

Parent Coaching of Infant Massage to Promote Bonding and Infant Development

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The Power of Touch

- The need for touch is one of the most primal needs we experience
- How does it feel to be embraced with a hug?
- Emotional development is closely linked to the sense of touch
- Positive touch releases endorphins in the brain which then teaches our brain to react positively with future touch experiences
- Skin-to-skin contact in even in the first hour after birth has been shown to help regulate newborns' temperature, heart rate, and breathing, and decreases crying



The Power of Touch

- How do you think these people are experiencing touch?
- The neurons that fire together, wire together
 - Negative touch experiences will re-wire the brain for what to expect in future touch experiences
- Touch deprivation is correlated with negative health outcomes such as anxiety, depression, and immune system disorders.



Neonatal Senses

- From birth a baby is receiving constant sensory input and their body is beginning to perceive sensory information
- **Touch:** Touch is one of the most advanced senses present at birth and is the first to develop at around 8 weeks GA
 - To touch the skin is to touch the brain
 - Skin development
- **Vision:** last sense to develop around 26 weeks
- **Auditory:** Structures of the ear are developed at 24 weeks GA; can hear muffled sounds through the amniotic sac
- **Vestibular:** develops early on in utero by about 5 months GA; inside the womb floating in amniotic fluid and mom walking around helps to develop this sense
- **Pain:** has been described as the 5th vital sign
 - There is more research pointing to neonates being able to experience pain from 20-22 weeks gestational age



Birth experience for Baby-Full Term



- Touch: Immediately placed on mom skin to skin
 - Epidermal maturation at 34 weeks GA
 - Swaddled with arms brought together towards face inside the blanket
 - A full-term baby with typical development will display physiological flexion from birth which is promoted with techniques such as swaddling and containment
- Vision: has developed in utero; can tolerate intentional visual stimulation; lights may be dimmed in room if needed but will be able to adjust to bright lights right after birth
- Vestibular: Able to be rocked or swayed when upset and carried around in someone's arms if needed promoting the vestibular system
 - Containment-setting boundaries for baby which helps them learn where they are in space similar to the feeling of inside the womb
- Auditory: quiet room; can continue to hear mom's heartbeat when on her chest
- Pain: may have a heel prick after birth while skin to skin with mom but little other painful procedures happening after birth

30% of brain growth happens the last 4-6 weeks of gestation

Birth Experience for Baby-Premature/Traumatic Birth



- Touch: Taken from womb and placed under the warmers or taken to a hard table for procedure
 - Skin is not fully developed-may need to have tape taken off and diaper changes performed
 - IV placement; intubation; O₂ cannula; heart monitor leads on skin
- Vision: will be very sensitive to light before 26 weeks GA
 - lights more likely to need to be bright for procedures and directly on baby
 - does not need intentional visual stimulation
- Auditory: Loud machines beeping; loud voices
- Vestibular: A flexed and contained positioning is not priority if the baby's life is in danger
 - Potential for little movement depending on medical need; depending on the NICU baby may spend a lot of time on their back not helping the vestibular system develop
- Pain: negative experiences required for survival may be happening numerous times throughout the day

Potential long term effects of negative sensory experiences

Lack of flexed positioning:

- Difficulty bringing hands to midline which will make bilateral coordination skills a challenge as they get older
- Challenges crawling in all fours
- Difficulty rolling over
- Vestibular insecurity: difficulty knowing where they are in space which could be due to lack of containment positionings from birth which can affect sitting, walking, movement

Tactile defensiveness:

- The American Academy of Pediatrics has stated that experiencing pain and negative touch in the NICU can cause “physiologic instability, altered brain development, and abnormal neurodevelopment, somatosensory, and stress response systems, which can persist into childhood.”

Oral aversion:

- Breastfeeding/bottle feeding can be challenging to a baby who has been intubated which can lead to sensory aversions with food or cups as the age due to negative experiences

Prolonged stress on a baby has been shown to increase the risk for various health problems as children grow into adults such as: cardiovascular disease, diabetes and mental health

The brain of an infant is plastic and can organize its neuronal pathways in response to the environment so positive influences can overcome some of the negative exposures the brain may have experienced in the first weeks of life

THE NICU JOURNEY: A CAREGIVER'S EXPERIENCE



Before the NICU...



