



B L O O D T R A N S F U S I O N A N D B L O O D D O N A T I O N

The need for a blood transfusion may arise during your newborn's stay in the Special Care Nurseries. At times, a blood transfusion may be an urgent decision. Your baby's physician (the neonatologist) will explain why your baby may need a blood product during the first few days of life. Please discuss any concerns regarding blood transfusions vs. your religious or personal beliefs with your baby's physician.

A hematocrit – a blood test to make sure there are enough red blood cells in the body to carry plenty of oxygen – is done upon admission and then periodically. When the level of red blood cells becomes low, it is called "anemia," which is very common in premature babies. A blood transfusion may be used to treat anemia.

Blood given to your baby has been thoroughly tested for blood type and diseases. Other blood products (i.e., platelets, fresh-frozen plasma) may also be needed for your baby, especially during the first few days of life. As your baby matures, anemia may be treated with a supplement and vitamins.

Upon admission, the neonatologist may ask you to sign a consent form for blood transfusions. He will also discuss with you the option of directed donor blood, in which a parent or family member gives blood for the baby's use. (If directed donor blood is an option, you may choose the donor. However, Mom will not be able to donate until several weeks after delivery.) The donor must be a match for the baby's blood and will be thoroughly screened. Life South Community Blood Center and the American Red Cross are two options to donate blood; an appointment is recommended. If you decide to donate blood, the nurse caring for your baby can have the proper paperwork completed for you to take to the donation center of your choice.

B L O O D W O R K

Frequently, samples of blood will be taken from your baby to monitor his breathing, nutritional balance and overall condition. The blood may be obtained from the UAC or PAL, or by a small stick to the heel of your baby's foot.

O G / N G F E E D I N G S (O R O - G A S T R I C / N A S O - G A S T R I C)

Tube feedings are a way for your baby to receive breast milk or formula before he may be ready to feed from a bottle or breastfeed. A very thin, soft tube is passed through your baby's mouth (OG tube) or nose (NG tube) down to his stomach, then secured with tape to his cheek or chin. The nurse will attach a syringe containing the breast milk or formula to the tube, and the liquid will empty slowly into your baby's stomach.



UMBILICAL LINES (ALSO CALLED UVC AND UAC)

Umbilical lines are small catheters inserted into your baby's umbilical cord. Your baby usually has three vessels in the cord – two arteries and a vein. These catheters can be placed in the artery and the vein. The catheter placed in the vein, called an umbilical venous catheter, or UVC, is used to provide fluids that give your baby nutrition during the first days of life. This catheter may also be used to give medications and blood transfusions. The catheter placed into the artery – called the umbilical arterial catheter, or UAC – is used to draw blood for lab work and monitor blood pressure.

PERIPHERAL I. V.

A small plastic tube placed in a vein to give your baby intravenous fluids and medications. Catheters may be placed in your baby's arms, legs or scalp.

PERIPHERAL ARTERIAL LINE (PAL)

A very small catheter placed in an artery in the wrist or by the ankle, from which blood work is drawn and blood pressure is monitored.

X - RAY

A common procedure that gives an "inside picture" of a particular area of your baby's body (for example, the lungs). This image is helpful in diagnosis and treatment. Depending on your baby's condition, an X-ray may be taken daily, weekly or only once or twice while he is in the Hospital.

CRANIAL ULTRASOUND

Usually during the end of the first week of life, your premature baby will have a cranial ultrasound. This ultrasound uses high-frequency sound waves to look at the brain through a window area called the anterior fontanel (the "soft spot"). The ultrasound helps reveal the brain's structure and allows your baby's doctor to evaluate for an intraventricular hemorrhage (also known as bleeding into the ventricles of the brain).

A PARENT'S GUIDE TO THE SPECIAL CARE NURSERIES AT PIEDMONT HOSPITAL

your baby's signals



The Special Care Nursery environment may seem quite overwhelming to you as a parent. It is also overwhelming to your baby, especially the very small premature baby. It affects your baby's sense of sight, hearing and touch.

SIGHT

At birth, your baby's vision is very poor. He has little ability to focus and can open his eyes for only brief periods of time. During the first weeks of life, your baby's eyes will be protected with either a cap over his face, eye patches or a cover over his isolette. As your baby matures, he will open his eyes for longer periods of time. Then he will look at you and follow your face. Babies also like black-white contrast objects at this time. Talk with your baby's nurse to determine when these objects can be introduced to your baby.

HEARING AND SOUND

Babies can hear at birth and are highly sensitive to noise in the Special Care Nurseries. Because of your baby's limited ability to cope, long periods of loud noise can cause him to have stimulus overload. (Signs of stimulus overload are explained in detail on page 12.) Ways to help your baby cope with noise include:



Placing him in an isolette as soon as he is medically stable (usually the fourth day of life).



Placing cotton balls over your baby's ears when he's not in an isolette.



