

# Guide to Baby Care



The Herman & Walter Samuelson  
**Children's**  
HOSPITAL AT SINAI

a LifeBridge Health center



*The Herman & Walter Samuelson*  
**Children's**  
HOSPITAL AT SINAI

Dear Parent,

Welcome to the Neonatal Intensive Care Unit (NICU) at Sinai Hospital. Our goal is to provide your baby with the best care possible in a safe and family-centered environment. Your presence is important for your newborn, and our staff will help you learn all about your new baby. That's why parents are considered care partners and are encouraged to be with their babies whenever possible.

Please provide us with a list (attached) of up to six other adults, not including your baby's siblings, who you feel would be most supportive and helpful to you. The list will be kept at the security desk for identification when they arrive. These visitors will not be allowed to hold your baby or participate in his or her care unless, of course, you give your approval.

All of the baby's visitors, including siblings, will need identification badges to enter the department.

Visitation can occur at any time except during nursing shift changes from 7 - 7:30 a.m. and from 7 - 7:30 p.m. This is so staff can communicate with the next shift and share important unit changes.

In general, our space limitations permit only two adults per bedside. However, we know special situations come up. Please talk to your baby's nurse and she will try to meet your needs whenever possible. Siblings over 3 years of age may visit with an adult and must remain under constant supervision. Only siblings in good health may visit.

Please understand that everyone's privacy is important to us. Therefore, we ask that while in the NICU, you stay at your baby's bedside.

We try to keep noise at a minimum. Please put your phone on vibrate and step out of the nursery if you need to make or take a call. Remember to sanitize your phones and tablets frequently, and especially be sure to wash your hands before handling your baby.

We only have two family rooms for everyone to use, so please value your time there and treat the rooms and their contents with respect. Though small, the Family Lounge is also available for your use.

Preventing infection is one of the most important ways that you can help your baby. If you are not feeling well or think you may be getting ill, please stay home. Let your family and visitors know that they shouldn't visit if they are sick. If you're not sure whether you are contagious, talk your baby's nurse or your own doctor for more guidance.

Sincerely,  
The NICU Staff



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## SECTION 1

### OUR MISSION

#### *Embracing Families...One Baby at a Time*

##### **Our Commitment To You:**

- We will be supportive partners in your family's care.
- We will provide your family with exceptional healthcare.
- Knowing you have entrusted us with the care of your family, we will honor that privilege every day
- We will provide warmth and compassion in every situation
- We will always welcome you as a valuable member of the NICU family



### 1.1 FAMILY CENTERED CARE

#### *What to expect while your baby is in the NICU...*

Welcome to the NICU and the world of your new baby. The following is some information about your premature baby – what to expect, his or her individual needs and how to meet them while working with your baby's care team. The care team primarily includes the nurses, doctors, respiratory therapists, social workers, a care manager and other various consultants. Together we can make your baby's stay in the NICU one that helps to promote and enhance the physical, developmental, emotional and cognitive needs of your baby.

You are the only constant in your baby's life. Help us to help you provide care for your baby and to facilitate a bonding relationship between you and your baby. Be here as much as possible and participate in his or her care. You will have a lot to learn from and about each other.

It is important to understand that there are differences between full-term and preterm babies – both physically and neurologically – as far as what they are able to do on their own, such as breathing and eating, which will fall into place over time. Premies are easily startled and stressed. Watch your baby and, together with your baby's nurses, learn his or her cues showing when your baby is calm and happy or stressed.

When you first see your baby, you may not know what to expect. Physically, premies are smaller with larger disproportionate heads and smaller arms and legs. They have no fat or "brown fat" and their skin is thin and wrinkled, all of which is normal and will fill out over time. Premies can cry; however, it is weaker and high pitched. As they grow, their cry, much like the rest of them, will grow stronger.



## **Movement**

Preemies are active in moving their arms and legs in unpurposeful, uncoordinated and sometimes jerky movements, all of which is appropriate. They have the ability, although weak, to grasp your finger. The older they get, the stronger the grasp. They startle easily. Learn how you can work with your baby and be comfortable with each other. Gently touching your baby without any stroking motions is more calming and soothing. While in the hospital, babies can be placed on their stomachs because they are well monitored and snuggled in their beds tightly. While holding, do skin-to-skin “kangaroo care” with your baby when appropriate and talk in a low, hushed voice while holding your baby firmly against you so he or she can feel warm and secure and you both can feel comfortable.

## **Sleeping**

For the most part, your preemie will sleep most of the time in the beginning. As they grow, babies will have longer “awake” periods and less sleep periods. It is important to let your baby sleep now, as this is when they save energy and grow. Interaction time will increase and is less stressful as your baby gets bigger and stronger.

## **Extrasensory Stimulation**

As mentioned, preemies are easily startled. They know your voice, and it is important for you to become attuned to your baby’s needs and respond appropriately. Talk to your baby before touching him or her so you do not startle him or her. Quietly open and close isolette doors and do not tap on the incubator. Keep lights low and noise at a minimum when baby is in the incubator, in your arms or in a crib. Excess noise and light can stress your baby and take away from time that you could have for quiet bonding.

## **Your baby’s cues**

Each baby is unique, so it is important to learn your baby’s individual needs. Watch for your baby’s reactions when you interact with him or her, either on his or her face or in his or her body movements. When your baby is happy and calm, his or her eyes will be open and your baby will look at objects and people and try to focus on them. This is a good time to talk quietly to your baby and to touch him or her gently and smile with him or her. When your baby needs to rest, or calm himself or herself, your baby may try to suck on his or her hand or close his or her eyes to shut out all the sights and sounds. When your baby is not happy, you may see him or her frown or make grimacing faces. Your baby may yawn or sneeze or hiccup, as well as stiffen his or her arms or legs, or arch or turn away. These are all signs that your baby needs some quiet time. You can still hold your baby, but he or she may need a break from playing and actively interacting.

Your baby would love to have his or her incubator decorated with some pictures of you, siblings and other family members for him or her to look at. When the time comes for your baby to wear clothes, you may want to bring them from home, new and washed, with your baby’s last name on the tag, along with baby blankets that can be brought in new and washed at any time.

**You are the voice for your child.** It is important that you actively communicate with your baby’s care team and with your baby to make the transition to home that much smoother. Remember, you are the parent and an important member of your baby’s care team, not a visitor – ask questions and be proactive in your baby’s care and needs.

## 1.2 GENERAL INFORMATION

### *Welcome to the NICU at Sinai Hospital.*

Our goal is to provide your baby with the best care possible in a safe and family-centered environment. Your presence is important for your newborn, and our staff will help you learn all about your new baby. That's why parents are considered care partners and are encouraged to be with their babies whenever possible.

#### **Visitation**

You will be asked to provide us with a list of up to six other adults, not including your baby's siblings, who you feel would be most supportive and helpful to you. The list will be kept at the security desk for identification when they arrive. These visitors will not be allowed to hold your baby or participate in his or her care unless, of course, you give your approval.

**All of the baby's visitors, including siblings, will need identification badges to enter the department.**

**Visitation can occur at any time except during nursing shift changes from 7- 7:30 a.m. and 7-7:30 p.m. This is so staff can communicate with the next shift and share important unit changes.**

In general, our space limitations permit only two adults per bedside. However, we know special situations come up. Please talk to your baby's nurse and she will try to meet your needs whenever possible.

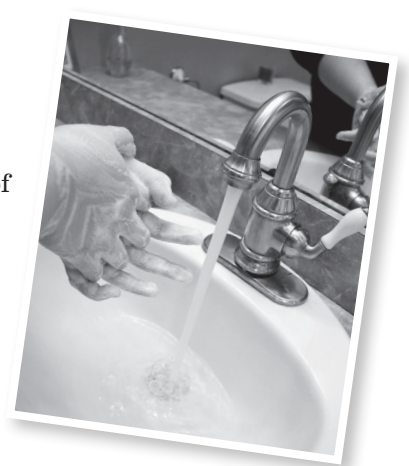
Please understand that everyone's privacy is important to us. Therefore, we ask that while in the NICU, you stay at your baby's bedside.

We try to keep noise at a minimum. Please put your phone on vibrate and step out of the nursery if you need to take a call. Remember to sanitize your phones and tablets frequently, and especially be sure to **wash your hands before handling your baby.**

We only have two family rooms for everyone to use, so please value your time there and treat the rooms and their contents with respect.

Mason's Library is also available for your use. Made possible through the gifts of Barbara Gardell and other donors, Mason's Library is a collection of children's books for you to read to your newborn. We accept donations of new children's books to add to this library.

**Preventing infection is one of the most important ways that you can help your baby. If you are not feeling well or think you may be getting ill, please stay home.** Let your family and visitors know that they shouldn't visit if they are sick. If you're not sure whether you are contagious, talk to your baby's nurse or your own doctor for more guidance.



### Telephone Calls

If you cannot be at the hospital, please do not hesitate to call the NICU whenever you wish. Information regarding your baby's conditions **will be given only to the parents**. The phone number for the NICU is 410-601-6077 or 1-800-444-8233, and for the Special Care Nursery 410-601-6078. Let your family and visitors know that they shouldn't visit if they are sick. If you're not sure whether you are contagious, talk to your baby's nurse or your own doctor for more guidance.

### Learning About Your New Baby

You may not need or want to read this entire book. Each topic is in a separate section so you can find the parts you want and that are specific to your baby's individual needs.

Your baby's nurse will go over many of the sections in this book. Because we use this for teaching, we ask that the book stay at the baby's bedside.

A pocket is provided in the back of the book and contains additional information you may find helpful.





### 1.3 LOCAL ACCOMMODATIONS

Below is a list of local accommodations which provide discounted rates for all family and friends of Sinai Hospital patients. For detailed rate information, please contact the hotel directly at the numbers below:

<b>HOTEL</b>	<b>PHONE</b>	<b>AREA</b>	<b>DISTANCE TO SINAI</b>
Radisson at Cross Keys	410-532-6900	5100 Falls Rd. Baltimore, MD 21210 <a href="http://www.RadisonCrosskeys.com">www.RadisonCrosskeys.com</a>	5 minutes to Sinai
Pikesville Hilton	410-653-1100	1726 Reisterstown Rd. Pikesville, MD 21208 <a href="http://ww.hilton.com/pikesville">ww.hilton.com/pikesville</a>	15 minutes to Sinai
Red Roof Inn	410-666-0380	111 West Timonium Rd. Timonium, MD 21093 <a href="http://www.redroofinn.com/timonium">www.redroofinn.com/timonium</a>	10 minutes to Sinai
The Welcome Inn	410-668-7100	8729 Loch Bend Dr. Baltimore, MD 21234 <a href="http://www.welcomeintowson.com">www.welcomeintowson.com</a>	
Days Hotel Timonium	410-560-1000 800-235-3297	9615 Deereco Rd. Timonium, MD 21093 <a href="http://www.holidayinn.com">www.holidayinn.com</a>	10 minutes to Sinai
Extended-Stay America Timonium	410-628-1088	Exit 17 off 695 <a href="http://www.extendedstayamerica.com">www.extendedstayamerica.com</a>	10 minutes to Sinai
Ameri Suites	1-800-833-1516	4730 Painters Mill Rd. Owings Mills, MD 21117 <a href="http://www.Amerisuites.com">www.Amerisuites.com</a>	20 minutes to Sinai
Chase Suite Hotel	1-888-433-6141	10710 Beaver Dam Rd. Cockeysville, MD 21030 <a href="http://www.Chasehotelhuntvalley.com">www.Chasehotelhuntvalley.com</a>	15 minutes to Sinai
Rent-A-Car	410-363-2585 410-667-6100	Enterprise Rent-a-Car 6115 Reisterstown Road Baltimore, MD 21215 <a href="http://www.enterprise.com/car-rental">www.enterprise.com/car-rental</a>	Sinai Customer #18A2008

## 1.4 THE HACKERMAN-PATZ HOUSE



The Hackerman-Patz House is a comfortable and convenient place to stay – a home away from home – designed with the patient in mind. The front door of the Hackerman-Patz House is just steps from the Rubin Institute for Advanced Orthopedics, the International Center for Limb Lengthening, Sinai Hospital, and the campus of the Levindale Hebrew Geriatric Center and Hospital.

The staff at the Hackerman-Patz House is dedicated to keeping guests safe and secure and to helping to create an atmosphere that is as homelike as possible. You will have the freedom to maintain the privacy of your family so that you can draw strength from one another, and, if you choose, the opportunity to find support through interaction with other guests.

Guest suites at the Hackerman-Patz House resemble deluxe hotel rooms. They are equipped with beds, sitting area, private baths, microwave, refrigerator, coffee pot, room safe, telephone and censored (child-safe) cable television with a VCR-DVD combination. There is a common area that all guests may share.

### Check In/Out

**Guests may check in between 2 and 5 p.m. Guests should check out by 10 a.m. to avoid incurring charges for an additional night.** Notify the house manager immediately if you cannot check in or out as specified here. You will be given an access card to the front door and main gate when you check in. **Help is available 24 hours a day, seven days a week. During business hours (9:30 a.m. to 6:30 p.m.), the house manager may be reached by phone at 410-601-5163. The house manager may be paged at any time at 410-890-0651.** To page from a house phone, dial 9 before entering the pager number. Enter your call-back number when prompted.

### Telecommunications

Phones are located in each guest room and in various areas of the guest house. You will be assigned a phone extension when you check in. You may receive or make calls any time of day. Local calls are free. **Friends and family may reach you by calling 1-800-444-8233, but they must be able to provide your exact room extension number for the operator to connect the call.** To protect the privacy of our guests, the operator will be unable to connect to rooms by name only. Internet cable modem jacks are available in every guest room with two additional lines in the great room.

### Communal Areas

Patients and their families, along with invited visitors, may gather in our great room and enjoy the warmth of its stone fireplace. On sunny days, you may venture outdoors to the terrace.

Drinks and snacks are available for purchase in the vending room. You may also store food items in the large kitchen refrigerator.

There is also a multipurpose playroom and conference room for organized activities and meetings. Video games and systems are available to tenants but must be signed out through the house manager.

### **Eligibility**

LifeBridge Health does not discriminate on the basis of race, color, religion or creed. Vacancies are filled on the basis of availability, personal circumstances and the needs of LifeBridge Health.