Leading up to childbirth:

- ❖ Difficulty getting pregnant
- ❖ Medical complications during pregnancy
- ❖ Prior loss of a child
- ❖ Pre-existing mental health condition

Day of delivery:

- ❖ Traumatic birth
- ❖ Premature birth and medical complications
 - expected or unexpected
- ❖ Medical procedures
- ❖ Separation from baby



Trauma in the NICU – A roller coaster of emotions

- Loss of connection and bonding
- Helplessness
- Personal medical needs
- Confusion, prolonged uncertainty
- Feeling overwhelmed
- Exhaustion
- Guilt
- Self-blame and feelings of failure
- Repeated trauma and stress
- Additional stressors, i.e., support, financial, COVID



A Caregiver's Mental Health

○ Depression and Postpartum

- Up to 39-63% of NICU mothers suffer from depression (Hynan, 2015)
- Maternal depression has been identified as a risk factor for poor mother-infant interactions

○ Anxiety and Fear

- 20-30% or higher of ALL NICU parents experience a diagnosable mental disorder (Hynan, 2015)

○ PTSD

- 9-53% of NICU mothers scored above threshold on PTSD questionnaires (Hynan, 2015)
- Can onset later and longer (Klawetter, 2022)

○ Cognitive distortions

- Mental Filter
- Jumping to Conclusions
- Should Statements



Support that May Be Given in the NICU

- Connection with my baby through **skin to skin/ Kangaroo care**
(Holditch-Davis, 2014)
- Ways to help my baby through **containment, swaddled bathing, massage**
- **Counseling and peer support**

→ Not all babies can tolerate these interventions due to medical challenges. Even if a parent is supported with education in the NICU they may have difficulty absorbing this new information under stress



Going home...another rollercoaster

- Relief and joy
- The weight of responsibility
- Onset of mental health challenges
- Fear of an emergency
- Feelings of inadequacy and insecurity
- Lack of support
- Finding life balance
- Difficulty helping baby calm
- Ongoing stress and problem-solving challenges



How can *we* help these caregivers?

- Keep in mind their journey
- Listen and observe
- Give resources for additional support
- Provide helpful knowledge and coaching
- Share ways to calm, position and bond with baby



Learn more...

- <https://nicuparentnetwork.org/>
- <https://www.marchofdimes.org/nicufamilysupport/index.aspx>
- <https://handtohold.org/>
- Can't Breathe: A Memoir by Laesa Faith Kim



How can we help families?
Knowledge=Power

Educate

Educate families on understanding Infant states and reading infant cues

Increase

Increase family awareness of sensory stimuli in the environment and their child's response to it.

Guide

Guide parents in providing positive touch through massage and promoting their child's development

Be a Keen Observer

- Observe the parent and infant's states
 - Observe the sensory environment of the home
 - Noise level; lighting; temperature;
 - Observe the infant's response to swaddling; movement; positioning
-
- Guide parents in changing one thing at a time and noticing their baby's response.

Infant states for Learning

Drowsy Alert



Awake Alert



Reading Your Baby's Cues

Sources: Brazelton, TB (1973) Neonatal Behavioral Assessment Scale. Clinics in Developmental Medicine, No. 50. JP Lippincott, Philadelphia
Kelly, Jean F. PhD; Zuckerman, Tracy PsyD; Rosenblatt, Shira PhD. Promoting First Relationships: A Relationship-Focused Early Intervention Approach. Infants & Young Children. 2008; 21(4): 285-295.