Talking softly and quietly at your baby's bedside and during designated "touch time," when the SCN staff gives your baby hands-on care (every three to four hours). During this time, all medically necessary procedures are completed (called "cluster care") so that your baby can rest between procedures (sometimes known as "time out"). To determine your baby's touch time, contact your baby's nurse.



Avoid excessive conversation, especially when your baby is sleeping. Cell phones should be turned off at the bedside and beepers should be placed on vibration mode.



Open and close your baby's incubator doors quietly.



During touch time and for short periods of time while he is awake, talk softly, read and sing to your baby. Your voice is more comforting to him than a tape recording.



To remind staff and visitors of quiet time, the amount of lighting around your baby's bed may be reduced.



TOUCH AND PAIN

At birth, your baby is very sensitive to touch. Simple things like stroking, repositioning your baby in the bed and changing his diaper can overload his system. It may create a painful experience if your baby is very small and premature. Here are some ways to help your baby adapt to touching and pain:



Initially, handle your baby as little as possible. Outside touch time, your baby is left undisturbed so that he can develop sleep patterns, grow and mature. For this reason, your baby may be weighed every third day for several days, then every other day for the weeks to come.



Supporting your baby's arms and legs and tucking them close to his body (called "encasing") is very comforting to him. A firm but soft, gentle stroke on his body, especially around his lips or hands, can also help soothe your baby, and it prepares your baby to be moved.



When moving your baby from one position to the next, use smooth, gentle movements. Avoid sudden jerky movements.



Your baby will be provided with boundaries – including bendi-bumpers, a puff-pack mattress, wedgies and a snugli – to help keep his arms and legs close to his body. Sometimes the items are placed in a circle around your baby in the bed to create a "nest." This gives him a sense of security.



Since your baby enjoys periods of sucking, a small pacifier may be used.

If the above comforting measures do not help your baby handle stimulation, medication may be used to help calm him and relieve pain.

As your baby matures and stays awake longer, you may be allowed to engage in hands-on interaction with your baby. "Kangaroo Care" is a technique that may be introduced to help your baby adjust to his new environment. This involves placing your baby on your chest, skin-to-skin, to provide a feeling of warmth and comfort to both you and your baby. Your baby's nurse will provide you with a brochure explaining Kangaroo Care and will discuss when you and your baby will be ready to start this technique.



SIGNS OF STRESS AND OVER-STIMULATION

When your baby has had too much stimulation from his environment, he may show signs of stress as follows:

- ♥ turning his face away or avoiding eye contact
- ♥ having a look of panic on his face
- ♥ yawning and sneezing
- ♥ irritability
- ♥ problems staying alert
- ♥ tremors and twitches
- ♥ gagging, spitting up or hiccuping
- ♥ labored breathing
- ♥ change in color (becoming very pale or white, or developing blotchy-looking skin that's blue or dusky in color)
- ♥ fingers or toes spread wide ("splaying")
- ♥ arching back
- ♥ sticking his tongue out
- ♥ very jerky arm and leg movements

Understanding how well your baby tolerates stimulation is important. When signs of stress begin to appear, STOP what you are doing and give your baby time to calm down before continuing the activity.



SIGNS OF STABILITY
(YOUR BABY'S ABILITY TO HANDLE STRESS)

As your baby matures, he may become better equipped to handle stress and show some of the following signs of stability:

- ♡ sucking
- ♡ putting hands to mouth
- ♡ grasping and holding on to things
- ♡ clasping hands or feet
- ♡ tucking arms and legs into the body

PROVIDING COMFORT CARE

As a parent, one of the most important things you can do is learn your baby's stress signals and respond by providing him comfort, as follows:

- ♡ Talk softly.
- ♡ Handle your baby slowly and gently.
- ♡ Give your baby breaks when signs of stress occur.
- ♡ Provide your baby with periods of undisturbed rest and sleep.
- ♡ Position your baby with boundaries around him, with his arms and legs tucked into his body.
- ♡ Provide only one stimulus (activity) at a time.

Mastering these skills while your baby is in the Hospital will help you become more comfortable caring for him as he grows and matures.

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nutritional needs of your baby



Babies admitted to the Special Care Nurseries are often unable to feed right away and have very individualized dietary needs. Initially, the doctor may order your baby to be on an NPO status, which means "give nothing by mouth." However, because the pre-term baby sometimes lacks fat and energy stores, it is very important that some form of nutrition is provided as soon as possible.

Your baby may also lack the normal enzymes and digestive processes that help move the stomach contents through the gastrointestinal (G.I.) tract. The motor skills to suck and swallow are not developed until 33 to 34 weeks' gestational age. (Gestation is the number of weeks your baby was in your womb.) A staff neonatologist will decide the best time for and method of feeding.