Representatives from the Rubin Institute for Advanced Orthopedics, the Pediatrics department and the Cancer Institute review guest eligibility and length of stay. Once eligibility is determined, the house manager is contacted to complete the reservation process. Length of stay shall not exceed one year, and a review of eligibility should be monitored weekly by the department representative.

In general, patients must have at least three scheduled treatments or appointments per week, and they must begin within 24 hours of arrival. A social worker and the house manager will review stays exceeding one month.

### **Reservations**

**A two-week advance notice is required for all bookings.** Rooms are assigned on a priority basis and confirmed the day prior to your arrival. To prevent another family from being turned away unnecessarily, please notify the house manager promptly if your plans change.

### **Rates**

Please contact the house manager for a list of current room rates. Credit cards (Visa and MasterCard only) are necessary to secure a room and payment must be made in advance. If you are experiencing financial difficulties or must make alternate arrangement for payment, speak with your social worker prior to your arrival.

**The Hackerman-Patz House was made possible through the generosity of Willard and Lillian Patz Hackerman and their families. Operations are supported through guest fees, fundraising efforts and special friends of the Hackerman-Patz House at Sinai.**





## 1.5 PASTORAL CARE SERVICES

### *LifeBridge Chaplaincy Department at Sinai Hospital*

#### Hours of operation

Monday-Friday, 8:30 a.m. – 4:30 p.m

#### Department location

The main office and chapel is located in the Chapel Suite in the hallway between the main Sinai Hospital entrance and the Blaustein Building entrance on the first floor. We maintain three chapel worship and meditation facilities at Sinai Hospital. The main chapel, which is equipped also as a synagogue, is located in the corridor between the main hospital building entrance and the Blaustein building entrance on the first floor. This chapel is used for weekday Mincha (afternoon) prayers and other occasions. It is open at all times for prayer and meditation or to obtain prayer books or Bibles. A nondenominational meditation room is located in the Emergency department wing.

#### Contact information

To request chaplain visits during regular business hours or to make Shabbos arrangements including guest trays, religious holiday needs, bris arrangements, meetings or other non-emergency requests, please contact the department at 410-601-9680. For emergencies contact the chaplain on-call using the Reach-A-Chaplain pager: 410-232-PRAY (410-232-7729).

#### Services

Patient visitations are done on a daily basis by the pastoral care staff, students and volunteers under the direction of the director of the Pastoral Care and Chaplaincy Services department.

For the patient and their loved ones, we provide religiously approved advance directives and living wills and guidance for their use. Counseling is also provided for all who need it, and the appropriate sacraments are provided when requested.

The entire Pastoral Care staff provides information, programming and special worship opportunities for all holidays and holy day observances.

Our staff also provides, as appropriate, prayer books; Bibles; religious literature; and cultural, religious and spiritual audiotapes for use in patient rooms. A lending library on faith, religious concerns, and issues about life and death and general religious reading is available for use by patients and staff. Our staff is especially sensitive to and will make every effort to accommodate religious, dietary or other spiritual needs.

Special Christian services are available to patients and their families and hospital staff for Ash Wednesday, ecumenical Good Friday service, Easter and Christmas.

### **Services Specifically for Observant Jewish Patients**

Sinai Hospital has been sensitive and responsive to the needs of observant Jewish patients for over 130 years. Some of the following are ways we continue to show our sensitivity and meet the needs of our observant Jewish patients:

- Fresh kosher food, both meat and dairy under the supervision of the OU (Orthodox Union), is prepared daily on the premises.
- A kosher restaurant is available for family members, visitors and staff.
- Electric Sabbath candles, challah, grape juice, prayer books and Bibles are available.
- Manual bells are available for Shabbat to summon nurses.
- Signatures are not required when Jewish law prohibits writing. Verbal consent is enough.
- There is a special non-electronic Sabbath entrance into the hospital.
- When possible accommodations will be made for family members to spend Shabbat with their loved one.
- The entire Sinai Hospital complex is within the eruv.
- When possible, provisions for having a bris on the premises will be offered.
- Mincha Minyan services are held Monday through Friday during the months of April through October at 1 p.m.

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## SECTION 2

### 2.1 BABY CARE

#### *Who is this preterm infant, my baby?*

Progress in medical technology and the Neonatal Intensive Care Unit (NICU) has made the survival of smaller and smaller infants possible. As a result, we now have a new kind of human being: the preterm infant.

Of course, preemies are in many ways small versions of the full-term infant. However, preemies live in a world very different from that of either the fetus in the womb or the full-term infant at home; preemies have very different and specific needs. Preemies are unique and deserve unique and special treatment.

#### **The preemie of 24 weeks of gestational age would normally expect about 16 more weeks in the womb, where:**

- Oxygen and food are provided by the placenta, thus there is no need to breathe or digest.
- Temperature is comfortable and stable.
- There is protection from injury.
- The effects of gravity are not felt, and the baby moves easily and stays comfortable curled up (flexed).
- The baby feels the rhythms of the mother's changing day-night activity.
- The baby's nervous system does not have to respond to lots of different things (sights, sounds, touches).
- There are no intense lights, sounds and touches, although the baby does hear his or her mother's rhythmic heart and bowel sounds, can hear voices, and feels gentle touch from his or her own limbs and the fluid in the womb.



## SECTION 2

### 2.2 SKIN-TO-SKIN CARE

#### **What is skin-to-skin care?**

Skin-to-skin care is a method of holding a baby that involves skin-to-skin contact. The baby, who is naked except for a diaper and a blanket covering his or her back, is placed in an upright position against a parent's bare chest.

#### **How did skin-to-skin care come about?**

Skin-to-skin care came about as a response to the high death rate in preterm babies seen in Bogota, Columbia, in the late 1970s. There, the death rate for premature infants was 70 percent. The babies were dying of infections, respiratory problems and lack of attention. Researchers found that babies who were held close to their mothers' bodies for large portions of the day not only survived, but thrived. In the United States, hospitals that encourage skin-to-skin care typically have mothers or fathers provide skin-to-skin contact with their premature babies for one to several hours each day.

#### ***What are the benefits of skin-to-skin care?***

##### **The benefits of skin-to-skin care to the baby include:**

- Stabilization of the baby's heart rate
- Improved (more regular) breathing pattern
- Improved oxygen saturation levels (an indicator of how well oxygen is being delivered to all the infant's organs and tissues)
- Gain in sleep time
- More rapid weight gain
- Decreased crying
- More successful breastfeeding episodes
- Earlier hospital discharge

##### **The benefits of skin-to-skin care to the parents include:**

- Improved bonding, feelings of closeness with their babies
- Increased milk supply
- Increased confidence in ability to care for their babies
- Increased confidence that their babies are well cared for
- Increased sense of control

#### **Why does skin-to-skin care work?**

The benefits of skin-to-skin care listed have all been demonstrated in research studies. In fact, studies have found that skin-to-skin holding stabilizes heart and respiratory rates, improves oxygen saturation rates, better regulates an infant's body temperature, and conserves a baby's calories.

When a mother is doing skin-to-skin, the infant typically snuggles into the breast and falls asleep within a few minutes. The breasts themselves have been shown to change in temperature to accommodate a baby's body's changing temperature needs. In other words, the breast can increase in temperature when the infant's body is cool and can decrease in temperature as the baby is warmed. The extra sleep that the infant gets snuggling with mom and the assistance in regulating body temperature help the baby conserve energy and redirect calorie expenditures toward growth and weight gain. Being positioned on mom also helps to stabilize the infant's respiratory and heart rates. Finally, research has also shown that skin-to-skin care results in positive effects on brain development.

### **How to get started**

Your nurse will discuss skin-to-skin care with you.

#### **General instructions for performing skin-to-skin care are as follows:**

- Remove your bra and wear a blouse or shirt that opens in the front. (A hospital gown that opens in the front can be provided for you.) Screens or curtains will be provided for your privacy.
- The baby, wearing only a diaper and hat, will be placed on your bare chest in an upright position.
- Cover the baby with your shirt, gown or a blanket.
- Now simply relax and enjoy this bonding experience.
- Let your baby rest. This is not a time to play with your baby.

Fathers can provide skin-to-skin care for their babies too. The different feel of the father's body will provide different stimulation to the baby.

### **Giving developmental care**

Many nurseries are finding ways to help preemies develop as normally as possible during their stay in the hospital. This is called giving the preemie developmental care.

#### **Developmental care is designed to:**

- Prevent the brain from being injured by intense or painful stimulation
- Provide the kinds of everyday experiences that, to the best of what we know now, will help the baby to develop normally in all of these five areas: physiological, motor, sleep and wakefulness, attention, and self-regulation

A major goal of developmental care is to protect the preemie's brain and central nervous system. The five areas are the base for the baby's motor, mental and social development.

### **Why is developmental care important?**

A number of researchers have done studies on preemies up through school age and have found that they are more likely than children born full term to have various developmental problems. These can include problems associated with learning, coordination, language and behavior (for example, paying attention, sitting still). Because there is a lot of research that shows that what happens to animal and human infants on a day-to-day basis affects the way that the brain develops, we think that some of these problems may be due to the fact that the preemie's early months were spent in a world that is very different from and more stressful than that of a full-term baby.

Studies of developmental care have shown that by making the NICU work more “baby friendly,” some of these problems can be prevented.

### ***Increased risk of infection***

Infants born prematurely have greater risk for infections because the immune system, which fights off infection, is not fully developed. They are born with thin skin that can break or tear and allow germs to enter more easily. Infants also have to be treated with IVs and other tubes that puncture the skin and may increase the risk of getting an infection.

Upon admission and on a weekly basis, your baby is tested for methicillin-resistant *Staphylococcus aureus* (MRSA). This is for infection control precautions. If you have ever been treated for a skin infection or know you are MRSA positive, please let the baby's physician know. Please see the MRSA fact sheet on page 40 for more information and ask your nurse or physician whatever questions you may have. You will be notified if your baby is positive for MRSA.

### **How are germs spread?**

Germs can spread from people touching, breathing, sneezing and coughing, and from clothing. Germs may have also been passed to the infant from mother during delivery.

### **How can infections be prevented?**

- Washing hands or using hand sanitizer often (after using the restroom, using your cell phone, sneezing, coughing, blowing your nose, touching your hair or face, removing gloves, touching objects around infants' bed)
- Giving your baby breast milk if possible
- Removing IV catheters and tubing as soon as possible
- Wearing a mask if you are sick, or do not visit the NICU
- Not allowing visitors who are sick to visit



## SECTION 2

### 2.3 PHYSICAL ENVIRONMENT

In the physical environment of the NICU, there is a lot of equipment being used in and around the baby; a lot of people and machines that make noise; lighting that is often kept very bright so that the doctors and nurses can see well as they care for and examine the baby; a place to stay (an isolette or radiant warmer) that does not make it easy for the baby to be in a relaxed, curled up position; and many treatments that may be stressful or painful for the baby (e.g., suctioning, heel sticks for blood tests, having IVs placed, having X-rays or ultrasound, etc.). These treatments may mean that the baby is disturbed many times over the course of the day, disrupting sleep. For the very small preemie, just being handled for daily care (diapering, feeding) can be stressful.

#### **The physical environment can be changed to:**

- Reduce the amount of sound
- Reduce the amount of light
- Provide rhythms in light levels
- Provide some support for the baby's position
- Make treatments less stressful
- Reduce the number of times the baby is disturbed



#### *Sound*

#### **Why are loud sounds a concern?**

Loud sound is a concern because:

- It may damage the baby's ears and lead to loss of hearing.
  - The baby feels it as stressful.
1. The sound of the isolette motor is at a level (55-60 decibels) that is comfortable for adults. If the baby has respiratory equipment (mechanical ventilation, CPAP), this makes it noisier. Other sounds then raise levels to what an adult would find uncomfortable (75-85 db). Loud, sharp sounds can raise levels to 100-200 db, which may damage cells in the ear. This is more likely to happen when the baby is on certain medicines that make the ear sensitive.
  2. Loud or sharp sounds can cause physiological changes (high heart rate, fast breathing, apnea, a drop in blood oxygen levels). They also may startle the baby and disturb sleep, which is when babies do most of their growing.

#### **How can the level of sound be reduced?**

Sound levels can be reduced by talking quietly, closing doors and portholes gently, not dropping things on top of the incubator, and turning down machine alarms and phone ring levels.

#### **Are some sounds helpful?**

The sound that seems to relax and soothe preemies the most is the sound of your own voice. Talking and reading to your infant in a soft and gentle voice may be one way to provide sound that will calm your baby.

Keep in mind, however, that for the very small preemie, extra sound when other things are going on may be disturbing. It is important, therefore, to watch your baby when talking at the baby's bedside to be sure that he or she likes it.

## *Light*

### **Why is light a concern?**

Light is a concern because:

- Bright light may cause injury to the eye.
- Constant light may disturb body rhythms.
- Bright light may keep your baby from opening his or her eyes and looking around.

Studies done with animals show that bright light can damage the cells in the eye. Preemies are at risk for getting retinopathy of prematurity (ROP), changes in the eye that can lead to loss of vision, if severe. Although not yet proven, constant bright lighting may increase this risk.

Constant levels of light may slow the normal development of sleep-wake cycles, which is when babies grow the most. Preemies who have been in nurseries where the lighting is dimmed at night advance more quickly in their sleep-wake patterns. This means that they begin to spend more time during each sleep period in deep sleep and less time in light sleep sooner than babies kept in constant light.

Light can affect the level of arousal of your baby. In bright light the baby is less apt to open his or her eyes when awake, thus missing chances to explore the world and to interact with you and others.

### **How can the amount of light be reduced for my baby?**

Isolettes can be covered to block the amount of light reaching your baby. Laying a blanket over the top of the isolette is the easiest thing to do. Letting the blanket drape over the sides or using a specially fitted cover (now available commercially) can block light from the sides as well as the top of the isolette. You may see that the covers are cycled – off during the day and on during the night. With current monitors displaying heart rate, breathing and oxygen levels, the staff knows how your baby is doing even with the isolette covered.

When lights are dimmed, procedures requiring the use of extra light can be done with an additional light at your baby's bedside (e.g., a lamp or ceiling spot light). The staff also will try to be as quick as possible when the use of bright light is necessary.

