** The nominators are interested in examining the evidence supporting skin-to-skin contact at birth or during infant hospitalization to promote the physiologic stability, maternal-infant attachment, breastfeeding, the establishment of the newborn's microbiome, as well as to decrease morbidity outcomes.

**Key Question #1:** What are the benefits and harms of immediate or early postnatal skin-to-skin contact for healthy, full-term newborn infants?

**Staff-Generated PICO(T)**

**Population(s):** Healthy, full-term infants and their mothers

**Intervention(s):** Immediate or early postnatal skin-to-skin care between mother and newborn infant

**Comparator(s):** Usual care

**Outcome(s):**

For the newborn infant: Crying (discomfort); rate of infection; growth; cardiac stability; thermic stability; successful breastfeeding; re-hospitalization rate; microbiome development; procedural pain management; morbidity

For the mother: Postpartum depression; successful breastfeeding; maternal-newborn attachment; quality of life (QoL)

**Timing:** Immediately after birth for up to 60 minutes

**Key Question #2:** What are the benefits and harms of skin-to-skin care for preterm or critical care newborn infants during their hospitalization?

**Staff-Generated PICO(T)**

**Population(s):** Preterm or critical care infants and their mothers

**Intervention(s):** Skin-to-skin care (a key component of Kangaroo mother care [KMC] or Kangaroo care [KC]) between mother and newborn infant

**Comparator(s):** Usual care

**Outcome(s):**

For the newborn infant: Crying (discomfort); rate of infection; growth; cardiac stability; thermic stability; successful breastfeeding; re-hospitalization rate; microbiome development; procedural pain management; neurodevelopment; hospital length of stay;

morbidity; mortality

For the mother: Postpartum depression; successful breastfeeding; maternal-newborn attachment; QoL

**Timing:** Regularly, for the duration of the infant's hospitalization

**Key Questions  
from Nominator:**

- What is the evidence supporting advantages of SSC for the term, preterm and vulnerable newborn? For the mother?
- Is exclusive breastfeeding at hospital discharge more likely when newborns are placed skin-to-skin?
- Does the newborn more rapidly establish beneficial microbial flora in the first weeks and months of life when there was skin-to-skin at birth and during the early days of life?

These questions were consolidated and revised, resulting in the following evidence questions:

1. What are the benefits and harms of immediate or early postnatal skin-to-skin contact for healthy, full-term newborn infants?
2. What are the benefits and harms of skin-to-skin care for preterm or critical care newborn infants during their hospitalization?

## Considerations

- In 2013, almost 4 million babies were born in the US, of which 11.39% were preterm, and 8.0% had low birth weight.<sup>1</sup> Preterm birth is the leading cause of infant death in the US, accounting for over a third of all infant deaths.
- Skin-to-skin contact (SSC) is defined as placing the newborn in direct skin-to-skin contact with the mother. This may take place immediately after birth when the newborn remains in skin-to-skin contact without interruption for to the first 60 minutes of life. Skin-to-skin care, also known as kangaroo care (KC), is the placement of sick or vulnerable newborn (preterm or sick full-term infants) on the skin of their mothers for long periods during the infant hospitalization.
- KC, which includes SSC, was originally developed in the 1970s to supplement the inadequate care for preterm, low birthweight and critical care infants in developing countries where incubators and other resources were often unavailable. Based on the observed benefits of SSC/KC in these developing countries, in more recent years, SSC/KC has become a more standard practice for premature infants or low birthweight infants in developed countries. One study found that SSC/KC is implemented in more than 82% of neonatal intensive care units (NICUs) in the US.
- Full-term newborns may nurse more effectively after SSC compared to newborns immediately separated from their mothers after birth. Infants may also have improved thermic stability and avoid hypothermia through the regulation the mother's temperature provides on contact. Infant-maternal attachment following SSC may also be more developed through odor recognition and response.
- It has been observed that during SSC/KC, preterm newborns often achieve improved cardiorespiratory and temperature stability. It has also been hypothesized that SSC/KC may increase sleep time, including time spent in quiet sleep. Following discharge, similar benefits in neurobehavior have been observed and may have an effect on long-term development. SSC/KC has also been associated with

---

<sup>1</sup> Martin J, Hamilton B, Osterman M, Curtin S, Mathews T. Births: Final Data for 2013. National Vital Statistics Reports, Vol. 64, No. 1, January 15, 2015.

longer duration of breastfeeding, higher volumes of milk expressed, higher exclusive breastfeeding rates and higher percentage of breastfeeding when preterm infants are discharged from hospital. Other hypothesized benefits for preterm infants include decreased incidence of nosocomial infection. SSC/KC has also been hypothesized to reduce physiological and behavioral responses to pain among preterm infants.

- Another potential benefit for SSC is infant development of their microbiome following birth. Microbiota are the microorganisms that cover the skin or intestines and contribute to immunological health or digestive health. Emerging theories indicate that SSC may contribute to infant microbiome development through immediate contact with maternal microbiota.
- Although a scan of the literature identified relevant systematic reviews and evidence-based guidelines on SSC/KC, these sources focused on some but not all outcomes in the nomination. We did not identify a systematic review that summarized all the outcomes of interest. A scan of the most recent literature yielded a number of new studies that could be included in a comprehensive (in terms of outcomes) AHRQ systematic review of the benefits of SSC/KC immediately after birth for healthy full term infants and during hospitalization following birth for preterm and/or critical care infants.