Infant Massage in the NICU

Purpose and Goal: CNEP # 2107

- Learn about benefits of infant massage
- Learn about using infant massage in the NICU

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Requirements for successful completion:

- Successfully complete the post-test
- Complete the evaluation form

Date

- July 2019 – July 2021
Learning Objectives

- Describe the general benefits of infant massage
- Describe potential negative effects of infant massage
- Describe at least 2 positive outcomes of NICU massage

Introduction

- Touch is the most developed sense at birth
- Every NICU infant will be routinely touched
- Some touch is considered “good” touch
  - Touch that provides support
  - Touch that provides pleasure
- Some touch is considered “bad” touch
  - Touch that causes pain
  - Touch that causes damage
- Massage is an ancient therapeutic technique
  - It can be successfully used in the NICU
  - It can provide “good” touch to infants
    - To provide NICU stress relief
    - To promote parent-infant bonding

Touch and Handling in the NICU

- Touch is necessary in the NICU
- The sense of touch is often unpleasant
  - Medical
  - Noxious
  - Negative
- Touch can also be a pleasant experience
  - Social
• Positive
• Comforting
• Studies have shown that positive touch
  • Accounts for <5% of touch in the NICU
• Adverse effects of negative touch include
  • Hypoxia
  • Bradycardia
  • Interrupted sleep and rest
  • Increased intracranial pressure
  • Poor growth and neurodevelopment
• Touch and attachment between parents and infants
  • Is delayed by an infant’s illness
    • Distress
    • Immaturity
    • Overstimulation
  • Is delayed by the NICU environment
• Massage is one type of touch that offers
  • Positive touch
  • Parent-infant bonding
• Studies have shown that infant massage
  • Reduces pain
  • Improves weight gain
  • Increases alert periods
  • Improves sleep-wake cycles
  • Improves feeding tolerance
  • Decreases length of hospitalization

The History of Infant Massage

• Massage is an ancient therapeutic technique
• It was first documented in Chinese medical literature
  • Over 4000 years ago
• There has also been documentation
  • Across cultures
  • Throughout history
• Mothers around the world massage their infants
- It is thought to facilitate bonding
- It is thought to enhance infant health
- It is thought to be essential parenting

Massage therapy can be defined as:
- A systematic application of tactile stimulation
  - Applied by a variety of techniques
- That results in stimulation of sensory receptors
  - In skin, muscles, bones and joints

Massage may include the techniques of:
- Touching
- Stroking
- Stretching
- Compression
- Passive joint movement

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**Research on the Use of Massage in the NICU**

- Infant massage was first studied in the 1980s
- There have been concerns with overstimulation
- But the positive aspects of massage
  - Can be comforting
  - Can offer “good” touch
  - Can improve outcomes
  - Can be used as tolerated
- Positive touch can overcome the separation
  - Separation from positive touch
  - Physical separation from parents
- Positive touch can mimic in utero experiences
  - Compression by uterine walls
  - Tactile stimulation by amniotic fluid
- Positive touch can support infant development
  - 13 studies showed improved weight gain
    - Massage with oil led to ↑↑ weight gain
    - Dry massage led to ↑ weight gain
• 2 studies showed decreased length of stay
  • 15 days in NICU vs 20 days
  • Greatest effect in infants 33-36 weeks
• 5 studies showed improved feeding
  • Improved gastric motility
  • Earlier attainment of full oral feeds
  • Reduced signs of feeding intolerance
• 3 studies showed improved mental development
  • On Bayley Scales of Infant Development
• 2 studies showed improved motor development
  • On Test for Infant Motor Performance
• 4 studies showed decreased signs of pain
  • To heel stick and tape removal
• 1 study showed improved NAS scores
• Positive touch can support maternal mental health
  • 2 studies showed lower maternal anxiety
  • 1 study showed decreased maternal depression
  • 1 study showed improved maternal confidence
  • 1 study showed improved maternal satisfaction
• Only a few risk factors have been documented
  • Slight heat loss
  • Brief periods of disorganization
    • Eye aversion
    • Restlessness
• Current research supports the use of infant massage

How Infant Massage Makes a Difference

• How massage makes a difference
  • Is not fully understood
• Several mechanisms are well known
• Massage stimulates the vagal nerve
  • It activates pressure receptors
• Stimulation of the vagal nerve leads to
  • Increased gastric motility
  • Release of food absorption hormones
  • Especially insulin and insulin growth factor
• It also affects neuroendocrine stress response
  • Decreased cortisol levels
• It also affects the autonomic nervous system
  • Increased serotonin levels
  • Increased secretion of catecholamines
    • Epinephrine
    • Norepinephrine
• For parents, massage gives them an active role
  • Leading to improved attachment
  • Leading to improved confidence
  • Leading to decreased stress and anxiety