If overhead phototherapy lights are being used, a special mask will be used to cover your baby's eyes. Staff also will try to reduce the amount of light other babies are exposed to during the treatment.

In some nurseries, lights are dimmed at night. This helps in starting a day-night sleep schedule and supports daily changes in hormone and temperature levels. The dimmed light also gives some extra protection from the higher light levels needed for daylight activities.

## ***Positioning***

### **Why is positioning a concern?**

Positioning is important because:

- The preemie cannot get into a comfortable position on his or her own.
- Over time, positioning affects your baby's motor development.

### **What is important to know about positioning?**

The preemie does not have the muscle strength to control movements of arms, legs or head that full-term infants have. It is hard for them to move against the force of gravity. Therefore, they tend to lie with their arms and legs straight, or extended, rather than appropriately tucked in, or flexed.

Being in an extended position for long periods of time can lead to stiffness or abnormal tone in the shoulders and hips, which can delay the baby's motor development.

It is not very comfortable or developmentally appropriate for the preemie to be on his or her back out straight, or extended. If left this way, some preemies may try hard to get into a more relaxed, curled-up position, using up energy that could be used for growing. Think how your baby would be curled up inside your womb.

Small preemies maintain better oxygen levels and temperature, and sleep better, when on their tummies or sides than when on their backs. (However, when the baby goes home, he or she should be put on the tummy only when awake, not for sleep.)

### **How can the baby be kept in positions that are comfortable and help motor development?**

Sometimes it is hard to place the preemie in a curled-up, flexed position because of necessary equipment, such as IVs, CPAP or mechanical ventilation. But usually it can be done, so the baby is positioned as developmentally appropriate as possible.

### **Guidelines for positioning include:**

- Place the baby on tummy (when in the NICU and on monitors) or side, with arms and legs flexed.
- Cover, clothe, wrap or swaddle the baby to help keep the fixed position. This also gives the baby the feeling of being cuddled.
- Make a "nest" around the baby to hold him or her in a flexed position. Nurseries use different ways to do this. Some use blanket rolls.
- To keep the baby in a flexed position, we use the "Snuggle UP" and bendy bumpers.
- Leave the baby's hands free so that he or she can get them to the face. Sucking the fingers or hand, and even just touching the face, is one way babies calm themselves.
- As a part of the nest, give the baby something to push against with his or her feet. This allows the baby to feel more stable.

- Encourage the baby to hold on to – grasp – something, like your finger, the edge of the blanket, a small rolled-up cloth or a pacifier. This helps the baby feel more stable.
- Your nurse will give you instructions on how to position your baby to facilitate comfort, rest and appropriate development of muscles.

## *Handling*

### **Why is handling preemies a concern?**

How preemies are handled is a concern because:

- It may lead to physiologic stress.
- It may lead to behavioral stress.

When handled for medical care, preemies often show that this is physiologically stressful by a rising heart rate or dips in heart rate (bradycardia); rising respiration rates or periods of holding the breath (apnea); falling levels of blood oxygen (desaturations); color changes to dusky or flushed; and other responses such as hiccups or yawning. Even pulling adhesive tape off can cause these responses.

During daily care, such as diapering and feeding, preemies may react in the same ways. When handled, preemies also may show in their behavior that this is stressful, for example, by more moving, more jerks, startles and tremors, and fussing or crying.

### **What is important to know about the effects of handling?**

When a baby's blood oxygen level drops (desaturations), this can directly affect the brain. Therefore, it is important to prevent this during activities that happen over and over again, such as taking temperature and blood pressure, diapering or feeding, and during treatments that are especially stressful or painful. Preemies learn. They learn that certain things are not comfortable or not pleasant. When this happens over and over, they may learn to dislike being touched.

### **How can the baby be handled to make it less stressful?**

Handling can be made less stressful to the preemie by using a developmental approach.

**This means:** Position the baby comfortably and securely and provide special supports to hold the baby in a flexed position during the handling. This includes containing or holding in the baby's arms and legs to keep him or her flexed and to prevent jerky movements.

Pace the care according to how the baby reacts. For example, stop (give the baby a break) and gently contain the baby when he or she starts to get upset, and don't start again until the baby has settled down.

Give the baby ways to keep himself or herself calm. This would include a pacifier, something to hold onto, something against which to brace his or her feet and helping him or her to keep hands up near the face to allow sucking on fingers.

Keep other stimulation at a minimum. This would include not talking or trying to make eye contact if the baby shows signs of stress, and keeping general noise levels low.



Most of all, adjust to the preemie's behavior as much as possible, letting him or her tell you what feels OK and what doesn't, and when to keep going, when to stop and when to start up again.

### **Touch**

Handling is touching. The sense of touch develops very early in fetal life. For very small preemies, the skin is so fragile that touching has to be done with great care. For preemies younger than about 30 weeks gestational age, studies show that touch may be more stressful and painful than soothing. For older preemies, however, gentle touching can be helpful.

Preemies react in different ways to different kinds of touch. A light, feathery touch may be upsetting. A firm, steady touch is more likely to calm the baby. Giving the stable preemie gentle human touch or massage for a short period every day has been shown to be helpful; for example, it may help babies gain weight faster. As with everything, how often the preemie is touched needs to be based on his or her responses.



## SECTION 2

### 2.4 YOUR BABY'S CUES

Learning how to read your infant's cues during your stay within the NICU will help you provide a deeper sleep and more relaxed atmosphere for your child. Being attentive to cues tends to improve the infant's vital signs and outcomes.

#### **Signs that your baby is content:**

- Calm face
- Sucks on fingers
- Grasps and holds on to people or objects
- Relaxed posture
- Breathing easy

#### **Signs that your baby is stressed:**

- Breathing is labored; stops for periods of time.
- Infant's face looks worried or grimaced.
- Baby arches his or her back.
- Skin looks pale, mottled.
- He or she stiffens and extends arms and legs.
- Baby holds hands in front of face.
- Baby hiccups or yawns.
- He or she spreads fingers (stop sign).
- Baby cries and can't be consoled.
- Body becomes limp.

#### **Signs that your infant is in pain**

- Increase in heart rate
- Spreads fingers or fists hands
- Extends legs
- Arches back



## SECTION 2

### 2.5 INFANT PAIN ASSESSMENT

While your infant is in the NICU, we use what is called a Premature Infant Pain Profile (PIPP) to monitor trends in pain. We assess your baby according to a pain chart before and during any procedure, such as heel sticks, IV placement, and so forth; or when receiving any pharmacological intervention continuously. The chart looks at the baby according to gestational age and certain behavioral attributes, such as:

- What is the baby's general state?
- Is the baby quiet or moving around?
- What are the baby's eyes doing? Are they grimacing?
- Are there any changes in the baby's vital signs, such as heart rate and oxygen saturation?

When the total score is 6 or below, we determine that there is minimal to no pain. On the chart, we document that number and any intervention used. If pain is documented at 7 or greater, we decide if we need to use pharmacologic (medications) or non-pharmacologic interventions. One hour after the intervention we reassess and document the baby's score again, and so on as necessary.

#### **Interventions: Pharmacologic vs. non-pharmacologic**

To prevent, eliminate or reduce the amount of pain and stress to your baby, the most appropriate environmental, non-pharmacological (behavioral) and pharmacological interventions will be used. When possible, we use the least invasive intervention possible. This could simply be repositioning the baby or swaddling or applying light touch without any stroking motion. Also, it is soothing and beneficial to give the baby a pacifier for nonnutritive sucking, or during a procedure giving the baby oral sucrose (sugar water) on the pacifier. Breastfeeding or skin-to-skin contact during or immediately after the procedure is also a way to calm and help relax your baby.

When pharmacologic intervention is warranted, your baby may receive the following medications: fentanyl, midazolam or Tylenol. Medications given during surgeries such as fentanyl and midazolam may need to be on a continuous infusion, or be administered every two to four hours as needed. The medications will be weaned from your baby to limit the possibility of withdrawal symptoms, which can occur when the baby is receiving the medications continuously over a significant period of time. Tylenol is usually administered for fevers, management of mild to moderate pain, immunizations and circumcisions.

**Please refer to the Premature Infant Pain Profile to learn how your baby is expressing signs and symptoms of stress and pain to you.**

## SECTION 2

### 2.6 GROWTH AND DEVELOPMENT

#### Corrected age

1. Your baby has two birthdays! The day your baby was born and the day you expected him or her to be born.
2. Your baby's development is looked at by considering:
  - Length of your pregnancy (gestational age)
  - Baby's age in weeks (calendar age)
3. "Corrected age" is calendar age + gestational age. If a baby is born at 28 weeks gestation and is six weeks old today, we expect the baby to act like a baby who was born today at 34 weeks.
4. We look at corrected age for growth and development until the baby is 2 years old.

#### Catch-up growth

1. The baby's gestational age, how sick the baby was and the length of sickness help determine how fast the baby grows the first year.
2. Babies who are healthy and eat well when they go home have a time of "catch-up growth." This is a time of weight gain and growth that is very fast. It lasts from the time the baby is about 36 weeks gestation until he or she is 2 1/2 months old (corrected age).
3. Babies who were very tiny (24-28 weeks) will have a slower and longer period of catch-up growth.
4. Babies who were very sick or who still have many medical problems when they go home also often have a slower and longer period of catch-up growth.
5. The baby should gain at least ½ ounce a day or 4 ounces a week when he or she goes home. Often babies gain much more.

#### Appearance

1. The baby's head may be long and flat on the sides. As the baby gets stronger, he or she turns the head more. The baby's head rounds out as he or she becomes older. The head shape makes his or her eyes look big and close together. This goes away also.
2. Many premature babies' feet turn out. They look like ballerina feet. When the baby begins to stand and walk, the feet will turn the correct way. If there is a problem with the baby's hips or there is a birth deformity of the feet, the baby may see a bone specialist (orthopedic doctor). Most of the time, this is not needed. The baby does not need special shoes. Tennis shoes are great for baby's feet and cost less than other shoes.



### **Preemie differences**

1. A premature baby at 40 weeks (when you expected the birth) acts a lot like a newborn baby.
2. He or she may have a softer cry and cry for short periods.
3. A premature baby may have jerky, jittery movements.
4. A premature baby may become pale or mottled when you take off his or her clothes, or if the baby is handled a lot or during feedings. This does not mean the baby is cold.
5. He or she may not seem quite as strong as a bigger newborn baby.
6. Babies who are less than 38-40 weeks gestation when they go home may seem to have shorter periods being awake and alert than a full-term newborn.
7. All babies are different. The sicker and smaller the baby, the more differences you may see for a while.
8. A premature baby who did fairly well in the NICU and whose corrected age is 40 weeks (date you expected the birth) is probably more like a full-term newborn than he or she is different.
9. Signs the baby is tired or too much is happening around him or her are: yawning, stretching, spitting up, getting pale, becoming limp, closing his or her eyes, looking away, arching the back and stiffening his or her arms and legs.

### **The first six months**

All babies are different. There is a range of time babies do things. The following is a guideline to help you. Remember to think of the baby's corrected age when looking at the baby for the first two years of life.



Newborn to 1 month old

Feeding

- Babies feed every 2 1/2 to four hours around the clock.
- Babies nurse 20-30 minutes each feeding or take 1 1/2 to 4 ounces of breast milk or infant formula by bottle.
- We suggest feeding the baby as much as he or she wants and as often as he or she wants it (on demand).
- Often babies have a wet burp or spit up a small amount during or after feedings.
- Burp babies every ounce or two or between each breast. (Breastfeeding babies may or may not need to burp.)

Sleeping

- Babies fall asleep almost anywhere.
- Babies may sleep about 16 hours a day, but they will wake every 2 1/2 to four hours for feeding at first.
- Sometimes a baby's eyes move under the eyelids and his or her body moves; other times the baby's body is totally relaxed. Both are normal parts of sleep.
- At the end of the first month, the baby may sleep 8½ hours at night and take three to four naps during the day. However, it may take several months before you see this pattern.

Seeing

- Babies see well 8-12 inches in front of their face.
- Babies may follow your face briefly. Babies will turn their eyes and turn their head to follow.
- Babies like human faces.
- Babies like dark and light contrasts – like black-and-white stripes or circles. Babies may like bright colors: red, yellow, green, blue, orange.

Hearing

- Babies like voices. Your baby may stop what he or she is doing, turn his or her eyes or head toward the sound. Your baby may startle or jump to a sudden loud noise.
- He or she may calm to the sound of soft music.
- Your baby may begin to move or become excited when you talk to him or her.

Reacting

- Most babies like to be picked up and held. This will not spoil the baby.
- Your baby may surprise you with a smile late in the first month.

Movement

- Babies need their head supported when you pick them up or hold them. Babies can keep it up by themselves for short periods of time.
- Babies keep their hands in a fist most of the time. They can hold a rattle, but drop it soon.
- Babies are able to raise their head up when they are on their stomach. A baby's head may bob up and down or he or she may keep it up off of the bed for several moments.
- Babies wiggle a lot and can turn and move.

Crying

- Babies cry when they are hungry, wet, want to be held or need to be burped. This is their only way to communicate.
- You learn to tell the difference between your baby's cries.
- Babies who are picked up and held when they cry seem to cry less when they are older because they have been given a sense of security.

1 month to 3 months old

Feeding

- Babies feed every 2½ to four hours during the day and usually have one or two night feedings.
- Babies drink about 4-6 ounces each feeding.
- Breast milk or formula is all babies need for nutrition.

Sleeping

- Babies sleep 15 hours a day and nap about three times during the day.
- Babies may have their days and nights mixed up.

Seeing

- Babies look for sounds by turning head in direction of sound.
- Babies follow toy dangled in front of them from side to side.

Hearing

- Babies make sounds when smiling.
- Babies “talk” a lot when spoken to, especially to a familiar voice.

Reacting

- Your baby recognizes your face.
- Your baby smiles easily at you.

Movement

- Babies keep their hands open.
- Babies can lift head off bed and lean on elbows while on tummy.
- Babies can hold head up, but it still bobs.
- Babies can hold object in their hands briefly

Crying

- Babies cry a lot to let you know they need something.
- You can tell differences in your baby’s cries.
- Babies can be soothed by being held and by the sound of your voice.
- Some babies can be calmed by sucking on their pacifier or hand.

