

# The Power of Touch: Benefits of Infant Massage for Infants and Their Parents

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*The National Perinatal Association (NPA) is an interdisciplinary organization that strives to be a leading voice for perinatal care in the United States. Our diverse membership is comprised of healthcare providers, parents & caregivers, educators, and service providers, all driven by their desire to give voice to and support babies and families at risk across the country.*

*Members of the NPA write a regular peer-reviewed column in Neonatology Today.*



***“Infant massage has been performed for centuries across many societies worldwide, where the practice is fully integrated into postpartum care and passed down intergenerationally from mother to mother.”***

Infant massage has been performed for centuries across many societies worldwide, where the practice is fully integrated into postpartum care and passed down intergenerationally from mother to mother. In non-Western countries such as India, Nigeria, and Nepal, infant massage is performed daily beginning in the infant's first days of life. In stark contrast to these societies, Sharon Heller states in her book, *The Vital Touch*, “Here in the United States, which is a low-touch society, mothers and babies are apart most of the day, a fact that ranks our infants among the least held on this earth.” (1) Fortunately, since the 1970s, the importance of touch for infants has been gaining recognition in the United States, albeit slowly. A growing body of research has documented many benefits of infant massage for both infants and parents. As a result, infant massage is an emerging practice in the United States that has become a specialty within the field of massage therapy and is conducted by other professionals from varied disciplines who care for children and families (e.g., clinical psychologists, physical therapists, occupational therapists, nurses, child life specialists). These professionals have obtained certified training in infant massage and teach the massage skills to the infant's parents and conduct the massage themselves.

Infant massage is the process of using specialized techniques to rub the soft tissues of the infant's body in a smooth, rhythmic manner with moderate, intermittent pressure and varying speeds. (2,3) The typical strokes taught by certified infant massage instructors are a combination of techniques from the East Indian and Swedish traditions, as well as reflexology and conditioned relaxation. (2) Reinforcement of the parent-infant attachment is strongly emphasized when teaching infant massage. (2) Positive behavioral reinforcements, such as vocalizations (e.g., singing, humming, talking), smiling, and eye-to-eye contact, are considered critical components that help strengthen parent-infant attachment. (2) Additionally, the use of unscented organic oils (e.g., apricot, grape seed) is encouraged to maximize the massage impact and enable infants to recognize their parents' scent (as opposed to masking caregiver scent with added fragrances), further strengthening parent-infant attachment. (2,4)

The optimal time for parents to conduct infant massage is when the infant is in

a quiet, alert state, meaning the infant is attentive but not physically active. (5) Infant massage is not something done *to* an infant; instead, it is an activity done *with* an infant. As such, the crucial first step of the massage is to cradle the infant's head in ones' hands and ask for permission while making eye contact. (2) If the infant's behavioral cues suggest that it is okay to continue (e.g., eye-to-eye contact, smiling, cooing, babbling, reaching toward caregiver), strokes are typically conducted in the following sequence: legs and feet, stomach, chest, arms, and hands, back, and face. (2) Although this is the sequence taught by professionals, parents can and should, of course, modify as needed to create a personalized experience for their infants based on their likes, dislikes, and needs. Massages typically last 10-20 minutes, with less time spent on preterm infants and newborns. (2) The art of massage requires that the provider be flexible and attentive, modifying and shortening the massage as needed based on signs from the infant of overstimulation or disengagement (e.g., gaze aversion, crying, turning away, arching body, pushing away). In other words, the massage should only last as long as the infant is enjoying the process. The massage can also last longer than 20 minutes if the infant shows signs of enjoyment and engagement.

## Benefits of Massage for Infants:

The research literature suggests a wide range of physiological, psychological, and social benefits of massage for healthy full-term and high-risk infants that generally fall into one of four categories: providing stimulation, promoting relaxation, improving circulation, and enhancing bonding/attachment. The key benefits of massage for healthy full-term infants are highlighted below.

### Stimulation:

- Promotes growth, including increased weight gain, body length, head circumference, chest circumference, arm circumference, and leg circumference (3,6-10)
- Enhances cognitive performance (e.g., improves orientation, increases alertness, improves attention) (3,10,11)
- Improves mental-motor development (e.g., lingual-cognitive, fine motor, gross motor, and social

skills) (9,12)

- Engages pre-language skills (e.g., eye contact, listening, cooing, gestures, facial expressions, imitation)

#### **Relaxation:**

- Reduces stress neurotransmitters/hormones (norepinephrine, epinephrine, and cortisol) (4,10)
- Enhances coordination of the circadian system (13)
- Improves sleep, including reducing sleep onset latency, reducing the frequency of nighttime awakenings, reducing agitated behavior during sleep, and increasing total sleep time (3,14-18)
- Increases use of self-comfort regulatory behaviors (19)
- Improves mood (e.g., reduces colic symptoms and time spent crying and fussing) (9,18)