Infant States

Deep Sleep

Light Sleep

Drowsy

Quiet Alert or Awake/Alert

Irritable

Crying

Infant Disengagement Cues

- Avoidance/ turns or looks away
- Pushes away or arches back
- Yawns or falls asleep
- Coughs
- Grimaces
- Extends fingers w stiff hand
- Cries

Infant stress cues

Yawning



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Closed eyes; Yawning



Signs of Stress

Finger Splay



Gaze avoidance; finger splay; crying



Common baby stressors

Hunger

Wet/dirty diaper

Gas

Loud noises or Loud Voice

Too much visual input

Excessive movement

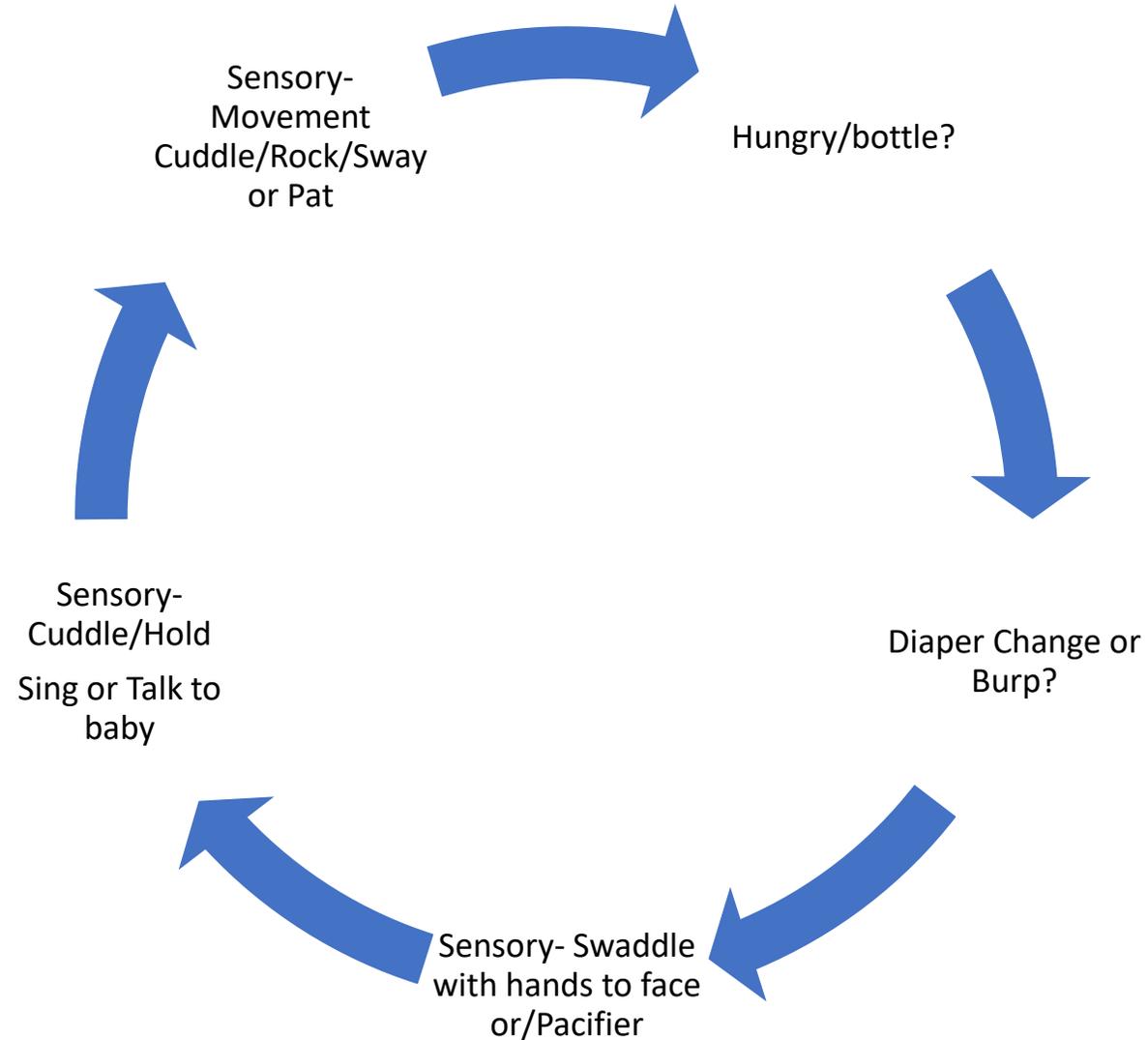
Common ways to help babies calm

- Bottle
- Pacifier
- Change Diaper
- Burp
- Swaddling- Containment – Position of flexion with boundaries
- Cuddling
- Holding & Rocking, Swaying, Patting back or bottom
- Touch & Interaction (Talking singing to your baby)
- Neonatal & Infant Massage are ways to promote positive touch

Caregivers who are under stress can find problem solving difficult

Its okay to help them talk through and identify strategies!