3 to 6 months old

Feeding

- Babies may begin eating solid food like cereal around 6 months old or earlier if advised by their physician.
- Rice cereal is often started first. Feed the baby using a spoon. Do not use an “infant feeder” because this will make learning to use a spoon harder. Also, it will be more difficult to decide if your baby wants something to drink or something to eat.
- When the doctor adds other strained baby foods, they should be added one at a time with several days between new foods. This way you can tell if a food bothers the baby. The baby could have a rash, diarrhea or upset stomach.
- Babies need four to five feedings a day. They need to stay on breast milk or an infant formula until 1 year old.

Sleeping

- Your baby will sleep about 15 hours a day.
- Babies may wake at night, but are able to go back to sleep by themselves.
- You may get to sleep through the night!

Seeing

- Babies can see the same distance as adults at about 4 months of age.
- Babies can focus well from 3-20 inches.
- Babies watch and play with their hands by 3 months.
- Babies reach for toys using both hands.
- Babies put objects in their mouth.
- Babies follow with their eyes and head.
- Babies begin to reach for toys in front of them.

Reacting

- Your baby will smile and kick and show he or she is happy when you smile at him or her or when your baby sees you.
- Your baby turns his or her head to see you.
- He or she makes cooing or gurgling sounds.

Movement

- Babies lift their head when on back.
- While on tummy, babies are up on their arms with head up high.
- Babies roll over from their front to back and back to their front.
- Babies sit with support.
- Babies hold head steady with little bobbing.
- Babies like to be rocked.
- Babies hold rattle in either hand.
- Babies begin reaching for their feet when they are on their back.
- Babies pivot around when on their belly.

## SECTION 2

### 2.7 PLAY: PRE-TERM INFANT

Babies who are born at less than 37 weeks gestational age are unable to tolerate the play activities that a full-term baby can. Remember these babies should still be enclosed tightly in the mother's uterus (womb) where they are positioned with arms and legs bent. When they move, the walls of the uterus help to bring their arms and legs back close to their face and body. Also, they are not exposed to lights and the only noise they may hear is mom's voice. There are interactions parents can have with their pre-term baby even before they hold them to assist in improving their later development and to help them be more comfortable and sleep better. The baby can show you if he or she likes a specific interaction by behavioral cues.

#### *Pre-term babies (24-34 weeks gestation)*

##### **Things baby likes:**

- A finger or cloth roll to hold
- Cradling the top of baby's head and feet (with legs bent) in the parent's hands
- Slow movements
- Quiet, soothing voices
- Rolled soft blankets placed around the body (as a nest)
- Around 34 weeks, a pacifier to suck on, especially during gavage (tube) feedings

#### *Pre-term babies (35-40 weeks gestation)*

##### **Things baby likes:**

- Swaddling in a blanket with hands close to the face and legs bent.
- When holding the baby, position the baby's face about 12-14 inches from your face. Talk softly to the baby. The baby may open his or her eyes better if the lights are dim and the noise level around the baby is low.
- After 37 weeks, the baby may follow your face or turn toward your voice.
- Many good parent-infant interactions occur during feeding (breast or bottle).

**Remember: Watch your baby's cues. If your baby is showing signs of stress, just sit quietly with him or her.**

### 2.8 PLAY: TERM-AGE INFANT

#### *Newborn to 1 month*

##### **Things baby likes:**

- The sound of your voice. The baby shifts his or her eyes or may turn his or her head toward the sound.
- The sound of soothing music. Play music to the baby.
- Move your face to each side of the baby. Stay within 8-20 inches of the baby's face. You can adjust this distance depending on your baby's reaction. The baby will follow you briefly. He or she may also begin to look in an upward direction.
- Hold and cuddle the baby. Babies cannot be spoiled at this age!
- Rock the baby in your arms or use a rocking chair.



- Keep the baby warm.
- Many babies like to be wrapped tightly in a blanket (swaddled).

**Good toys:**

- Music boxes
- Comfort pillows
- Soft clothes
- Massage
- Rocking chair or crib
- Mobiles – especially bright or contrasting colors  
Hang the mobile 8–20 inches above the baby

**Remember: You are the best stimulation for your baby. Talk to your baby and wait for him or her to focus on your face.**

*1 to 3 months*

**Things baby likes:**

- Shiny, bright, mobile or toys above baby’s bed, but out of reach of baby.
- Watching bright colors (red and orange) or black and white. They turn their heads to follow toys moved in front of them.
- Shake bells or rattles to encourage your baby to watch them.
- You talking in a lively voice. He starts to coo, gurgle and “talk” back to you.
- Being on his tummy on the floor. He lifts his head and rolls from his front to his back or side.
- Smile. He smiles back at you.
- Dangle a toy in front of the baby when he is on his back or sitting in your lap. He gets excited and may be able to reach for it.
- Putting toys in his mouth.
- Hold, cuddle and rock baby.
- Place the baby in his or her infant seat so the baby can see from a different view.

**Good toys:**

- Rattles – different sizes and shapes; made out of different materials
- Crib gym – a toy with several toys on a rod that is hung across the crib or stroller. Often has a plastic ball with small bright wooden ball inside, handles to hold onto and a bulb to squeak. Baby looks, starts to reach and touch, then pulls and plays with toys.
- Stuffed toys – baby may hug and hold this toy. Many make noises or play music
- Busy boxes
- Comfort pillows
- Infant instruments
- Massage

## ***4 to 6 months***

### **Things baby likes:**

- Bright, noisy toys, squeaky rubber toys.
- Playing with his or her feet.
- Playing “peek-a-boo.”
- Being on a blanket on the floor.  
Babies can practice rolling from their back to their stomach.
- Seeing himself or herself in a mirror. Smiles at himself or herself or pats the mirror.
- Dangle a toy in front of the baby when the baby is on his or her back or sitting in your lap.  
The baby reaches for the toy with both hands.
- May start to roll on his or her belly and rock on hands and knees.
- Holding a toy in each hand. Begins to bang them together or on other things.
- Talking to your baby. Wait for a response, then mimic the response. This will encourage language development and the bond between you!
- Sing to your baby and play different types of music for him or her.

### **Good toys:**

- Bowls that fit into each other
- Mirror (non-breakable) – baby likes to see himself or herself
- Bathtub – baby likes to splash
- Bath toys – sponges cut into different shapes, toy boats, funnels, plastic scoops or cups to empty and fill
- Toys that he or she can hold
- Soft books
- Patmat
- Squeeze toys
- Soft blocks
- Exerciser
- Balls (wooly or soft)
- Soft dolls or animals

## ***Choosing toys***

1. **Toys should be safe!**
2. Toys should not have small loose parts or sharp edges.
3. Remember the baby’s age when you buy or make toys. Baby likes big, colorful toys that do lots of things.
4. Make sure baby cannot choke on or swallow toys he or she places in the mouth.
5. Baby walkers are not safe and actually do not help babies walk sooner. One option would be an “Exersaucer.”

## SECTION 2

### 2.9 FUSSY BABIES

#### **What can I do if my baby has increased fussiness, increased activity, or trembling or shaking?**

Try one or more of the following:

1. Turn down the lights.
2. Reduce the noise around the baby (radios, TV, loud talking).
3. Swaddle the baby in a cotton blanket (tightly wrap the blanket around the baby with the arms crossed on the chest and the legs bent up and close to the body).
4. Hold swaddled infant close.
5. Rock infant slowly and rhythmically (most babies like to be held straight up and down).
6. Use a “snuggle” or front pack to secure the baby close to you.
7. Give the baby a pacifier.
8. Provide background noise (fan, hair dryer, vacuum cleaner, etc.). This seems to calm babies.
9. Provide firm, calm touch to the mid-chest, back or feet of the baby.
10. Give infant a warm, soothing bath.
11. Touch trembling body part firmly and calmly – this will help the trembling stop.
12. Watch for signs of baby tiring and decrease stimulation.

#### **My baby has difficulty going to sleep, has irregular sleeping patterns.**

##### **What can I do?**

Try one of the following:

1. Darken the room.
2. Keep noise level low (radios, telephones, TV, conversation).
3. Keep baby’s bed away from noisy areas.
4. Give your baby a pacifier.
5. Avoid bouncing or jiggling your infant before bedtime.
6. Speak in a soft voice.
7. Play soft, soothing music; hum; or turn on a vacuum.
8. Rock baby gently and slowly.
9. Swaddle baby in a soft blanket or use a sleep sack.
10. Avoid waking up sleeping infant unless for feeding.
11. Give your baby a warm bath prior to bedtime.
12. Take your baby for a stroller ride or car ride.
13. Don’t talk to infant when feeding especially during nighttime feedings.

**How can I help my baby when he or she becomes stiff or rigid in the arms and legs?  
Your baby needs to be relaxed so he or she can move his or her arms and legs to explore the environment.**

Try one or more of the following:

1. Bathe baby in warm water.
2. Try gentle, calming massage.
3. Swaddle baby with arms and legs close to the body.
4. Don't place your baby on his or her back (except when sleeping), as this often causes arching. Instead put baby on his or her tummy to encourage development of flexion (muscle movement that helps your baby bend).
5. Don't use a walker, as this increases the stiffness of the legs. Discourage standing baby on your lap.
6. Carry or hold the baby in a semi-reclining position with shoulders forward.
7. Use an infant carrier to support your baby in a semi-curved position that will allow him or her to get his or her arms to midline (center of body). This is important so baby will be able to learn to bring his or her hands together.

**What can I do when my baby avoids eye contact with me or has difficulty focusing and doesn't enjoy playing with me?**

Your baby is more likely to respond to you when he or she is awake with eyes open, not actively moving and quietly alert. While adults can talk, listen, see and move all at the same time, your baby may not be able to handle all this. Swaddling your baby in a blanket may help him or her to become quiet. Your baby will be more likely to watch your face or listen to you when you hold him or her upright (12-18" from your face). There is a wide range of "normal" development. You need to encourage your baby to develop head control and to develop balance between muscle groups. This will allow your baby to learn to roll, sit up, crawl and walk. Play with your baby in a variety of positions. It is important for your baby to spend time on his or her tummy developing muscle strength and coordination. Placing your baby in a standing position too early may make the muscles, which straighten the legs, too strong. This may slow down your baby's ability to sit by himself or herself and to creep. Constant wiggling in jump seats and walkers may distract your baby from using emerging hand and eye-hand skills.

**What can I do for my baby – my baby is a poor feeder, often spitting up or vomiting?  
My baby also has a poor suck.**

1. Hold baby in a sitting position, slightly curved during the feeding.
2. Keep infant's chin tucked downward so head and neck are not tilted back.
3. If sucking is difficult for baby, support the infant's chin and both cheeks with your hand to increase the baby's sucking ability.
4. Play soft, rhythmic music. Rhythmical music may help your baby get into a steady suck-swallow pattern.
5. Offer frequent small feedings.
6. Feed your baby in a quiet, dimly lit room.
7. Feed slowly and burp frequently.
8. Hold bottle upright to avoid air bubbles.

## SECTION 2

### 2.10 NEVER SHAKE YOUR BABY

#### **Caring for your baby**

Caring for a baby or young child is hard work. A baby needs care night and day. This includes feeding, changing and cuddling. All parents sometimes feel tired and short-tempered. Babies cry for many reasons. Some babies cry a lot. This crying can make parents worried, tense and frustrated. All parents have these feelings, and these feelings are normal. But, it's never OK to take them out on your baby.

#### **Never shake or hit your baby.**

If you do, it could lead to brain damage, blindness, mental retardation and even death. Children under age 2 are the most at risk. Their heads and necks are very weak. Shaking a baby just once can hurt your baby for life. Always handle your baby with care. Rock your baby gently. Never play roughly, bounce or toss your baby, or jerk or swing your baby by the arms.

#### **How to handle your anger**

If you start to feel angry (all parents do sometimes):

- Take a break. Make sure that your child is in a safe place and go to another room.
- Count to 10. Take some deep breaths.
- Ask for help. Have your partner, a friend or a relative care for the baby for a while.
- Don't take your baby's crying personally. Crying is how babies talk. Your baby is not trying to drive you crazy. It's up to you to keep your cool. You can do it!

#### **How to handle a crying baby**

There are safe ways to calm your baby. Make sure that your baby is not:

- wet
- hungry
- lonely
- too hot or cold

Go outside and take your baby for a walk. Keep your baby close to you. Babies need a lot of holding, carrying and gentle rocking. Sometimes a baby won't stop crying no matter what you do. You have to be patient during these times. Remember that extra care and attention will not spoil your baby. All parents need help. When you need help, call a health care provider. He or she can make sure your baby is healthy. Ask for parenting tips and tips for helping your baby stop crying. Take a parenting class at your local community college, health clinic or hospital. Join a support group for new parents. Ask your health care provider, local hospital or clinic for information.

**Enjoy your baby!**  
**Shaking a baby is never OK.**  
**Handle your baby with care.**



## SECTION 2

### 2.11 DIRTY DIAPERS

#### **Voiding (making urine)**

1. Babies wet their diapers almost hourly. However, most of the time they are changed around feeding times, when they wake in the morning and when you put them down at night.
2. Your baby's diaper should be very wet six to eight times in 24 hours.
3. If the urine is dark and your baby has not wet his or her diapers six to eight times a day, your baby may not be getting enough formula or breast milk. Notify the doctor. Babies become dehydrated (lose water and fluid) quickly. Babies who are sick do not eat well and do not wet as often.

#### **Stools or bowel movements**

1. Babies' bowel movements (BMs) are usually either yellow or dark brown in color by the time they go home. Frequency and color are related to individual differences and type of milk.
2. Some babies have a BM with every feeding and some have a BM every day or two. Do not worry about the time between BMs unless the stool is like small, hard pebbles or the time since the last BM has been three to four days.
3. It is normal for babies to grunt, strain and turn red when having a BM. This does not mean they are constipated!

#### **Constipation**

1. If your baby's stools are like little rocks, your baby is constipated.
2. The formula is not the cause of constipation.  
Iron in the formula is not the cause of constipation.
3. Call the doctor if your baby is having frequent problems with BMs.
4. Check with your baby's doctor before using Karo syrup, Maltsupex or any suppositories.
5. If the problem continues for several days or your baby cries for a long period when having a BM, call your doctor.
6. If your baby has infrequent BMs but is eating well and does not seem uncomfortable, do not worry.

