

Your Baby's Unique Needs

How NICU staff care for your preterm or sick baby

This handout explains the care needs a premature or sick full-term infant might have, and how Neonatal Intensive Care Unit (NICU) staff will provide for those needs.

What causes a preterm birth?

A full-term pregnancy usually lasts 40 weeks. When a baby is born before 37 weeks, it is called a *premature* or *preterm* birth.

Please do not assume that your baby was born early because of something you did or did not do while you were pregnant. If you had a *high-risk pregnancy*, your doctor may be able to explain why you had an early delivery. But, we often do not know what has caused a premature birth.

Why is my full-term baby in the NICU?

A full-term baby may need to be in the NICU for many reasons. If you have any questions about why your baby needs to be cared for in the NICU, please ask your baby's care team.

How will NICU staff care for my baby?

The NICU is specially designed to care for premature and sick babies. When your baby is admitted to the NICU, the nurses and doctors will watch closely for changes in skin color, breathing, heart rate, temperature, and blood test results.

Common health concerns for premature and sick babies include:

- Nutrition needs
- Body temperature control
- *Respiratory distress syndrome (RDS)* (see page 29)
- *Sepsis* (infection) (see page 29)
- *Apnea, bradycardia, and desaturations* (see page 30)



NICU nurses and doctors will watch closely for any changes in your baby's health.



“The staff always kept me informed. We all worked together to get Austin healthy.”

-- Austin's Mom

Please know that this handout does not cover all the health concerns your baby might have. And, all babies will not have all the issues that are listed in this handout. If you have questions about any issue your baby has, please talk with your baby's care team.

Nutrition Needs

Every day during rounds, a neonatal dietitian and the rest of your baby's care team will talk about your baby's nutrition needs. We want to make sure we are giving your baby everything they need for best growth and development. Your baby's age and weight will tell us what to feed.

Until your baby can eat by sucking from your breast or a bottle, we will feed fortified breast milk that you pumped or a nutrient-rich formula, along with other fluids. This feeding will be done in one of these ways:

- Through an *intravenous (IV) line*, a thin, flexible tube that goes directly into the baby's vein
- By *gavage*, a soft, flexible tube that passes through the baby's nose or mouth and into their stomach

Feeding is one of the earliest ways parents bond with their babies. This is why feeding by IV or gavage can be hard for parents at first. Your baby's care team will do their best to support and involve you as much as we can in your baby's feeding.

As soon as your baby is ready, we will help you breastfeed. If we cannot feed breast milk for any reason, we will feed a special formula for premature infants.

Supplementing Breast Milk

Breast milk contains nutrients that all babies need. But, since preterm babies have different nutritional needs than full-term babies, we may add these supplements to your baby's food:

- **Fortifiers:** Preterm infants need more protein, calories, and minerals than full-term babies. This is why we may add *fortifiers* to the breast milk your baby receives. Fortifiers are powders or liquids that contain protein, calories, and minerals such as calcium and phosphorus. These supplements build stronger bones and help your baby grow.
- **Probiotics:** We may add *probiotics* to your baby's food. Probiotics are bacteria that occur naturally in healthy intestines. We need probiotics for normal digestion. Live-culture yogurts and many cheeses contain some of these bacteria. To learn more, ask your nurse for the handout “Probiotics: For our most premature babies.” You can also find the handout online at <https://healthonline.washington.edu>.

To learn more about fortifiers and probiotics, please talk with your baby's care team.

Breast Pumping

If you want to breastfeed your baby, start pumping your breasts regularly as soon as you can after your baby is born. We can feed your baby your breast milk through a gavage if your baby is not yet ready to go to your breast. Breast pumping will also ensure that you will have enough milk when your baby is able to breastfeed.

We can teach you how to pump your breasts and store your milk to use later. We will also answer your questions about breastfeeding your premature baby.

Ask your nurse for more information about breastfeeding and breast pumping. To learn more, ask your nurse for the booklet “Breastfeeding Your Hospitalized Baby.”

Donor Milk

Your baby may also be eligible to receive donor breast milk. If this is an option for your baby, a member of the care team will talk with you about it. To learn more, ask your nurse for the handout “Donor Human Milk Program.” You can also find the handout online at <https://healthonline.washington.edu>.

Feeding Readiness

The ability to suck on a pacifier is called *reflex sucking*. Most times, this skill develops before 28 weeks of gestational age.

We might think that if a baby can do reflex sucking, they are ready to start breastfeeding or feeding from a bottle. But the ability to do reflex sucking comes much earlier than the ability to suck milk from a nipple.

“Suck-swallow-breathe” sucking is needed for taking milk from a nipple. Most times, this skill does not develop until 33 to 36 weeks.

Most premature babies are ready to feed from the breast or bottle when they:

- **Are at least 33 weeks corrected gestational age.** Before this age, babies are not physically mature enough to manage sucking, swallowing, and breathing in the way that is needed when taking food by mouth.
- **Have stable vital signs.** This means that your baby’s breathing rate is less than 70 breaths a minute, and their heart rate is mostly steady. (To learn more about what unstable vital signs mean, read about “ABDs” in the handout “Medical Terms in the NICU.”)

If a baby is not old enough or does not have stable vital signs, it may be harmful to offer them a breast or bottle. The NICU care team will assess when your baby is ready to begin to breast or bottle feed.

When your baby is ready to feed from a nipple:

- First, try breastfeeding your baby. If that goes well, choose breastfeeding instead of bottle feeding as much as you can.
- If breastfeeding is not possible, we will use the same criteria for feeding readiness to know when your baby is ready to feed from a bottle.

