

## 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
- Temperature control
- *Respiratory distress syndrome (RDS)* (see page 4)
- *Sepsis* (infection) (see page 5)
- *Apnea, bradycardia, and cyanosis* (see page 5)



*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

Keep in mind that this handout does not cover all the health concerns your baby may have. And, the issues explained in this handout may not apply to every NICU baby.

If you have questions about one of these topics, or about another issue your baby has, please talk with your baby's care team.

## Nutrition Needs

Until your baby can eat by sucking from your breast or a bottle, we will feed fortified breast milk or a nutrient-rich formula and other fluids either:

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

Every day during rounds, the care team talks about your baby's nutrition status. We want to make sure we are providing everything your baby needs for best growth and development. Your baby's age and weight determine what they will eat.

We will help you breastfeed your baby when it is possible. If breast milk is not available, we will feed your baby 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. To fill this need, 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 also add *probiotics* to your baby's food. Probiotics are bacteria that occur naturally in the intestines of a healthy body. These bacteria are needed 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,” or find it on Health Online, <https://healthonline.washington.edu>.

Talk with your baby's care team about your baby's feeding plan to learn more about fortifiers and probiotics.

## **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 tube 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,” or find it on Health Online, <https://healthonline.washington.edu>.

## **Feeding Readiness**

It seems logical that if a baby can suck well on a pacifier, it is time to start breastfeeding or feeding from a bottle. But, the ability to suck on a pacifier, called *reflex sucking*, comes much earlier than the ability to suck milk from a nipple.

Reflex sucking is seen before 28 weeks. But the type of “suck-swallow-breathe” sucking that is needed for taking milk from a nipple usually does not occur until 33 to 36 weeks of gestational age.

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, read about “ABCs” in the handout “Medical Terms in the NICU.”

If a baby does not meet these criteria, offering a breast or bottle may be dangerous. The NICU care team will assess your baby’s readiness to begin to breast or bottle feed regularly.

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 possible.
- 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.

### **Temperature Control**

Premature babies have very little body fat and thinner skin than full-term babies. This means they can easily become chilled. 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.
- Care providers will do their best to complete the procedures that are needed within a short time so that your baby is not exposed to the outside environment for very long.

Your baby can come out of the incubator for you to hold. It is best to hold your baby skin-to-skin at these times. This is called *kangaroo care*. When you hold your baby skin-to-skin, your body helps keep your baby warm.

When your baby is able to 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 keeps the air sacs of the lungs open during *expiration* (breathing out). If the air sacs are not open, the lungs are not able to exchange oxygen (O<sub>2</sub>) and carbon dioxide (CO<sub>2</sub>) as well as they should. This makes it hard for your baby to breathe.

When this happens, your baby's body will try to meet the need for more oxygen and to eliminate 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 the lungs heal and produce more surfactant. 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.

Your baby's care providers will monitor your baby's progress and provide breathing support as long as it is needed.

## **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 the NICU visiting procedures include scrubbing and gelling. Hand hygiene is a vital part of lowering the risk of infection.

## **Apnea, Bradycardia, and Cyanosis**

*Apnea*, *bradycardia*, and *cyanosis* are 3 conditions that often occur together. Because of this link, healthcare providers call them “ABCs.”

- **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 this period of not breathing lasts 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 per minute for 15 seconds or more, it is called bradycardia.
- **Cyanosis** (sigh-a-no-sis): When breathing and heart rate slow, the baby’s body does not get the oxygen it needs. The baby’s skin can start to look blue, especially around the eyes and mouth. This is called cyanosis. The drop in oxygen level also shows on a monitor.

Because most premature infants have episodes of ABCs, 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:

- The 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 cyanosis 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:

- *Spontaneous ABC* means your baby began breathing or the heart rate increased without help.
- *Mild ABC* means your baby needed help to start breathing, in one of these ways:
  - Gentle stroking
  - Nose or mouth suction
  - Position change
- *Moderate ABC* means the baby needed stronger stimulation, such as:
  - Position change
  - Giving more oxygen
- During a *severe ABC*, the nurse needed to give the baby breaths and use a device to deliver extra pressure to the baby’s lungs. This can be done with or without giving more oxygen.

Over time, as your baby's brain matures, ABCs will happen less often. The day will come when there will not be even a spontaneous episode of apnea, bradycardia, or cyanosis.

Your baby's doctor may also prescribe daily caffeine for your baby. Caffeine has been shown to decrease episodes of apnea.

If you have any questions about apnea, bradycardia, or cyanosis, ask your baby's nurse or care provider. Ask your baby's nurse to review ABCs with you, or read about ABCs in the appendix "Medical Terms in the NICU."

### **Notes**

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### Questions?

If there is something you do not understand, please ask questions. Every question you ask is important!

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206.598.4606