

Massage Therapy In Infants : An Evidence-Based Review

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Massage therapy has been practiced worldwide for centuries. Infant massage therapy has its origin in China in 2nd century BC. New-born massage has been in practice in India and many other countries since ancient days. This traditional art is now becoming popular as a therapy which can be practiced both by parents as well as medical professionals like paediatricians and nurses.

Definition: Massage therapy is the manipulation of the body's soft tissues for the purpose of normalising those tissues. Massage is a manual technique that includes applying movement and fixed pressure to the body. Massage therapy affects the whole body.

- ♦ Musculo-skeletal System: decreases muscular tension or flaccidity
- ♦ Circulatory system: increases blood flow
- ♦ Lymphatic system: increases flow of lymph
- ♦ Nervous system: stimulates or sedates
- ♦ Skin: enhances tissue healing

Benefits of Infant Massage Therapy

Massaged infants gain more weight and have shorter hospital stays: Vickers et al (2004) comprehensively reviewed all available randomised trials that had studied massage in low birth-weight or pre-term infants. They included studies of infants less than 37 weeks gestational age or those weighing less than 2500 gm at birth. In the studies, the infants were randomly assigned to either a treatment group, which received some form of systematic tactile stimulation by human hands, or a control group which did not. After analysing all of the eligible studies, the authors came to the conclusion that massage interventions improved daily weight gain by an average of 5.1 gm and massage interventions decreased the length of hospital stay by 4.5 days as well.

Massaged infants better utilise the calories they consume: Although massaged infants consume the same amount as their non-massaged counterparts, they still gain more weight.

Massaged infants seem to spend more time in active alert states: The sleep wake pattern is stabilised by massage therapy. Kelmanson, in a study showed improved sleep with less awakening and more active phase in

day time among infants below 36 weeks of gestation subjected to massage till 8 months of age. This may enhance development and speed adjustment to the external environment. Infants subjected to massage also show improved sensory awareness.

Massage helps in improved infant behaviour: Scafidi et al (1986) showed more mature habituation, orientation, motor, and range of behaviour (as measured by the Brazelton scale) in massaged infants compared to the control group. Pre-term infants were less irritated, cried less and showed less stress in behaviour after receiving pressure therapy for 5 days. Infants with oil massage also demonstrated less stress in behaviour.

Massage can help bond parents and infants: Comfortable handling of small infants is an essential skill for parents. Parents who take more responsibility for the infant's care while in the hospital have increased confidence and awareness which helps the transition once the infant is brought home. With regular contact, parents know what is normal for their baby. Studies have shown that massage by a parent is just as effective as massage by a trained professional.

Massage has local effects on skin: Massaging with oil may improve thermo regulation by reducing heat loss by convection. Increase in skin temperature among pre-term babies was seen after giving massage therapy.

Massage is soothing to infants and care givers: Massage may help infants cope better with stressful situations such as painful procedures in the hospital. It may even help them to have less stress when they are older. Giving massage helps parents release stress as well.

How to do Infant Massage

Although there are many types of massage, any massage done on neonates must be very gentle. A typical type of massage appropriate for neonates consists of gentle, slow stroking over each part of the body. This is sometimes referred to as tactile stimulation.

Many studies pair this with passive flexion and extension of the limbs, referred to as kinesthetic stimulation. Some studies use both of these types of stimulation. These methods are described as follows.

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A typical 15 minutes of massage given by Field

- ◆ First 5 minutes: Tactile stimulation
- ◆ Second 5 minutes: Kinesthetic stimulation
- ◆ Third 5 minutes: Tactile stimulation

Tactile stimulation

- ◆ Make sure that hands are clean and warm before beginning.
- ◆ Place the infant in the prone position (on the stomach) with head turned to the side.
- ◆ Stroke each area of the body with moderate pressure using the flats of the fingers of both hands.
- ◆ Each area gets stroked for one minute. This is broken down into 10-12 strokes, each lasting for about 5-6 seconds.
- ◆ Using this method, stroke each of the following body areas:
 - From the top of the head, down the back of the head to the neck and back to the top.
 - From the back of the neck across the shoulders and back to the neck.
 - From the upper back down to the buttocks and back up the back. Press on either side, not directly on the spine.
 - From the hips to the feet and back to the thighs.
 - From the shoulders to the hands and back to the shoulders.

Kinesthetic stimulation

- ◆ Make sure hands are clean and warm.
- ◆ Place infant in the supine position (on the back).
- ◆ Move each area of the body for one minute. This is divided into 6 flexion/extension movements lasting about 10 seconds each.
- ◆ Move each of the following body parts in a slow bicycling-like motion:
 - Left arm
 - Right arm
 - Left leg
 - Right leg
 - Both legs

The massage can be given by both mother or trained professionals. Ferber et al showed that mothers were able to achieve the same beneficial effects as that of trained professionals, allowing cost-effective application of massage therapy in pre-term infants. A conducive environment with soft light, warm temperature, low noise level is important for massage therapy. It should be applied between meals preferably 45 min to 1 hour after feed to avoid chances of regurgitation. Firm but moderate pressure is more effective for weight gain.

Infants with the following conditions may not be able to tolerate massage:

- ◆ Congenital malformations
- ◆ Micropremies or very low birth weight infants
- ◆ Cardiac abnormalities
- ◆ Use of a ventilator or CPAP machine
- ◆ Recent surgery
- ◆ Intrauterine drug exposure
- ◆ Serious infections
- ◆ Frequent drug dosing
- ◆ Central line
- ◆ Apnea and bradycardia
- ◆ Umbilical lines
- ◆ Necrotising enterocolitis
- ◆ Intravenous feedings
- ◆ Phototherapy for bilirubin
- ◆ Use of supplemental oxygen
- ◆ Hydrocephalus
- ◆ Continuous nasogastric feedings
- ◆ Care giver with skin rash or open lesion
- ◆ Skin rashes or lesions
- ◆ Excessive regurgitation

Conclusion

Massage therapy is a safe, inexpensive treatment modality for healthy, pre-term newborns. When used in conjunction with traditional medicine, it may offer benefits to growth and development for newborns, and lead to shorter hospital stays in the transitional care nursery. It is not only pre-term infants who may benefit from massage - full-term infants may benefit too.

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