

A NICU Cuddler Guide to Support Neuroprotection



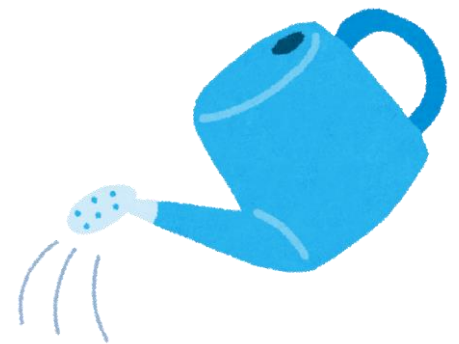
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WHAT IS NEUROPROTECTION?

The primary goal in the NICU setting

The neonate's brain is continuously making synaptic neuronal connections based upon sensory input. Neuroplasticity (ability of the brain to adapt to environmental changes) can be positive or negative based upon the infant's experiences (Altimier & Phillips, 2013). When we become aware of how each interaction affects the neonate neuronal connection, we start to shape and alter our actions to support their brain development.

Protecting sleep is very important for an infant's development. Never wake a sleeping baby for cuddling and be cautious of making noises and excessive movements that might disrupt the baby's sleep. Sleep deprivation results in a loss of neuroplasticity which has long term effects on learning, behavior, and overall brain function (Altimier & Phillips, 2013).



The Take Away:

The NICU is a place where many extraordinary things are happening, but above all we are growing baby brains! As the cuddlers, think of yourselves as the watering pot entering their world and helping them grow. During our time with them, we want to make sure we don't do too much or too little. We must modify our interactions to support their growth and help our infants bloom.

WHO IS ON THE NICU TEAM?

NEONATOLOGIST

Neonatologists are the head physician in most NICUs specializing in the medical care of newborns (AAP, 2020).

FAMILY

As the primary caregivers, families are encouraged to become active members of their baby's care—such as feeding, diaper-changing, holding, reading—which strengthens their bond (Craig et al., 2015).

NEONATAL NURSES

Different nurses with different levels of training help to run the NICU serving multiple roles; nurses provide hands-on hourly care to the infants. This includes feeding as well as changing lines, dressings and diapers (March of Dimes, 2017; Smith & Hall, 2003)

SOCIAL WORKER

Social workers help orient families and focus on providing the family with emotional support. They help families find resources, work with insurance companies, and plan for the baby's return home (Bullington, 2017; March of Dimes, 2017).

DEVELOPMENTAL THERAPISTS

Developmental neonatal therapists provide neuroprotective interventions, partner with families, and collaborate with the interdisciplinary team to promote optimal neurodevelopmental outcomes (Altimier and Phillips, 2013).

RESPIRATORY THERAPIST

Respiratory therapists provide hands-on care that helps infants with breathing difficulties associated with being born prematurely, an infection, or birth defects. They are trained to use complex medical equipment to care for infants (March of Dimes, 2016).

PHYSICAL THERAPIST (PT)

PTs focus on infant's movement through strengthening their muscles and improving coordination, to promote their ability to sit, roll over and walk (March of Dimes, 2017).

OCCUPATIONAL THERAPIST (OT)

OTs focus on a holistic approach that encompasses positioning, sensory needs, and supporting families to enhance their engagement in routines and daily activities, and discharge to home (Rabinovich, Goldenberg, & Harel, 2015).

SPEECH LANGUAGE PATHOLOGIST (SLP)

SLPs (or speech therapists) focus on infant's feeding and swallowing to promote speech, language and feeding development (March of Dimes, 2017).

CUDDLER VOLUNTEER

Cuddlers hold babies in the NICU when the parents are not present. The role of the cuddler is to provide positive touch and to reduce infant stress which is shown to have multiple positive benefits on the infant's development.

WHAT IS FAMILY CENTERED DEVELOPMENTAL CARE (FCDC)?