#### **Diarrhea**

1. Diarrhea is a large increase in the number of BMs your baby usually has or stools that become looser in consistency. Normal BMs are soft with some form or are mushy or pasty.
2. Diarrhea is watery stools or stools with a water ring around them.
3. Diarrhea can be a symptom of illness or food intolerance.
4. Babies dehydrate (lose fluid and water) easily and quickly with diarrhea.
5. If your baby has frequent watery stools in a short time (six to eight hours), call your baby's doctor. The doctor may stop the formula and have you feed your baby a special clear liquid that gives your baby minerals. You can buy it in most grocery stores.

**Signs of dehydration**

1. Dry mouth or thick saliva.
2. Small amounts of dark urine in diaper.
3. Soft spot (fontanel) on head sinks in when baby is held upright or in sitting position.
4. Skin forms a “tent” when pinched and stays pinched up.
5. Dark circles around his or her eyes.
6. Baby may be fussy, sleepy, not hungry, or difficult to wake up.

**Call your baby’s doctor if the baby has any of these signs.**

## SECTION 2

### 2.12 CARE OF YOUR NEWBORN'S PENIS

#### **Circumcision**

1. Circumcision is the removal of the foreskin from the tip of the penis so the head of the penis is exposed.
2. Complications of circumcision include excessive bleeding, infection, pain and surgical injury to the penis. You can request local anesthesia for your baby to prevent pain.
3. Parents should discuss their options and reasons for having a circumcision performed on their baby with the doctor.

#### **Circumcision care**

1. Little special care of the circumcised penis is necessary. Rinse the circumcision area at each diaper change by squeezing warm water over the tip of the penis. You may use Vaseline or A&D ointment on the tip of the penis with each diaper change for the first few days after the circumcision. This may prevent the circumcision site from sticking to the diaper. After the circumcision is healed you can bathe your baby in a tub without fear of harming the circumcision or penis.
2. There should be no bleeding. The head of the penis may show signs of irritation and appear whitish or yellowish in places as it heals.
3. If a gauze is used, it usually stays on for 24-48 hours. Simply wet with water to loosen it and slowly unwind to remove.
4. Call the doctor if the penis becomes excessively red or swollen, or has unusual drainage that is green or smelly, or if your baby does not pass urine for longer than eight hours.

#### **Care of the uncircumcised baby**

1. Care of the uncircumcised boy is quite easy. Washing and rinsing your baby's genitals (private parts) daily is all that is needed.
2. Do not pull back the foreskin (skin covering the tip of the penis) in an infant. Forcing the foreskin back may harm the penis, causing pain, bleeding and possibly scar tissue. The natural separation of the foreskin from the tip of the penis may take several years. When the boy is older, he can learn to pull back the foreskin and clean under it daily.

## SECTION 2

### 2.13 TEMPERATURE TAKING

If your baby appears sick, you may want to take his or her temperature. Fever is a sign of illness. However, sometimes a small baby's temperature will drop rather than rise when he or she is sick.

**There are three ways to take a temperature:**

- **Axillary (armpit)** – takes three to four minutes to register. This method may be used in babies under 6 months or children up to 4 years.
- **Rectal (in the bottom)** – takes two to three minutes to register. This method may be used in children over 6 months and less than 6 years.
- **Oral (mouth)** – takes two to three minutes to register. Child should be cooperative and over 4 years old to use this method.

**Taking a temperature**

1. Take the temperature when your baby is quiet.
2. Body temperature varies depending on the amount of activity, emotional stress, type of clothing worn and temperature of the environment.
3. When reporting fever, always tell the doctor the exact thermometer reading and where the temperature was taken.
4. We recommend using the axillary (armpit) temperature on babies less than 6 months of age.
5. If using a digital thermometer, press power button and wait until display appears. This indicates the unit is operational and in good condition. Follow the directions for taking a temperature.

**Definition of fever**

Generally, fever is a temperature over 99 degrees F if taken in the armpit or over 100 degrees F if taken rectally. Ask your doctor when he or she would like to be notified if your child has a fever.

**Taking an axillary temperature (under arm)**

1. Hold the thermometer snugly in the armpit, making sure the bulb is completely covered between your baby's arm and side.
2. Hold the thermometer there for three to four minutes.
3. Remove from under the arm and read the thermometer.
4. When reporting your baby's temperature, tell the nurse or doctor that it was an axillary temperature.
5. Axillary temperatures are slightly lower than rectal or oral temperatures.

### **Taking a rectal temperature (in the bottom)**

1. Select a thermometer with a stubby-type bulb.
2. Moisten lower portion of thermometer with Vaseline or K-Y jelly.
3. Place infant on his or her stomach and across your lap.
4. Spread the buttocks with one hand to expose the anal opening and lay that arm along your baby's back to prevent your baby from moving.
5. Insert thermometer with your other hand, slowly and gently, just far enough for bulb to pass the anal sphincter (muscle). This is about 1 inch.
6. Hold thermometer in place for approximately two to three minutes.
7. Remove gently in a straight line and read it.

### **Care of thermometer**

1. Draw thermometer through soapy cotton ball or tissue.
2. Rinse in cool water.
3. Store in safe place, out of the reach of children.

### **Call the doctor if ...**

Baby has fever over 100 degrees F axillary (under arm) or 101 degrees F rectal, or vague symptoms:

1. Irritability (crying or fussy)
2. Poor feeding
3. Floppy or listless
4. Breathing is difficult
5. Coughing
6. Does not look good or has poor color
7. Temperature is less than 97 degrees F
8. If your baby feels hot to touch and you are unable to read a thermometer
9. Fever is present for more than three days
10. Fever with abnormal movements

**Remember: A normal temperature is around 98 degrees F.**

### **Treating fever**

1. If your baby is less than 6 months of age and has a fever, call your baby's doctor before giving acetaminophen (Tylenol, Tempera, Liquiprin, Panadol, or ibuprofen or Advil).
2. Get the correct dosage from your baby's doctor.
3. Do not use medicine for more than three days without talking with the doctor.
4. **Keep all medicine out of the reach of children.**
5. **Children should not be given aspirin.** Several studies link aspirin use in children with Reye's syndrome, a severe illness that often is fatal.



## SECTION 2

### 2.14 BATHING THE BABY

#### **When to bathe the baby**

1. You do not need to bathe your baby every day as long as the diaper area and skin folds are kept clean. Bathing may also be used as a comfort measure.
2. Babies often cry and act startled when placed in water for their bath. Premature babies who startle easily and have tremors seem to fuss more when their clothes are removed and they are placed in the water. This will improve as your baby matures and becomes older.
3. Bathe your baby anytime that is convenient for you. Before feedings is usually a good time because most babies fall asleep after eating. If your baby has trouble feeding, it may be better to wait and bathe him or her between feedings.
4. Your nurse will explain types of bathing and methods that are developmentally appropriate for your baby.

#### **Bath supplies**

You will need a washcloth, towel for drying, large towel to place baby on, mild soap and shampoo, clothes, diaper, and basin or tub.

#### **How to bathe the baby**

1. There are two ways to bathe your baby: sponge bath and tub bath.
2. Gather all the items you need for the baby and place them so you can reach them.
3. Make sure the room you are bathing your baby in is warm – at least 75 degrees F. You may want to turn up the heat in the room!
4. Do not leave baby unattended at anytime.

#### **Sponge bathing**

1. You may give a sponge bath on the bed, a counter or on a table. If using a hard surface, you will want to place something waterproof on the surface with some padding over it.
2. Wash your baby's face with a washcloth and clear warm water only.
3. Lightly soap the rest of your baby when and where needed with the washcloth or your hand. You may want to wash, rinse and dry small areas at a time. This can help keep your baby warm.
4. Wipe the soap off by gently going over the body several times with the rinsed washcloth, paying attention to creases.
5. Dry and swaddle baby.
6. The scalp and hair can be shampooed. Shampooing the scalp last is important in maintaining babies' temperature as they lose most of their body heat through their scalps.

### **Tub bathing**

1. Before starting the bath, gather everything you will need.
2. Bath can be given in a washbowl, kitchen sink or baby tub placed on a table.  
It is more comfortable if you can bathe your baby at your level.
3. Water should be comfortably warm, not too hot or cold.  
First test the water with your elbow or wrist.
4. Use a couple of inches of water in the tub until you get used to handling your baby.  
A tub is less slippery if you line it with a towel or diaper.
5. Hold your baby so his or her head is supported on your wrist with the fingers of the same hand holding your baby in the armpit.

**Never take your hands off your baby during the bath.  
Never leave the baby unattended.**

6. Wash the baby's face with a washcloth without soap.
7. Soap the rest of your baby's body, arms and legs using the washcloth or your hand. If the skin becomes dry, don't use the soap except once or twice a week.
8. If you are afraid of dropping your baby, soap him or her on the table and rinse him or her off in the tub. Hold your baby securely.
9. Use a towel to pat dry.
10. The scalp needs to be shampooed only once or twice a week. Rinse the scalp with a damp washcloth several times. Take care not to get soapy water in your baby's eyes.
11. Wash only the outer ear and the entrance to the ear, not inside. Wax is formed in the ear to protect and clean it. Do not clean nostrils or ear canals with cotton-tipped swabs.

### **Lotions and powders**

1. Babies do not need additional lotion, oil, cream or powders on their skin. Often these products result in rashes. Oil should not be placed on the hair because it frequently leads to seborrhea – a condition like dandruff.
2. Powders should be avoided because they can get into your baby's breathing passages. Skin and urinary tract infections have been linked to use of powder.
3. When you choose to use lotions, especially for your preemies, use products without perfumes or dyes as they are less irritating to their sensitive skin.

### **Other hints**

1. If your baby has cradle cap (flaky scalp – especially over the soft spot), use a soft toothbrush or baby brush to clean the scalp and brush scalp daily with a baby brush.
2. Use a mild soap.
3. The circumcision should be healed before a tub bath is given.
4. Sponge baths are usually given until the umbilical cord falls off and heals.

## SECTION 2

### 2.15 CORD CARE

1. Usually the premature baby's cord has dried and fallen off by the time he or she goes home.
2. If the umbilical cord remains, sponge bathe rather than tub bathe the baby until the cord has fallen off and the belly button has completely healed.
3. Avoid best as possible from getting the cord wet.
4. Try to keep the diaper below the belly button until the cord has completely healed. This lets air get to the cord and dry it.
5. Call the doctor if the belly button becomes red, bleeds or smells bad.

### 2.16 BULB SYRINGE

#### **When to use the bulb syringe**

1. A bulb syringe is used to clean your baby's nose and mouth of formula or mucus. You may use it when your baby spits up, has a stuffy nose or sneezes (this is how your baby clears his or her nose). We suggest you keep a bulb syringe close to your baby especially during feedings.
2. It is important to clear the mouth first and then the nose if your baby spits up so he or she will not choke. Babies breathe mainly through their nose during the first few months of life, so it is also important to keep it clean.

#### **Using the bulb syringe**

1. To use, first squeeze the bulb until it is collapsed. Place it in one nostril and quickly release the bulb. This will bring the formula or mucus into the bulb.
2. Remove the bulb syringe from the nose and squeeze the bulb quickly into a tissue to get rid of this material. Repeat for the other nostril (and mouth, if necessary).
3. You may use the bulb syringe as often as needed.

#### **Cleaning the bulb syringe**

Clean the bulb syringe daily with warm soapy water and rinse in hot water. Be sure to clear the inside of the bulb by squeezing the bulb while the tip is in the soapy water. Rinse by repeating the procedure with clean hot water. A dirty bulb syringe can be a source of infection.

## SECTION 2

### 2.17 NOSE DROPS

#### **Saline nose drops**

Saline nose drops are used to clean your baby's nose, especially when he or she has a cold or congestion (stuffy nose). Homemade saline (salt water) nose drops are recommended because over-the-counter nose drops may contain drugs that are harmful to your baby.

#### **Making nose drops**

Saline (salt water) nose drops can be made as follows. You will need to buy a dropper at the pharmacy:

- Add  $\frac{1}{2}$  teaspoon of table salt to 8 ounces of warm tap water.
- Salt will dissolve in the warm water.
- Allow to cool before using.

#### **How to use nose drops**

1. Place three to four drops in one side of your baby's nose while the head is tilted slightly back. Suction with the bulb syringe. Repeat on the other side. Baby may cough, sneeze or swallow part of the solution. This is normal.
2. Saline nose drops can be used whenever needed. If your baby has a cold or nasal congestion that makes feeding difficult, use the nose drops before feedings.
3. Homemade saline nose drops should be made daily.
4. Store the saline in a clean bottle and use a clean dropper (washed in hot, soapy water, rinsed well with hot water).
5. Using a cool mist humidifier may also help to relieve your baby's congestion. Be sure to change the humidifier water daily. Because bacteria and mold can grow wherever there is water, disinfect the humidifier every two or three days per manufacturer instructions.

#### **Humidifiers**

1. Your doctor may recommend use of a cool mist vaporizer or humidifier for your baby's stuffy nose.
2. For safety, you should always use cool mist.

## SECTION 2

### 2.18 IMMUNIZATIONS

Immunizations are medicines given to protect your child against certain harmful diseases. All of these diseases still occur. For some, there is no cure. All can cause permanent disability; some can cause death. Immunizations are given by mouth or by injection (shots).

1. The American Academy of Pediatrics suggests the premature baby receive immunizations on the same schedule and dose as full-term infants.
2. Immunization may be delayed if the baby has a cold or fever; however, this is not always necessary. Notify your health care provider of your baby's symptoms and he or she will decide whether or not to delay the immunizations. The hepatitis B vaccine is delayed if your baby weighs less than 3 pounds.
3. The oral polio vaccine cannot be given when the baby is a hospital patient. In the hospital, your baby will be given a shot for the vaccine. The American Academy of Pediatrics recommends that the first two doses of polio vaccine be given as a shot.
4. Tell the doctor or health department nurse if the baby is on phenobarbital or another medicine for seizures.
5. The baby's doctor will decide with you the exact schedule for your baby.
6. Bring the baby's immunization record (shot book or card) to each doctor's appointment.