**Massage Therapy Guidelines for the NICU**

• Eligibility for massage is best determined
  • On a case-by-case basis
• Eligibility guidelines include
  • Medically stable
    • Intact skin
    • No sepsis
    • Normal abdomen
    • No stimulated events
      • Apnea
      • Bradycardia
      • In last 24 hours
• >31 weeks gestation
The massage procedure includes
- Assessing infant for readiness
  - Quiet alert state
  - No sleeping infants
- Gathering oil and warming light
  - Warmed, additive free oil
    - No dye
    - No perfume
    - No preservatives
  - Use a cold pressed oil
- Options for use include
  - Almond
  - Sesame
  - Safflower
  - Grape seed
  - Apricot kernel
  - Aquaphor may also be used
  - Do not use baby or mineral oil
  - Do not use petrolatum products
- Assessing infant temperature
- Dimming overhead lighting
- Massaging in a variety of positions
  - In parents lap
  - In an incubator
  - In a radiant warmer
- Massaging with warmed oil
  - Massage each leg
  - Massage the abdomen
  - Massage each arm
  - Massage the scalp
  - Massage the back
  - Massage the chest
  - Avoid the infants face
- Avoid CRM lead area
- Using firm, slow, smooth strokes
- Flowing gently from one area to another
  - Use a smooth gentle rhythm
  - Massage each area for 1 minute
  - Use 12-16 strokes per minute
- Using hand containment as needed
  - For any signs of disorganization
- Massaging for a limit of 15 minutes
- A kinesthetic massage can be trialed as tolerated
  - Cross arms over the chest
  - Stretch arms out along the body
  - Cross the legs over the stomach
  - Stretch legs out then “bicycle”
  - Limit kinesthetic massage to 5 minutes
- The infant should be monitored closely
  - For any signs of stress
  - For any signs of overstimulation
  - Before, during, and after massage
- Discontinue massage if the infant is stressed
- Document the infants response to massage

**Specific Massage Techniques**

- All nurses should be taught
  - By a qualified massage instructor
- Nurses should teach parents and demonstrate
- Massage strokes should be firm enough to
  - Penetrate the subcutaneous tissue
  - Strokes are similar to adult massage
    - But without vigorous kneading
- Fluttery or ticklish strokes should be avoided
There are two beneficial massage strokes
- Effleurage strokes
- Pettrisage strokes

The majority of the massage will be effleurage
- It is a smooth relaxing stroke
- It stimulates circulation
- It also relaxes soft tissue
  - Muscles
  - Tendons
- It can be used on the entire body

Pettrisage is a gentle kneading stroke
- It uses the fingers and thumb
- Or the palm of the hand
- It improves muscle tone
- It improves circulation
- It is used for arms and legs

Teaching Mothers About Infant Massage
- Post-partum depression affects 1 in 8 women
  - Mothers of NICU infants are at higher risk
- Mothers struggle with the loss of a “normal” birth
- Involving mothers in their infant’s NICU care
  - Promotes mother-infant attachment
- Providing mothers a primary role to play
  - Reduces emotional distress
  - Leads to more confident parenting
- Studies have shown that providing massage
  - Changes the mothers hormone levels
  - Several hormones are released
    - Oxytocin
    - Prolactin
Endorphins

- Infant massage helps decrease NICU stress
- It can also help mothers feel confident
  - And ready to take their infant home

Resources for More Information

- Infant Massage USA
  - [https://www.infantmassageusa.org](https://www.infantmassageusa.org)
- LiddleKidz Foundation
  - [http://www.liddlekidz.com](http://www.liddlekidz.com)
- Loving Touch
  - [http://lovingtouch.com](http://lovingtouch.com)
- Neonatal Touch & Massage Certification
  - [https://www.neonatalcertification.com](https://www.neonatalcertification.com)

Summary

- Infant massage is easily implemented
  - It is noninvasive
  - It is inexpensive
  - It is easy to learn
- It has positive effects on infants and parents
- Neonatal nurses can learn massage techniques
  - Then teach parents how to do massage
  - Parent education should emphasize
    - Mindfulness
    - Gentle touch
    - Firm pressure
    - Infant tolerance
- Infant massage can begin with an infant is stable
- Several opportunities for nurses to learn are available
References