A family-focused approach to neonatal care that recognizes the family as a vital member of the healthcare team and should be included in decision-making regarding the plan of care. FCDC leads to multiple benefits for both the family and the baby (Craig et al., 2015).

What is a Cuddling Program?

Volunteer-based service for eligible babies in the NICU. Volunteer Cuddlers are available to hold babies during times when parents cannot (Harvard Medical School, n.d.).

Why be a Cuddler?

- Make a positive impact on the development of a baby's early life
- Learn to work alongside an interdisciplinary team
- Gain hospital experience and exposure to the NICU setting

How does Cuddling Benefit Babies?

- Improves overall development
- Increases weight gain
- Enhances growth
- Improves sleep
- Reduces stress and soothes the baby
- Reduces energy expenditure
- Decreases dependence on oxygen
- Reduces crying
- Improves sense of safety and security
- Improves behavioral state

(Harvard Medical School, n.d.; Hilton, 2018; Margaritoff, 2019)

What to Expect when becoming a Volunteer Cuddler:

- Expect an extensive health clearance, including up-to-date vaccinations, background checks, and any other training specific to the needs of premature infants if applicable.
- Refer to your site's volunteer department for specific information on clearances.
- You may be expected to adhere to an hourly requirement of your volunteer site.
- If you have any further questions, please refer to your site's protocols and NICU staff.

WHAT CAN A CUDDLER DO?



Cuddling Tip

PROVIDE
POSITIVE
TOUCH

Cuddlers should attend to the behavioral cues of the baby, such as facial expression, crying, and body movement (NPA, 2018).

Look out for hiccups, spitting up, tremor, coughs, sneezes, yawns, frowning, or eyebrow furrow.

Cuddlers should change the intensity and duration of physical touch under the direction and supervision of the NICU Therapists and providers when providing input in order to support neuroprotection.



PREPARING TO CUDDLE A BABY

Always check in with the nurse first before touching any infants.

The baby's medical team will determine if they are medically stable and developmentally appropriate for cuddling (Harvard Medical School, n.d.). For example, a baby on a ventilator may not be appropriate for cuddling (Children's Hospital of King's Daughters, 2020).

- **Stay Home When Sick.** In order to protect the baby from germs that may be harmful or even fatal, it is very important to stay home if you have a cough, fever, vomiting, diarrhea, sore throat, or feel ill in any way (Children's Hospital of King's Daughters, 2020).
- **Avoid wearing perfumes** or scented lotions on the days you volunteer to cuddle.
- **Wash Your Hands!** Be prepared to thoroughly wash your hands, which may include removing all jewelry, and washing up to your elbows thoroughly including between your fingers and under fingernails. You will most likely need to wear scrubs or a gown. You may need to frequently wash your hands and use hand sanitizer, as well as change your gown and gloves often based on the NICU's protocols (Children's Hospital of King's Daughters, 2020).
- **Wear a Mask!** A sign nearby the baby's bed will indicate if the baby is on contact precautions, which will require you to wear gloves and/or mask (Children's Hospital of King's Daughters, 2020).



CUDDLING A BABY

Cuddling Tip

Do not wake up a baby for cuddling, as sleep is important for their development. Keep in mind, the infants in the NICU are medically unstable with lots of specific needs. It is important for a volunteer cuddler to be patient, compassionate, empathetic and able to handle stressful situations as the baby might be fussy, restless, or crying (Hilton, 2018).

After the RN cleared you to cuddle and before touching the infant, walk up to the isolette and talk to the infant in a calm low tone to let them know that you are there.



After having talked to the baby, place your hand over the infant to offer a containment hold also known as static “hand hugs” to prepare them for tactile input. Simply place your hands over the infant’s head and feet as pictured in the photo very gently. Please avoid stroking the infant’s skin as they are not ready for this just yet.

After having touched the baby, if appropriate, ask a nurse to assist you with picking them up. The nurse will notify you if there is anything you need to be aware of such as the baby’s ability to tolerate being held or being rocked (Howes, 2019). If a baby’s medical status changes, you may be asked to stop cuddling the baby.