Immunizations are usually given according to a special schedule. **Refer to the "Meds" tab for a table of the recommended immunization schedule. (page 32)**

**Your child cannot get into school without up-to-date immunizations.**

#### **Call the doctor if:**

1. Fever is above 103 degrees F and does not come down with acetaminophen (see Temperature Taking section).
2. Crying cannot be calmed or if baby is extremely sleepy or floppy.
3. Unusual high-pitched cry.
4. Short period of limpness or paleness.
5. Sleepiness or difficulty in waking the baby.
6. Seizures or fits.



## VACCINE INFORMATION STATEMENT

# Your Baby's First Vaccines

## What You Need to Know

Many Vaccine Information Statements are available in Spanish and other languages. See [www.immunize.org/vis](http://www.immunize.org/vis)

Hojas de información sobre vacunas están disponibles en español y en muchos otros idiomas. Visite [www.immunize.org/vis](http://www.immunize.org/vis)

Your baby will get these vaccines today:

- DTaP       Polio  
 Hib       PCV13  
 Hepatitis B

(Provider: Check appropriate boxes.)

### 1 Why get vaccinated?

These vaccines can protect your baby from 7 childhood diseases:

#### 1. Diphtheria

**Signs and symptoms** include a thick coating in the back of the throat that can make it hard to breathe.

**Diphtheria can lead to** breathing problems, paralysis and heart failure.

- About 15,000 people died each year in the U.S. from diphtheria before there was a vaccine.

#### 2. Tetanus (Lockjaw)

**Signs and symptoms** include painful tightening of the muscles, usually all over the body.

**Tetanus can lead to** stiffness of the jaw that can make it difficult to open the mouth or swallow.

- Tetanus kills 1 person out of every 5 who get it.

#### 3. Pertussis (Whooping Cough)

**Signs and symptoms** include violent coughing spells that can make it hard for an infant to eat, drink, or breathe. These spells can last for several weeks.

**Pertussis can lead to** pneumonia, seizures, brain damage, or death.

#### 4. Hib (*Haemophilus influenzae* type b)

**Signs and symptoms** can include fever, headache, stiff neck, cough, and shortness of breath. There might not be any signs or symptoms in mild cases.

**Hib can lead to** meningitis (infection of the brain and spinal cord coverings); pneumonia; infections of the blood, joints, bones, and covering of the heart; brain damage; and deafness.

- Before there was a vaccine, Hib disease was the leading cause of bacterial meningitis in children under 5 years of age in the U.S.

#### 5. Hepatitis B

**Signs and symptoms** include tiredness, diarrhea and vomiting, jaundice (yellow skin or eyes), and pain in muscles, joints and stomach. But usually there are no signs or symptoms at all.

**Hepatitis B can lead to** liver damage, and liver cancer. Some people develop chronic (long term) hepatitis B infection. These people might not look or feel sick, but they can infect others.

- Hepatitis B can cause liver damage and cancer in 1 child out of 4 who are chronically infected.

#### 6. Polio

**Signs and symptoms** can include flu-like illness, or there may be no signs or symptoms at all.

**Polio can lead to** permanent paralysis (can't move an arm or leg, or sometimes can't breathe) and death.

- In the 1950s, polio paralyzed more than 15,000 people every year in the U.S.

#### 7. Pneumococcal Disease

**Signs and symptoms** include fever, chills, cough, and chest pain.

**Pneumococcal disease can lead to** meningitis (infection of the brain and spinal cord coverings), blood infections, ear infections, pneumonia, deafness, and brain damage.

These diseases are much less common than they used to be. But the germs that cause them still exist, and even a disease that has almost disappeared will come back if we stop vaccinating. This has already happened in some parts of the world. **When fewer babies get vaccinated, more babies get sick.**

Babies usually catch these diseases from other children or adults, who might not even know they are infected. A mother with **Hepatitis B** can infect her baby at birth. **Tetanus** enters the body through a cut or wound; it is not spread from person to person.



U.S. Department of  
Health and Human Services  
Centers for Disease  
Control and Prevention

**Five Childhood Vaccines** can protect your baby from these seven diseases:

Vaccine	Number of doses	Recommended ages	Other information
DTaP (diphtheria, tetanus, pertussis)	5	2 months, 4 months, 6 months, 15-18 months, 4-6 years	Some children should not get pertussis vaccine. These children can get a vaccine called DT (diphtheria & tetanus).
Hepatitis B	3	Birth, 1-2 months, 6-18 months	
Polio	4	2 months, 4 months, 6-18 months, 4-6 years	An additional dose of polio vaccine may be recommended for travel to certain countries.
Hib ( <i>Haemophilus influenzae</i> type b)	3 or 4	2 months, 4 months, (6 months), 12-15 months	There are several Hib vaccines. With one of them the 6-month dose is not needed.
PCV13 (pneumococcal)	4	2 months, 4 months, 6 months, 12-15 months	Older children with certain health conditions may also need this vaccine.

Your healthcare provider might offer some of these vaccines as **combination vaccines** — several vaccines given in the same shot. Combination vaccines are as safe and effective as the individual vaccines, and can mean fewer shots for your baby.

**2 Some children should not get certain vaccines**

Most children can safely get all of these vaccines. But there are some exceptions:

- A child who is sick on the day vaccinations are scheduled might be asked to come back for them at a later date.
- Any child who had a life-threatening allergic reaction after getting a vaccine should not get another dose of that vaccine.

A child who has a severe (life-threatening) allergy to a substance should not get a vaccine that contains that substance. Some of these vaccines contain neomycin, streptomycin, yeast, lactose, sucrose, or latex.

**Tell your doctor if your child has any severe allergies, or has ever had a severe reaction after any vaccination.**

**Talk to your doctor before your child gets...**

**...DTaP vaccine**, if your child ever had any of these reactions after a previous dose of DTaP:

- A brain or nervous system disease within 7 days,
- Non-stop crying for 3 hours or more,
- A seizure or collapse,
- A fever of over 105°F.

**...Polio vaccine**, if your child has a severe allergy to the antibiotics neomycin, streptomycin or polymyxin B.

**...Hepatitis B vaccine**, if your child has a severe allergy to yeast.

**...PCV13 vaccine**, if your child has a severe allergy to yeast, or ever had a severe reaction after a dose of DTaP (or other vaccine containing diphtheria toxoid), or after a dose of PCV7, an earlier pneumococcal vaccine.

**3 Risks of a Vaccine Reaction**

Vaccines, like medicines, can cause side effects.

Most vaccine reactions are **not serious**: tenderness, redness, or swelling where the shot was given; or a mild fever. These occur soon after the shot is given and go away within a day or two. They happen with up to about half of vaccinations, depending on the vaccine.

**Polio, Hepatitis B and Hib Vaccines** have been associated only with these kinds of mild reactions.

Other childhood vaccines have been associated with additional problems:

**DTaP Vaccine**

**Mild Problems:** Fussiness (up to 1 child in 3); tiredness or poor appetite (up to 1 child in 10); vomiting (up to 1 child in 50); swelling of the entire arm or leg for 1-7 days (up to 1 child in 30) — usually after the 4th or 5th dose.

**Moderate Problems:** Seizure (1 child in 14,000); non-stop crying for 3 hours or longer (up to 1 child in 1,000); fever over 105°F (1 child in 16,000).

**Serious problems:** Long term seizures, coma, lowered consciousness, and permanent brain damage have been reported following DTaP vaccination. These reports are rare.

**Pneumococcal Vaccine**

**Mild Problems:** Drowsiness or temporary loss of appetite (about 1 child in 2 or 3); fussiness (about 8 children in 10).

**Moderate Problems:** Fever over 102.2°F (about 1 child in 20).

**Problems that could happen after any vaccine:**

- Brief fainting spells can happen after any medical procedure, including a vaccination. Sitting or lying down for about 15 minutes can help prevent fainting, and injuries caused by a fall.
- Severe shoulder pain and reduced range of motion in the arm where a shot was given can happen, very rarely, after a vaccination.
- Severe allergic reactions from a vaccine are very rare, estimated at less than 1 in a million doses. If one were to occur, it would usually be within a few minutes to a few hours after the vaccination.

As with any medicine, there is a very remote chance of a vaccine causing a serious injury or death.

The safety of vaccines is always being monitored. For more information, visit: [www.cdc.gov/vaccinesafety/](http://www.cdc.gov/vaccinesafety/)

**4 What if there is a serious reaction?**

**What should I look for?**

- Look for anything that concerns you, such as signs of a severe allergic reaction, very high fever, or behavior changes.

Signs of a severe allergic reaction can include hives, swelling of the face and throat, difficulty breathing, a fast heartbeat, dizziness, and weakness. These would usually start a few minutes to a few hours after the vaccination.

**What should I do?**

- If you think it is a severe allergic reaction or other emergency that can't wait, call 9-1-1 or get the person to the nearest hospital. Otherwise, call your doctor.
- Afterward, the reaction should be reported to the Vaccine Adverse Event Reporting System (VAERS). Your doctor should file this report, or you can do it yourself through the VAERS web site at [www.vaers.hhs.gov](http://www.vaers.hhs.gov), or by calling **1-800-822-7967**.

*VAERS does not give medical advice.*

**5 The National Vaccine Injury Compensation Program**

The National Vaccine Injury Compensation Program (VICP) is a federal program that was created to compensate people who may have been injured by certain vaccines.

Persons who believe they may have been injured by a vaccine can learn about the program and about filing a claim by calling **1-800-338-2382** or visiting the VICP website at [www.hrsa.gov/vaccinecompensation](http://www.hrsa.gov/vaccinecompensation). There is a time limit to file a claim for compensation.

**6 How can I learn more?**

- Ask your doctor.
- Call your local or state health department.
- Contact the Centers for Disease Control and Prevention (CDC):
  - Call **1-800-232-4636 (1-800-CDC-INFO)**
  - Visit CDC's website at [www.cdc.gov/vaccines](http://www.cdc.gov/vaccines) or [www.cdc.gov/hepatitis](http://www.cdc.gov/hepatitis)

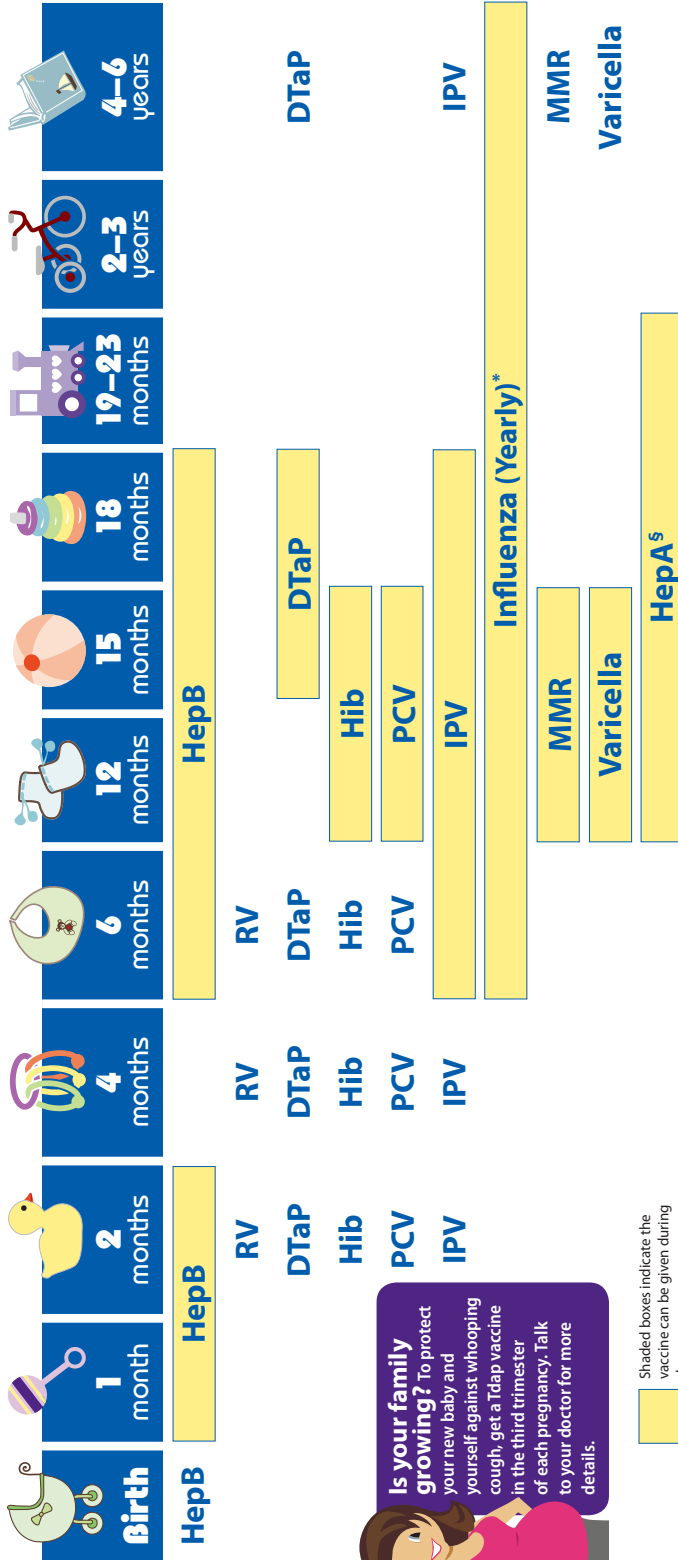
Vaccine Information Statement (Interim)

10/22/2014

42 U.S.C. § 300aa-26



# 2015 Recommended Immunizations for Children from Birth Through 6 Years Old



**Is your family growing?** To protect yourself against whooping cough, get a Tdap vaccine in the third trimester of each pregnancy. Talk to your doctor for more details.

Shaded boxes indicate the vaccine can be given during shown age range.

**NOTE:** If your child misses a shot, you don't need to start over, just go back to your child's doctor for the next shot. Talk with your child's doctor if you have questions about vaccines.

**FOOTNOTES:** \* Two doses given at least four weeks apart are recommended for children aged 6 months through 8 years of age who are getting an influenza (flu) vaccine for the first time and for some other children in this age group.  
<sup>§</sup> Two doses of HepA vaccine are needed for lasting protection. The first dose of HepA vaccine should be given between 12 months and 23 months of age. The second dose should be given 6 to 18 months later. HepA vaccination may be given to any child 12 months and older to protect against HepA. Children and adolescents who did not receive the HepA vaccine and are at high-risk, should be vaccinated against HepA.