Trial and Error Problem Solving Loop



How does Neonatal or Infant Massage fit?

- Practiced techniques that give parents a strategy to try.
- Most techniques promote a face to face or skin to skin position of baby to parent.
- Can be individualized to meet the needs of each child.
- Massage can be relaxing/calming or alerting.
- Videos of infant massage are readily available on Youtube for parents to view.
- Becoming trained in Infant or Neonatal Massage can build your confidence in helping parents learn this skill. Some techniques require more understanding and skill than others.

Infant or Neonatal Massage

- Can be as simple as gentle pressure with one or two hands resting on the infant's back or chest- "Just Be & Wait"
- Your touch provides boundaries and comfort
- This is a way to let your baby know you are there without saying a word
- It promotes connection between parent and child



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Abdominal Massage can help with digestion and gas

Multiple strokes

I Love U

Hands of a Clock

Paddling

Facial /Oral Motor Massage

Can provide opportunities for sensory stimulation to mouth

Activation of muscles in the lips, cheeks and mouth

Provide relaxation around the mouth if needed

Be a preparatory step before nursing or taking a bottle

Leg and Arm Massage

- Can promote relaxation
- Can also wake up muscles and promote activation and movement and strengthening
- Promotes symmetry of movement
- Can promote sensory awareness of extremities and hands and feet
- Provide an opportunity for social interaction- face to face time with parent



Example of Infant Massage Video

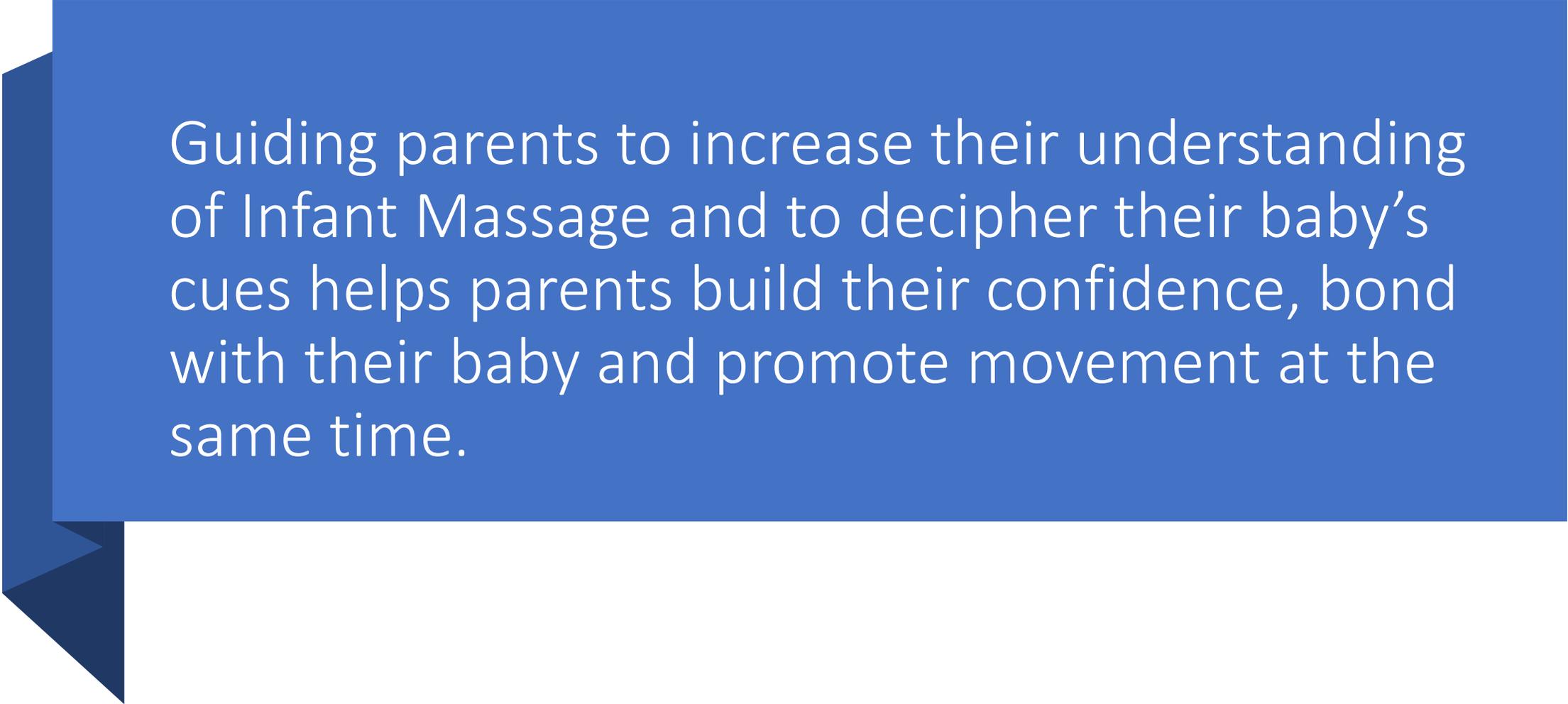
<https://www.youtube.com/watch?v=KOJVgjrRiJs>