PUTTING A BABY BACK

When you are finished cuddling, and you’re ready to return the baby to their bed, please ask the nurse for assistance (Children’s Hospital of King’s Daughters, 2020).



When returning the baby to their bed, they may be placed on their backs unless the nurse would like to place them in a different position (Children’s Hospital of King’s Daughters, 2020).



What does the NICU look like?

Environment

An isolette, also known as an incubator, or an open bed with a radiant warmer is used to help the babies regulate their body temperature (NICU PET, 2016; OPCF, 2015).



Monitoring Vitals

A cardiorespiratory (heart-lung monitor) measures heart rate and breathing. Sensors are placed on the baby's chest, abdomen, arm or leg, which have a cable that connects to a monitor that will notify staff via an alarm. A temperature monitor measures body heat through a sensor placed on the skin.

A cuff is placed on the infant's arm or leg to measure blood pressure. A pulse oximeter, attached to the hand or leg, measures the amount of oxygen in the blood (NICU PET, 2016; OPCF, 2015).



Why is a Baby in the NICU?

Levels of Infant Medical Care

Level I: Well Newborn Nursery

- Routine care for any infant born 35 weeks and older who is stable

Level II: Special Care Nursery (SCN) (AKA Step-Down Unit)

- Infants born at least 32 weeks who may need temporary breathing support

Level III: Neonatal Intensive Care Unit (NICU)

- Infants born before 32 weeks who need full breathing support

Level IV: Neonatal Intensive Care Unit+ (AKA Regional NICU)

- Highest level of care. Infants with birth defects and other serious complications typically requiring surgeries, breathing support as well as other equipment (March of Dimes, 2015; NPA, 2018)



NICU Environment

The design of NICU environments should aim to decrease stress and increase neurodevelopmental outcomes to provide developmentally appropriate care. Our goal is to protect the infant to avoid overstimulation and to avoid exposure to sensory input that the infant is not ready to process.

What can the baby hear?

Sound Exposure in the NICU

Auditory exposure is often too overwhelming in the NICU. Protecting infants from these sounds will promote sleep protection. Sound exposure beyond bedside language is not recommended until 28 weeks. At 28 weeks the SENSE program suggests you can sing, read to and talk to baby for 20 mins (Pineda, et al., 2019). The American Academy of Pediatrics recommends that NICU sound levels do not exceed an average of 45 dB, which is the sound of a whisper.

What can the baby see?

Light Exposure in the NICU

The human fetus has a circadian rhythm (sleep-wake cycle) that is dependent on light exposure. NICUs with day-night lit rooms support visual development and circadian rhythms of preterm infants, with light exposure during the day and darkness at night (Jobe, 2014). After 32 weeks cycling light is appropriate. With this in mind, it is essential to understand that we must protect infants from too much light until their visual system is fully ready around 40 weeks.

What can the baby feel?

Tactile Development in the NICU

As early as 8 weeks, a human fetus begins to develop their sense of touch. By 30 weeks a fetus's sensory system is developed, and they are sensitive to all physical stimulation including touch, temperature, pressure, and pain (UTSW Medical Center, 2017). Because of all of the procedural touch that the infant receives in the NICU it essential that caregivers provide positive touch in the form of skin-to-skin, cuddling, and appropriate external touch while in the NICU (Ardiel & Rankin, 2010). Depriving a premature infant of physical touch causes decreased brain stimulation which may lead to harmful consequences for the baby's development (Jobe, 2014). Appropriate touch is in the form of predictable gentle holding and avoiding stroking or rubbing the infant's skin.

Reasons for NICU Stay



Prematurity

Premature infants are vulnerable to health complications and in need of specialized care, due to their immature body systems. Such complications include difficulties breathing, eating, and keeping warm (OCPF, 2015).