*If your child has any medical conditions that put him at risk for infection or is traveling outside the United States, talk to your child's doctor about additional vaccines that he may need.*

SEE BACK PAGE FOR MORE INFORMATION ON VACCINE-PREVENTABLE DISEASES AND THE VACCINES THAT PREVENT THEM.

For more information, call toll free  
**1-800-CDC-INFO (1-800-232-4636)**  
 or visit  
<http://www.cdc.gov/vaccines>



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**Vaccine-Preventable Diseases and the Vaccines that Prevent Them**

Disease	Vaccine	Disease spread by	Disease symptoms	Disease complications
<b>Chickenpox</b>	Varicella vaccine protects against chickenpox.	Air, direct contact	Rash, tiredness, headache, fever	Infected blisters, bleeding disorders, encephalitis (brain swelling), pneumonia (infection in the lungs)
<b>Diphtheria</b>	DTaP* vaccine protects against diphtheria.	Air, direct contact	Sore throat, mild fever, weakness, swollen glands in neck	Swelling of the heart muscle, heart failure, coma, paralysis, death
<b>Hib</b>	Hib vaccine protects against <i>Haemophilus influenzae</i> type b.	Air, direct contact	May be no symptoms unless bacteria enter the blood	Meningitis (infection of the covering around the brain and spinal cord), intellectual disability, epiglottitis (life-threatening infection that can block the windpipe and lead to serious breathing problems), pneumonia (infection in the lungs), death
<b>Hepatitis A</b>	HepA vaccine protects against hepatitis A.	Direct contact, contaminated food or water	May be no symptoms, fever, stomach pain, loss of appetite, fatigue, vomiting, jaundice (yellowing of skin and eyes), dark urine	Liver failure, arthralgia (joint pain), kidney, pancreatic, and blood disorders
<b>Hepatitis B</b>	HepB vaccine protects against hepatitis B.	Contact with blood or body fluids	May be no symptoms, fever, headache, weakness, vomiting, jaundice (yellowing of skin and eyes), joint pain	Chronic liver infection, liver failure, liver cancer
<b>Flu</b>	Flu vaccine protects against influenza.	Air, direct contact	Fever, muscle pain, sore throat, cough, extreme fatigue	Pneumonia (infection in the lungs)
<b>Measles</b>	MMR** vaccine protects against measles.	Air, direct contact	Rash, fever, cough, runny nose, pinkeye	Encephalitis (brain swelling), pneumonia (infection in the lungs), death
<b>Mumps</b>	MMR** vaccine protects against mumps.	Air, direct contact	Swollen salivary glands (under the jaw), fever, headache, tiredness, muscle pain	Meningitis (infection of the covering around the brain and spinal cord), encephalitis (brain swelling), inflammation of testicles or ovaries, deafness
<b>Pertussis</b>	DTaP* vaccine protects against pertussis (whooping cough).	Air, direct contact	Severe cough, runny nose, apnea (a pause in breathing in infants)	Pneumonia (infection in the lungs), death
<b>Polio</b>	IPV vaccine protects against polio.	Air, direct contact, through the mouth	May be no symptoms, sore throat, fever, nausea, headache	Paralysis, death
<b>Pneumococcal</b>	PCV vaccine protects against pneumococcus.	Air, direct contact	May be no symptoms, pneumonia (infection in the lungs)	Bacteremia (blood infection), meningitis (infection of the covering around the brain and spinal cord), death
<b>Rotavirus</b>	RV vaccine protects against rotavirus.	Through the mouth	Diarrhea, fever, vomiting	Severe diarrhea, dehydration
<b>Rubella</b>	MMR** vaccine protects against rubella.	Air, direct contact	Children infected with rubella virus sometimes have a rash, fever, swollen lymph nodes	Very serious in pregnant women—can lead to miscarriage, stillbirth, premature delivery, birth defects
<b>Tetanus</b>	DTaP* vaccine protects against tetanus.	Exposure through cuts in skin	Stiffness in neck and abdominal muscles, difficulty swallowing, muscle spasms, fever	Broken bones, breathing difficulty, death

\* DTaP combines protection against diphtheria, tetanus, and pertussis.  
 \*\* MMR combines protection against measles, mumps, and rubella.



continues on back page

# Immunizations and Developmental Milestones for Your Child from Birth Through 6 Years Old

Child's Name \_\_\_\_\_ Birth Date \_\_\_\_\_

	Birth	1 MONTH	2 MONTHS	4 MONTHS	6 MONTHS
<b>Recommended Immunizations</b>	<input type="radio"/> HepB <input type="radio"/> Rotavirus <input type="radio"/> Diphtheria, Tetanus, Pertussis <input type="radio"/> Haemophilus influenzae type b <input type="radio"/> Pneumococcal <input type="radio"/> Inactivated Poliovirus <input type="radio"/> Influenza (Flu)	<input type="radio"/> HepB <sup>1</sup> <input type="radio"/> RV <input type="radio"/> DTaP <input type="radio"/> Hib <input type="radio"/> PCV <input type="radio"/> IPV	<input type="radio"/> RV <input type="radio"/> DTaP <input type="radio"/> Hib <input type="radio"/> PCV <input type="radio"/> IPV	<input type="radio"/> RV <input type="radio"/> DTaP <input type="radio"/> Hib <input type="radio"/> PCV <input type="radio"/> IPV	<input type="radio"/> HepB <input type="radio"/> RV <input type="radio"/> DTaP <input type="radio"/> Hib <input type="radio"/> PCV <input type="radio"/> IPV <input type="radio"/> Influenza, first dose <sup>2</sup> <input type="radio"/> second dose
<b>Milestones*</b>	Recognizes caregiver's voice Turns head toward breast or bottle Communicates through body language, fussing or crying	Starts to smile Raises head when on tummy Calms down when rocked, cradled or sung to	Begins to smile at people Coos, makes gurgling sounds Begins to follow things with eyes Can hold head up	Babbles with expression Likes to play with people Reaches for toy with one hand Brings hands to mouth	Knows familiar faces Responds to own name Brings things to mouth Rolls over in both directions
<b>Growth</b>	WEIGHT / PERCENTILE _____ LENGTH / PERCENTILE _____ HEAD CIRCUMFERENCE _____	WEIGHT / PERCENTILE _____ LENGTH / PERCENTILE _____ HEAD CIRCUMFERENCE _____	WEIGHT / PERCENTILE _____ LENGTH / PERCENTILE _____ HEAD CIRCUMFERENCE _____	WEIGHT / PERCENTILE _____ LENGTH / PERCENTILE _____ HEAD CIRCUMFERENCE _____	WEIGHT / PERCENTILE _____ LENGTH / PERCENTILE _____ HEAD CIRCUMFERENCE _____

Shaded boxes indicate the vaccine can be given during shown age range.

VISIT DATE \_\_\_\_\_ VISIT DATE \_\_\_\_\_ VISIT DATE \_\_\_\_\_ VISIT DATE \_\_\_\_\_ VISIT DATE \_\_\_\_\_

<sup>1</sup> The second dose of HepB may be given either at the 1 month or 2 month visit.

<sup>2</sup> Two doses given at least four weeks apart are recommended for children aged 6 months through 8 years of age who are getting a flu vaccine for the first time and for some other children in this age group.

\* Milestones adapted from Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents, Third Edition, edited by Joseph Hagan, Jr., Judith S. Shaw, and Paula M. Duncan, 2008, Elk Grove Village, IL: American Academy of Pediatrics.  
 If your child has any medical conditions that put him at risk for infections or is traveling outside the United States, talk to your child's doctor about additional vaccines that he may need.



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# Immunizations and Developmental Milestones for Your Child from Birth Through 6 Years Old

Child's Name \_\_\_\_\_ Birth Date \_\_\_\_\_

	12 MONTHS	15 MONTHS	18 MONTHS	19-23 MONTHS	2-3 YEARS	4-6 YEARS	
<b>Recommended Immunizations</b>	<input type="radio"/> <b>HepB</b> (Final dose administered between 6 and 18 months) <input type="radio"/> <b>DTaP</b>	<input type="radio"/> <b>DTaP</b>				<input type="radio"/> <b>DTaP</b>	
	<input type="radio"/> <b>Hib</b> <input type="radio"/> <b>PCV</b> <input type="radio"/> <b>IPV</b>					<input type="radio"/> <b>IPV</b>	
	<input type="radio"/> <b>Influenza</b> , first dose <sup>2</sup> <input type="radio"/> second dose (if needed)	<input type="radio"/> <b>Influenza</b> , first dose <sup>2</sup> <input type="radio"/> second dose (if needed)	<input type="radio"/> <b>Influenza</b> , first dose <sup>2</sup> <input type="radio"/> second dose (if needed)	<input type="radio"/> <b>Influenza</b> , first dose <sup>2</sup> <input type="radio"/> second dose (if needed)	<input type="radio"/> <b>Influenza</b> , first dose <sup>2</sup> <input type="radio"/> second dose (if needed)	<input type="radio"/> <b>Influenza</b> , first dose <sup>2</sup> <input type="radio"/> second dose (if needed)	
	<input type="radio"/> <b>MMR</b> <input type="radio"/> <b>Varicella</b> <input type="radio"/> <b>Hep A</b> <sup>3</sup>				<input type="radio"/> <b>MMR</b> <input type="radio"/> <b>Varicella</b>	<input type="radio"/> <b>MMR</b> <input type="radio"/> <b>Varicella</b>	
<b>Milestones*</b>	<input type="radio"/> Cries when mom or dad leaves <input type="radio"/> Says "mama" and "dada" <input type="radio"/> Copies gestures (for example, waves "bye bye") <input type="radio"/> May stand alone	<input type="radio"/> Imitates what you are doing <input type="radio"/> Drinks from a cup <input type="radio"/> Scribbles on his own <input type="radio"/> Walks well	<input type="radio"/> Points to show others something interesting <input type="radio"/> Says several single words <input type="radio"/> Points to one body part <input type="radio"/> May walk up steps and run	<input type="radio"/> Plays mainly beside other children <input type="radio"/> Follows two-step commands <input type="radio"/> Plays simple make-believe games <input type="radio"/> Throws ball overhand	<input type="radio"/> Can name most familiar things <input type="radio"/> Shows affection for friends without prompting <input type="radio"/> Turns book pages one at a time <input type="radio"/> Kicks a ball	<input type="radio"/> Speaks very clearly <input type="radio"/> Tells stories <input type="radio"/> Can print some letters or numbers <input type="radio"/> Hops; may be able to skip	
<b>Growth</b>	At each well child visit, enter date, length, weight, and percentile information to keep track of your child's progress.	WEIGHT / PERCENTILE _____ LENGTH / PERCENTILE _____ HEAD CIRCUMFERENCE _____	WEIGHT / PERCENTILE _____ LENGTH / PERCENTILE _____ HEAD CIRCUMFERENCE _____	WEIGHT / PERCENTILE _____ LENGTH / PERCENTILE _____ HEAD CIRCUMFERENCE _____	WEIGHT _____ HEIGHT _____ BMI _____	WEIGHT _____ HEIGHT _____ BMI _____	

Shaded boxes indicate the vaccine can be given during shown age range.

<sup>2</sup> Two doses given at least four weeks apart are recommended for children aged 6 months through 8 years of age who are getting a flu vaccine for the first time and for some other children in this age group.

<sup>3</sup> Two doses of HepA vaccine are needed for lasting protection. The first dose of HepA vaccine should be given between 12 months and 23 months of age. The second dose should be given 6 to 18 months later. HepA vaccination may be given to any child 12 months and older to protect against HepA. Children and adolescents who did not receive the HepA vaccine and are at high-risk should be vaccinated against HepA.

\* Milestones adapted from *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents Third Edition*, edited by Joseph Hagan, Jr., Judith S. Shaw, and Paula M. Duncan, 2008, Elk Grove Village, IL: American Academy of Pediatrics. *If your child has any medical conditions that put him at risk for infections or is traveling outside the United States, talk to your child's doctor about additional vaccines that he may need.*




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For more information, call toll free 1-800-CDC-INFO (1-800-232-4636) or visit <http://www.cdc.gov/vaccines/recs/schedules/child-schedule.htm> (immunization) or <http://www.cdc.gov/ncbddd/actearly/milestones/index.html> (Milestones)

# FAQs

(frequently asked questions)

## about "MRSA"

(Methicillin-Resistant *Staphylococcus aureus*)

### What is MRSA?

*Staphylococcus aureus* (pronounced staff-ill-oh-KOK-us AW-ree-us), or "Staph" is a very common germ that about 1 out of every 3 people have on their skin or in their nose. This germ does not cause any problems for most people who have it on their skin. But sometimes it can cause serious infections such as skin or wound infections, pneumonia, or infections of the blood.

Antibiotics are given to kill Staph germs when they cause infections. Some Staph are resistant, meaning they cannot be killed by some antibiotics. "Methicillin-resistant *Staphylococcus aureus*" or "MRSA" is a type of Staph that is resistant to some of the antibiotics that are often used to treat Staph infections.

### Who is most likely to get an MRSA infection?

In the hospital, people who are more likely to get an MRSA infection are people who:

- have other health conditions making them sick
- have been in the hospital or a nursing home
- have been treated with antibiotics.

People who are healthy and who have not been in the hospital or a nursing home can also get MRSA infections. These infections usually involve the skin. More information about this type of MRSA infection, known as "community-associated MRSA" infection, is available from the Centers for Disease Control and Prevention (CDC). <http://www.cdc.gov/mrsa>

### How do I get an MRSA infection?

People who have MRSA germs on their skin or who are infected with MRSA may be able to spread the germ to other people. MRSA can be passed on to bed linens, bed rails, bathroom fixtures, and medical equipment. It can spread to other people on contaminated equipment and on the hands of doctors, nurses, other healthcare providers and visitors.

### Can MRSA infections be treated?

Yes, there are antibiotics that can kill MRSA germs. Some patients with MRSA abscesses may need surgery to drain the infection. Your healthcare provider will determine which treatments are best for you.