Infant Massage USA Video on Youtube



Studies show that parents of premature babies want more information on how to help their babies after discharge

- In a review article published in September 2021 in the Journal of Early Intervention, 3 themes emerged
- Parents felt unprepared when bringing their babies home- the lack of opportunities to experience and develop their parental role then the baby was in the NICU produced doubts and insecurity in caring for their baby at home.
- Parents stated they needed more information and support related to caregiving and the development of their infants once home.
- They wanted community based early intervention professionals knowledgeable in the development of premature infants.
- (Strauss-Davis, 2021)



Guiding parents to increase their understanding of Infant Massage and to decipher their baby's cues helps parents build their confidence, bond with their baby and promote movement at the same time.

Neonatal or Infant Massage Training

Neonatal Touch & Massage Therapist Certified –
NTMTC-

<https://www.neonatalcertification.com/about-ntmc>

Infant Massage USA (CEIM) -

<https://infantmassage.info/>

Loving Touch Massage (CIMI) -

<https://lovingtouch.com/>

Babies have to learn to move

A child who has had negative and traumatic sensory experiences or who has had trauma to a portion of the brain will move in poor patterns. They may have:

- increased or decreased muscle tone
- inability to move on their own
- poor movement patterns

They will have difficulty learning the next motor skills because they are practicing those inefficient movements patterns.

We need to set them up with the best position so they can learn to move well, to move fluidly, efficiently, and progress to each next developmental skill!

Massage helps prepare the child for Play

Positioning helps prepare the child for Play

- **Position** for regulation
- **Position** to encourage development of vision and strength
- **Position** to encourage exploration and movement

Play in different positions

- **Supine**
- **Prone**
- **Side lying**
 - Each position provides different surface contact, different sensory experiences for vision, tactile input, and spatial orientation.
 - Each position makes certain play movements and development easier.
 - After you have provided massage to your child in a certain position, play and build in activities for that position.

Promote
Development
and
Movement
within each
play position

Midline

Symmetry

Reciprocal Movements



Supine

Midline

Symmetry

Reciprocal Movement

Play and Move





Side lying

Midline

Symmetry

Reciprocal Movement

Play and Move





Prone

Midline

Symmetry

Reciprocal Movement

Play and Move



The really cool thing about teaching a child how to move and to play in their world correctly is that it builds new nerve pathways that can even repair old damage and lead to the best overall function in all areas of development!!



This is one of the many reasons why massage can be a beneficial tool to share with our families.



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