#### **Circulation:**

- Lowers transcutaneous bilirubin levels (9,20)
- Promotes digestion and elimination (e.g., can relieve trapped gas, constipation, and diarrhea) (2)

#### **Bonding and Attachment:**

- Provides quality, intimate one-on-one time with the parent
- Increases salivary oxytocin level in mothers and infants with normal bonding (21)
- Promotes healthy attachment/bonding with parent (e.g., increases infant's attentiveness, liveliness, and happiness; interactions are smoother, more fun, mutually satisfying, more exciting, and more engaging) (17,21-23)

#### **Benefits of Infant Massage for Parents:**

Studies suggest that parents also significantly benefit physiologically, psychologically, and socially from massaging their infants. Below is a brief list of these research findings.

#### **Sleep:**

- Improves maternal sleep quality, including reducing sleep onset latency and increasing total sleep time (15,16)
- Improves maternal perceptions of infant's morning mood and sleep (i.e., reduced sleep onset latency, fewer nighttime awakenings, increased total sleep time, less difficulty falling asleep and staying asleep, improved sleep quality) (15,16)

#### **Parenting Skills and Confidence:**

- Increases mothers' confidence in managing their infants' sleep when massage is incorporated into the bedtime routine (15,16)
- Promotes positive perceptions of infant's temperament (24)
- Promotes positive adaptation to motherhood (25)
- Increases confidence in parenting abilities (25)
- Promotes positive attitudes towards motherhood (25)

#### **Mental Health:**

- Improves maternal daytime mood (15)
- Reduces depressive symptoms (24, 26)

- Increases self-esteem and sense of empowerment (27)
- Reduces parenting stress (26)

#### **Bonding and Attachment:**

- Provides quality, intimate one-on-one time with the infant
- Promotes stronger, closer, and more positive relationships with the infant (25)
- Promotes healthy interactions with the infant (e.g., mothers increase warmth and decrease intrusiveness towards the infant; interactions are smoother, more fun, mutually satisfying, more exciting, and more engaging) (22,24,28)
- Increases support from the mother's mother and husband (25)

#### **Possible Mechanisms of Change:**

Some of the mechanisms by which infant massage might promote benefits for infants and their parents have been explored. It has been speculated that massage stimulates pressure receptors leading to increased vagal activity. (3,29) The vagal activation then stimulates gastric motility and the secretion of food-absorption hormones (i.e., insulin and gastrin), and thereby promote infant digestion and growth (i.e., weight gain, body length, head circumference, chest circumference, arm circumference, and leg circumference). (3,29) massage may also reduce infant stress by increasing parasympathetic activity, which is a relaxed state characterized by slower heart rate and lower cortisol levels, which may improve sleep. (4) One study reported that the tactile stimulation of massage releases melatonin which adjusts the circadian system and improves sleep. (13) Studies using animal models suggest that massage may stimulate synaptogenesis and neuronal survival in the hippocampus, improving cognitive development (e.g., greater spatial learning and memory performance). (30,31) Hypothesized mechanisms for improvements in attachment/bonding and interaction include relaxation of parent and infant, increased confidence in parenting abilities, improvement in parent's understanding of infant's cues, and the release of oxytocin in both parent and infant. (32)

#### **Limitations of the Current Research Literature:**

Research findings in the current literature on the benefits of infant massage for healthy full-term infants and their parents are promising. However, it is important to note that these findings are based on few studies, as most research on infant massage has focused on premature infants. Additionally, most studies on full-term infants are of poor quality due to methodological inadequacies and failure to address the underlying mechanisms by which observed outcomes might be achieved. (9) It is also important to note that most studies include mothers but do not include fathers or other primary or secondary caregivers (e.g., grandparents).

#### **Conclusion:**

The power of touch is profound. Infant massage can lead to a wide range of physiological, psychological, and social benefits for infants and their parents. It is an effective, inexpensive, easy-to-learn, natural, health-promoting intervention that should be utilized as a part of the developmental care of all healthy full-term infants. Yet, in the United States, infant massage remains largely undiscovered, undervalued and/or underutilized by families and pediatric and maternal health professionals. It is time to change our ways, to pick up the threads of the ancient wisdom of non-western cultures, and weave them into the fabric of our standard of care practices for infants and their parents. Adaptation to parenthood and infants' early and long-term development deserve as much forethought as pregnancy and birth. Infant massage is a powerful tool that can help form a harmonious relationship be-

tween infants and their parents while providing parents with an easy, effective way to enhance physiological, psychological, and social well-being. To ensure optimal recommendations and practices, more methodologically rigorous research, preferably in the form of randomized controlled trials, is needed to understand better the benefits of infant massage for healthy full-term infants and their parents.

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