Please note that feeding plans and goals are unique for every baby. We will work with you to decide the best feeding plan for your baby. To learn more about feeding, see “Safe Feeding” in *Getting to Know Your Baby and the NICU Therapy Team*.

If It Is Time to Try Breastfeeding

- The first step in trying breastfeeding is usually to offer a breast after it has been pumped.
- After your baby tolerates a pumped breast, it’s time to offer a non-pumped breast.
- When breastfeeding has been working well for a long time, you can also try bottle feeding. But, choose breastfeeding over bottle feeding as often as you can.

Feeding is a complex skill for a baby. There are many steps to learn along the way. It may take time for your baby to learn all the things they need to do in order to be safe while eating. Try to be patient if your breastfeeding journey is different than you expected.

We have many tools and resources to help you and your baby find success with feeding. There are also many resources to support you with feeding after you leave the NICU. If needed, your healthcare team will make referrals for you after discharge.

Temperature Control

Premature babies have very little body fat. Their skin is thinner than a full-term baby’s skin. This means they get cold easily.

To make sure your baby stays warm:

- Your baby will spend most of the time in an *incubator*, a plastic, enclosed bed with warmed and/or moist air.
- The care team will work to “cluster” your baby’s care tasks. This means they will do several tasks at the same time. This way, your baby is not exposed to the cool air for very long.

Most times, your baby can come out of the incubator for you to hold. If your baby can handle it, hold them next to your body, skin-to-skin. This gives you the chance to hold your baby while the heat of your body helps keep them warm. This is called *kangaroo care*.

As your baby grows, they can be out of the incubator for longer periods. We can teach you how to dress your baby to stay warm while in your arms, even if you are not giving kangaroo care.

Respiratory Distress Syndrome

Some babies have *respiratory distress syndrome* (RDS). This condition occurs when a baby's lungs are immature and do not produce enough of a chemical called *surfactant*.

Surfactant is a soapy substance. It keeps the air sacs of the lungs open during *expiration* (breathing out). If the air sacs are not open, the lungs cannot exchange oxygen (O₂) and carbon dioxide (CO₂) as well as they should. This makes it hard for your baby to breathe.

When this happens, your baby's body will try other ways to get more oxygen and get rid of carbon dioxide:

- Your baby will begin to “grunt.” This sound results from the effort needed to keep the air sacs open.
- Your baby will start to breathe faster. This occurs because many air sacs have collapsed, and the remaining open air sacs have to work harder. This rapid breathing is called *tachypnea* (“tak-**ip**-ne-ah”).
- You will see indentations, called *retractions*, in your baby's chest during *inspiration* (breathing in).

Even with this extra effort, your baby will need help breathing until their lungs heal and produce more surfactant. Your baby's care providers will monitor your baby's progress and provide breathing support as long as it is needed.

Here are 2 ways we support a baby while their lungs heal and grow:

- We may give your baby extra oxygen through nasal prongs or a mask.
- If RDS is severe, we may use a *ventilator*, a machine that either helps the baby breathe or breathes for the baby.

To learn more about the equipment we use to help NICU babies breathe, see “Medical Equipment in the NICU” in the appendix.

Sepsis

Sepsis is an infection in the bloodstream or body tissues. All babies, especially those who are premature, are more at risk for infection because their *immune systems* are not mature at birth. Immune systems are a healthy body's natural defense against infection.

Without a strong immune system, an infection can enter the body and spread. A baby can become infected while in the uterus, during delivery, or in the nursery.

In the NICU, infection is usually spread by skin contact. This is why visitors to the NICU must scrub and gel their hands. Hand washing is a vital part of lowering the risk of infection.

Apnea, Bradycardia, and Desaturations

Apnea, bradycardia, and desaturations are 3 conditions that often occur together while a baby is still learning how to breathe. Here are descriptions of these 3 conditions:

Apnea (ap-nee-ah): While inside the womb, a baby receives oxygen through the umbilical cord. At birth, the baby's lungs must start working to breathe in the oxygen that is needed to live. Sometimes, while the brain is maturing, a baby can "forget" to breathe for a short time. If the baby stops breathing for 15 seconds or longer, it is called apnea.

- **Bradycardia (bray-dee-car-dee-ah):** When apnea occurs, a baby's heart often begins to beat more slowly. If the heart rate drops below 100 beats a minute for 15 seconds or more, it is called bradycardia.
- **Desaturations (dee-sat-ur-a-shuns):** When a baby's breathing and heart rates slow, the baby's blood is not as *saturated* (full) of oxygen as it should be. This is called desaturation. Without enough oxygen, a baby's skin may start to look blue, often around the eyes and mouth (*cyanosis*). But some babies do not show any change in skin color. This is why we watch for signs of desaturation on a monitor.

Because these three conditions tend to occur together, we call them "ABDs" for short. Most premature infants have episodes of ABDs because their central nervous systems are still developing. This is why all babies admitted to the NICU are monitored for breathing and heart rate.

The baby's monitor alarm will sound if either of these occurs:

- Apnea lasts 30 seconds or more
- The heart rate drops below 100 beats per minute

Your baby's monitor can be seen from many other places in the NICU, and all alarms are sent to the nurse's phone. If the alarm sounds, a nurse always makes sure the baby starts to breathe again. Once the baby is breathing, the heart rate also returns to normal.

Each time apnea, bradycardia, or desaturation occurs, a nurse records the event in the baby's *electronic medical record*. The nurse also notes the time, the lowest heart rate, and how much stimulation was needed to get the baby breathing again:

- In a *spontaneous* ABD, your baby began breathing again or the heart rate increased without help.