Premature, preterm, or preemie infants are born at or before 37 weeks & categorized by weight

- Normal Birth Weight (NBW): 2500g-3000g
- Low Birth Weight (LBW): 1500g-2499g
- Very Low Birth Weight (VLBW): 1000g-1499g
- Extremely Low Birth Weight (ELBW): less than 1000g
- Micro Preemie: less than 800g

Other Medical Conditions

Any baby premature or full term may have a NICU stay due to medical complications. The following conditions can be seen in babies who are premature or full term.



1. **Respiratory Distress Syndrome (RDS):** a breathing disorder where the lungs have difficulty expanding; RDS primarily affects premature infants because their lungs are not fully developed (NPA, 2018).
2. **Jaundice:** the liver is immature or has complications which leads to yellowish skin (NPA, 2018).
3. **Neonatal Abstinence Syndrome (NAS):** infants who developed during a pregnancy with maternal substance use, and experience withdrawal symptoms after birth (NPA, 2018).

SPOTLIGHT:

Neonatal Abstinence Syndrome (NAS)

Infants with NAS are experiencing withdrawal symptoms after maternal substance-use in pregnancy (NPA, 2018).

Symptoms include:

- Irritability, fussiness, and crying more than usual
- Sleeping less than 1-3 hours at a time
- Sensitive central nervous system responses, such as excessive reflex jerks and tremors
- Excoriation (rubbing chin, nose, knees and elbows) (NPA, 2018)
- Cuddling greatly decreases withdrawal symptoms for these babies, helps them engage, increase eye contact, and eat and sleep better (Margaritoff, 2019).

Medical Lines in the NICU

Breathing

Often when a baby is born premature, the lungs have not fully developed for the baby to be able to breath independently. The baby's medical condition determines the type of breathing support needed.

Nasal Cannula



Delivers extra oxygen through a small plastic tube which inserts two nozzles into the nostrils of the baby (NICU PET, 2016; OPCF, 2015).

Continuous Positive Airway Pressure (CPAP)



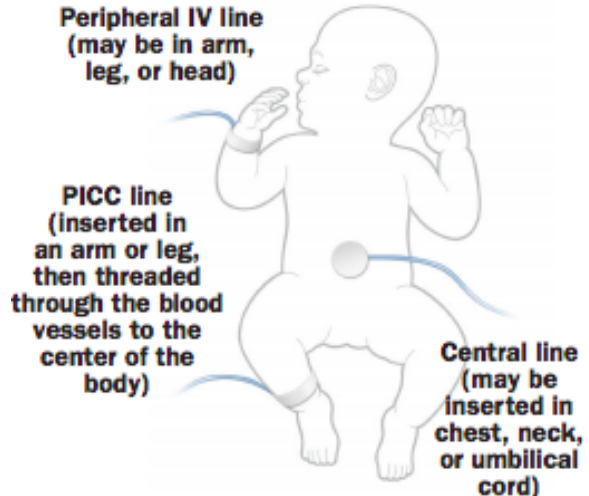
Uses a mask or special tube placed in the nose to deliver mild pressurized air to keep the lungs open and reduces the efforts needed for the baby to breathe (NICU PET, 2016; OPCF, 2015).

Ventilators



Use a small plastic tube (endotracheal tube) that gets inserted through the nose or mouth of the baby into the trachea (windpipe) to reach the lungs, allowing oxygen or pressurized air to flow directly in (NICU PET, 2016; OPCF, 2015).

Nutrition



Peripheral IVs deliver their contents into the baby's arm, leg, or head.

Central IVs deliver their contents into the central part of the baby's body near the heart. If a central line gets inserted into the baby's arm or leg, it is usually called a peripherally inserted central catheter (PICC) line (NICU PET, 2016; OPCF, 2015).

Feeding

If a baby cannot be fed by mouth, they instead take in breast milk or formula through a tube that reaches their stomach.



Orogastric (OG Tube) - inserted through mouth

Nasogastric (NG Tube) - inserted through nose



Gastrostomy (G Tube) - inserted through stomach wall in special cases

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