I.V. THERAPY

Babies who are too small or sick may first begin feeding through intravenous (I.V.) therapy, also known as hyperalimentation or total parenteral nutrition (TPN). This therapy may begin within the first few hours of your baby's life, and it may initially provide all of your baby's nutritional needs. TPN is yellow and may be in an I.V. bag or bottle; it provides proteins, carbohydrates and vitamins. Lipids, or fats, are also provided to your baby through I.V. therapy. TPN and lipids are given until your baby is stable enough to eat by mouth. However, if he is not ready to suck and swallow, feeding may be provided by tube feedings.

TUBE FEEDINGS

Once the digestive tract is ready for feedings, small amounts of breast milk or formula are delivered by a small, soft tube through the mouth (orogastric, or OG) or nose (nasogastric, or NG) into the stomach. A syringe of milk is attached to the end of the tube. The milk flows into the baby's stomach either by gravity or with the assistance of a small pump. While the baby is being fed, a pacifier may be given to help him practice sucking with feeding (called "non-nutritive sucking"). Nurses will watch for signs that your baby is tolerating the feeding – such as no vomiting, little or no milk left over in the stomach, a soft and non-distended tummy, and no blood in the stools. If your baby is doing well with tube feedings, the amount of milk is slowly increased and the amount of I.V. fluid is gradually decreased.



NIPPLE FEEDING

When your baby reaches 33 to 34 weeks' gestational age, he may be ready to begin nipple feeding (by breast or bottle). Your baby will not learn how to feed overnight – mastering this process takes time and it will be slowly introduced. At first he may be able to take as little as 4 to 5ccs (a teaspoonful). As your baby adjusts, small amounts will slowly be added. Some feedings may go well, while others may not. The SCN staff will closely monitor his reaction, watching for such difficulties as vomiting, excess stomach gas, loose stools or blood in the stool, and adjusting accordingly.

Human milk is a very important nutrient for your baby's health. If you plan to breastfeed your baby, we encourage you to express your milk. During your Hospital stay, a lactation consultant will give you information on expressing and storing breast milk, and help you get started. Your milk will be saved in the nursery until your baby is ready for NG, OG or nipple feeding.

When visiting your baby, please let the nursing staff know if you have breast milk available. There is a freezer in the Intermediate Care Nursery and refrigerators in both Special Care Nurseries for breast milk storage. The nursing staff will let you know where to leave your milk for later use.

Typically, preemies lack the strength to breastfeed immediately after birth. Also, due to lack of coordination of sucking, swallowing and breathing, it takes time for them to learn how to breastfeed. Breastfeeding should be slowly introduced to your baby, with the help of a nurse or lactation consultant. And if your baby seems to struggle at first, don't give up – continue pumping and feeding your baby breast milk through NG, OG or nipple feeding. Breastfed babies have fewer ear infections, incidences of diarrhea and allergies than formula-fed babies. Studies prove that the benefits of breast milk last long after a baby is weaned.

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respiratory care for your baby



Some babies admitted to the Special Care Nurseries have some type of breathing problem and benefit greatly from technological advancements in respiratory care. Babies born very early are unlikely to have well-developed lungs and can't breathe without assistance. A respiratory therapist can help you handle the ventilators and other equipment that enable your baby's breathing.

RESPIRATORY DISTRESS SYNDROME (RDS)

Respiratory Distress Syndrome (RDS) – also known as breathing trouble – is one of the most common problems with premature babies. The tiny air sacs of your baby's lungs contain a foamy substance called **surfactant**, which is very important for your baby to breathe normally, appropriately and effectively. When there is enough surfactant lining the air sacs of the lungs, the sacs remain open and air moves in and out easily. When there is not enough surfactant, the air sacs collapse between breaths. As a result, the baby's lungs are not as effective at exchanging air. Premature babies do not have enough surfactant in their lungs. They have to work very hard to breathe and will tire without proper breathing support through respiratory equipment.

A **pulse oximeter** is used to determine whether your baby is receiving the proper amount of oxygen. This monitor is placed on the hand, wrist or foot and secured with a soft, spongy wrap.

Your baby will have blood samples, called **blood gases**, taken to ensure that he receives the right amount of oxygen when he inhales and releases the right amount of carbon dioxide when he exhales. These blood samples will be taken from your baby's heel, or from a catheter inserted into either his umbilical cord or a blood vessel in the wrist or behind the ankle. The results of these blood gases help the respiratory therapist adjust the breathing support equipment to your baby's breathing needs.

HOW WE CARE FOR BABIES WITH RDS

Most babies with RDS show signs of distress (difficulty breathing) right away, in the delivery room or within hours after birth. A baby with severe RDS may be put on a breathing machine called a **ventilator**. When this happens, a small tube called an endotracheal (ET) tube is inserted through the baby's mouth into the windpipe and held in place with tape on his face. The tube passes through the baby's vocal cords, so no noise will be heard when he cries. Your baby will be able to breathe some on his own while on the ventilator; the ventilator assists his own breathing so that he does not have to work as hard.