### What are some of the things that hospitals are doing to prevent MRSA infections?

To prevent MRSA infections, doctors, nurses, and other healthcare providers:

- **Clean their hands** with soap and water or an alcohol-based hand rub before and after caring for every patient.
- Carefully **clean hospital rooms and medical equipment**.
- Use **Contact Precautions** when caring for patients with MRSA. Contact Precautions mean:
  - o Whenever possible, patients with MRSA will have a single room or will share a room only with someone else who also has MRSA.
  - o Healthcare providers will put on gloves and wear a gown over their clothing while taking care of patients with MRSA.

- o Visitors may also be asked to wear a gown and gloves.
- o When leaving the room, hospital providers and visitors remove their gown and gloves and clean their hands.
- o Patients on Contact Precautions are asked to stay in their hospital rooms as much as possible. They should not go to common areas, such as the gift shop or cafeteria. They may go to other areas of the hospital for treatments and tests.

- **May test** some patients to see if they have MRSA on their skin. This test involves rubbing a cotton-tipped swab in the patient's nostrils or on the skin.

### What can I do to help prevent MRSA infections?

#### In the hospital

- Make sure that all doctors, nurses, and other healthcare providers clean their hands with soap and water or an alcohol-based hand rub before and after caring for you.

If you do not see your providers clean their hands, please ask them to do so.

#### When you go home

- If you have wounds or an intravascular device (such as a catheter or dialysis port) make sure that you know how to take care of them.

### Can my friends and family get MRSA when they visit me?

The chance of getting MRSA while visiting a person who has MRSA is very low. To decrease the chance of getting MRSA your family and friends should:

- Clean their hands before they enter your room and when they leave.
- Ask a healthcare provider if they need to wear protective gowns and gloves when they visit you.

### What do I need to do when I go home from the hospital?

To prevent another MRSA infection and to prevent spreading MRSA to others:

- Keep taking any antibiotics prescribed by your doctor. Don't take half-doses or stop before you complete your prescribed course.
- Clean your hands often, especially before and after changing your wound dressing or bandage.
- People who live with you should clean their hands often as well.
- Keep any wounds clean and change bandages as instructed until healed.
- Avoid sharing personal items such as towels or razors.
- Wash and dry your clothes and bed linens in the warmest temperatures recommended on the labels.
- Tell your healthcare providers that you have MRSA. This includes home health nurses and aides, therapists, and personnel in doctors' offices.
- Your doctor may have more instructions for you.

If you have questions, please ask your doctor or nurse.

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## **Information for Parents: The Infant Car Seat Challenge**

Infants born early, having a low birth weight, or having breathing or other health care issues may be at risk of health problems when placed in a semi-upright seating position, such as in a car safety seat. The problems can include difficult breathing, the heart beating too slowly, and low levels of oxygen in the blood.

The American Academy of Pediatrics recommends that these babies be tested for breathing problems in their car seats before they leave the hospital to go home. This monitoring test will be done by a trained nurse or doctor. No blood will be taken and your baby will not feel uncomfortable from the test. **The Infant Car Seat Challenge test will most likely include:**

- Testing your baby's heart rate and breathing using monitor stickers.
- Testing your baby's blood-oxygen levels using a monitor sticker on the hand or the foot.
- The test lasting 90-120 minutes or the time of your car ride home, whichever is longer.

The test will be done at least 12 hours after your baby is born and at least one day before leaving the hospital to go home.

### **Before the test, you should:**

- Bring your car seat to the hospital so it can be checked for safety.
- Bring 1-2 receiving blankets that may be used to help your baby fit into the car seat.

### **What is the right car seat for my baby?**

- It is made for a newborn's weight and size. Most car seats are made for babies born 5 pounds or more. Some are made special for babies born 4 pounds or more.
- It is not a big seat with a tray or shield.
- The seat has not been recalled for a safety reason.
- It is not too old according to the car seat's instructions.
- It is in good condition and has all its parts.
- It has never been in a serious car crash.
- It is clean.

**If you do not have the right car seat, please let the hospital know as soon as possible.**

**What else do parents need to know?** The nurse doing the test will place your baby in the seat, but you need to know how to fit your baby in the seat after leaving the hospital.

- The seat's harness straps should be coming from the lowest slots, which means the straps fall at or below your baby's shoulders. Adjust them before seating your baby by following the car seat's instructions.
- Your baby should be placed in the seat with his/her back and bottom fully against the seat back.
- Carefully pull the harness over the baby, and buckle.
- Fasten the chest clip at armpit level.
- Tighten the harness straps by pulling them near the chest clip, then pull the other strap at the bottom of the car seat that takes up slack from the shoulder harnesses. Re-adjust the chest clip if needed.
- If your baby needs more support for her head or trunk, use a rolled receiving blanket along the side of the child's body. Never use a head insert or pad that didn't come with the car seat and never place anything behind a child's body unless it comes with the seat.
- If your baby is sliding toward the crotch strap, place a rolled washcloth between the crotch strap and the baby's diaper.



### **If your baby does not pass the car seat challenge test?**

Some babies may show breathing or heart rate problems during the test. This may mean that your baby needs some more time to be safe in his car seat. The doctors will decide if your baby is not ready to go home due to health issues, or she may need to go home lying flat on her back in a 'car bed,' which is a special safety seat available through most hospitals. If your baby is to stay at the hospital longer, then another car safety seat challenge test will be conducted in a day or more.



### **A few more important things for parents of preemies or low birth weight babies:**

- Your newborn should use his or her car safety seat for travel only.
- Limit how much traveling you do in cars.
- Never put a baby's car safety seat in front of an 'ON' airbag.
- Always put the car seat in the back seat.
- Always have an adult ride in the back seat to watch the baby's breathing and color.

**More questions on traveling safely with your children in cars?** Contact a local Child Passenger Safety Technician. Go to: <http://cert.safekids.org> and click on "Find a Technician" or call 1-800-370-SEAT for Maryland Kids in Safety Seats.

## SECTION 2

### 2.20 RSV (*respiratory syncytial virus*)

# RSV:

## Is my baby at risk?

### What is RSV?

Respiratory syncytial (sin-SISH-uhl) virus (RSV) is a common, easily spread virus that almost all children catch at least once by the time they turn two. It usually causes mild to moderate cold-like symptoms. In some cases, complications from RSV disease can lead to serious lung infection, breathing problems, and hospitalization.

### Is my baby at risk for contracting RSV?

Severe RSV disease is the #1 cause of hospitalizations in the U.S. for babies under 1 year of age. RSV season usually starts in the fall and runs into the spring, but can be different in certain parts of the country. Ask your baby's doctor when RSV season occurs in your area.

### Babies who are in any of the following three population categories are at high risk for developing severe RSV disease:

**Being born early.** For premature babies, RSV can lead to a serious lower respiratory tract infection that requires hospitalization.

**Having chronic lung problems.** Babies 24 months or younger who have been treated for chronic lung disease within 6 months of the start of RSV season are at high risk.

#### Being born with certain types of heart disease.

Babies 24 months or younger who have been born with certain types of heart disease are also at high risk.

### Premature infants who have the following risk factors may be at high risk for developing severe RSV disease:

**Having a low birth weight.** Babies born at less than 5½ pounds are at high risk.

**Having pre-school or school-aged siblings.** RSV is easy to catch, especially if there are other pre-school or school-aged children in the home, particularly during cold and flu season.

**Attending daycare centers.** RSV can be passed from person to person by touching common items, such as toys, bedding, towels, etc.

#### Having a family history of asthma or wheezing.

There is a high risk for severe RSV disease among babies who have a family history of asthma or wheezing.



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#### Being around tobacco smoke or other air pollutants.

This can irritate the baby's lungs and make it harder to fight RSV disease. Never allow anyone to smoke around your baby.

**Multiple births.** Multiples are at a high risk due to their potential low birth weight and also because there are more children in the household.

**Young chronological age.** Premature babies who are 12 weeks of age or younger at the start of RSV season are at high risk.

**Crowded living conditions.** Households with many people in a small space increase the risk for RSV disease.

## What are the signs and symptoms of RSV disease?

It's important to ask your baby's healthcare provider about symptoms to look out for, especially during your baby's first months at home. If, at any time, you see any of these RSV disease warning signs, call your baby's healthcare provider right away:

- **Fever.** A rectal temperature above 100.4°F (38°C) in infants younger than 3 months of age is cause for concern
- **Bluish lips or fingertips**
- **Coughing**
- **Wheezing**
- **Trouble breathing**
- **Rapid breathing**
- **Gasping for breath**



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## How can I help to protect my baby?

Since RSV spreads just like a common cold virus, you may want to take a few extra precautions around your family and friends. Here are some ways to help prevent your baby from being exposed during RSV season.

- **Wash your hands thoroughly before touching your baby and make sure that others do the same.**
- **Keep your baby's belongings clean, including toys, clothes, bedding, and crib rails.**
- **Avoid sharing your baby's pacifiers, bottles, toys, utensils, etc. with others.**
- **Don't let anyone smoke in your home, or near your baby. Tobacco smoke can increase the risk of severe RSV disease.**
- **Keep your baby away from young children and crowds at public places and family gatherings.**
- **Keep your baby away from anyone with a cold or fever (they may actually have RSV).**



Gaithersburg, MD 20878

Customer Support Network: 1-877-633-4411

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This information is for educational purposes only and is not intended to substitute for professional medical advice. Always consult with a healthcare professional if you have any questions about the health of your child.



## **SECTION 3- FEEDING AND NUTRITION**

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- 3.3 Banked Donor Breast Milk ..... pg. 9**
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Your Baby's Formula ..... pg. 23**



## SECTION 3

### 3.1 FEEDING AND NUTRITION

#### *How will my preemie baby get nutrition when he or she is so small?*

If your baby is sick or very tiny, your baby will receive nourishment through his or her veins. At first your baby will receive mainly sugar water for calories. However, if it appears that your baby will not tolerate feedings within a few days, he or she may be started on hyperalimentation (TPN). With TPN, protein, fat, sugar, vitamins and minerals are added to the fluids that the baby receives by vein. Your baby can receive complete nutrition and grow on TPN alone. As your baby tolerates other feedings, the TPN will be decreased.

Your baby may be started on tube feedings. A tube is passed through the mouth or the nose into your baby's stomach. Milk is put through the tube. This may be as a constant slow drip, called continuous infusion or drip feeds, or as prescribed amounts given every few hours, called gavage or bolus feeding. Either way, the amounts will be very small at first and gradually increase. There is often a transition period between TPN and tube feedings when the amount of nutrition from TPN slowly decreases as the amount from tube feeding increases.

Occasionally drip feedings are given into the intestine instead of the stomach. In this case, the end of the tube is passed beyond the stomach into the intestine.

#### **Can I breastfeed my baby?**

Yes, just because you delivered a premature baby does not mean you must formula feed your baby. At first a small baby will not be able to suckle at the breast, but you can provide breast milk for him or her by pumping. If you are unable to provide breast milk by pumping or breastfeeding, your baby may fit the criteria for donor breast milk. (Refer to page 9 for information on Banked Donor Breast Milk.) Additional nutrients and calories may need to be added to the breast milk, and your physician or nurse will explain how we fortify the breast milk.

#### **Is it normal for my baby to lose weight after birth?**

Almost all babies lose weight before they begin to gain weight. This weight loss typically is 5-15 percent of the baby's birth weight. Most of the weight loss is loss of water because the baby is no longer surrounded by fluid. Sometimes very sick babies gain weight the first few days. This is not real weight gain; it is retention of water. As the baby's condition improves, the baby will lose weight. Usually a baby does not regain his or her birth weight until 2 or more weeks of age.

**When can my baby breastfeed or nipple?**

When babies are born prematurely, their sucking is not well coordinated with their breathing. This suck-swallow-breathe pattern usually becomes coordinated enough to safely breastfeed or bottle-feed at about 34 weeks of gestation. However, there are big differences among babies. Some are ready at about 32 weeks; others are not ready by 36 weeks. Nurses can often tell when a baby is getting close to this time by how a baby acts during a tube feeding. Your baby's doctors and nurses will determine when to start. At first your baby will have only one or two breast or nipple feeds a day. This will gradually increase as the baby gets used to the extra work of feeding. Because nipple and breast feeding requires more work, babies who have had severe respiratory problems may be slower to start and slower to advance on feedings. This can be a frustrating time for parents and may require extra patience. We are here to support you.



## SECTION 3

### 3.2 BREASTFEEDING YOUR BABY

#### Medications

Almost all medications will pass into your breast milk. Most medications ordered by your doctor are safe to take and will not affect your baby. Street drugs are never safe and may cause harm if passed on in the breast milk.

1. Please make your baby's doctor and nurse aware of any medications or herbs you are taking.
2. If needed, take pain medicine just before pumping to decrease effects on your baby and make you comfortable.
3. Avoid smoking one hour prior to pumping, while you are pumping, or while holding the baby. Nicotine may decrease your milk supply.
4. Avoid drinking alcohol while pumping because alcohol passes into the breast milk.
5. Limit the intake of caffeine you eat or drink to one or two times a day because it may cause your infant to be irritable and to have trouble sleeping. Caffeine is found in items such as soft drinks, coffee, tea and chocolates.

#### Taking care of yourself

After delivery, you will be tired and need extra rest and sleep to recover. Fatigue and stress may decrease your milk supply.

1. Ask family and friends to help out with chores and other children at home so you can rest.
2. Relax and rest whenever possible. Take a pillow along in the car and rest on the trip to and from the hospital.
3. Ask friends or family to fix healthy snacks for you to take to the hospital while visiting (cheese, raisins, peanut butter crackers, nuts and fruit).
4. Remember you are a new mom and you need time to recover (at least four to six weeks). If the baby will be in the hospital for a long time, some moms will go back to work and take time off when the baby comes home.

#### Personal hygiene

Premature and sick babies can get infections easily.

1. Shower and wash daily. Use a gentle soap on your skin.  
Avoid soap or lotions on your nipples.
2. Nipple creams are not necessary unless experiencing nipple soreness. In that case, use a cream appropriate for healing and breastfeeding, such as a lanolin product without alcohol in the ingredients or a product containing vitamin E.
3. Change your nursing pads when moist.
4. Change into a clean bra daily.
5. Before pumping, wash your hands well with antibacterial soap.

### **Tips for relaxation**

1. Make yourself comfortable by finding a quiet place to pump.
2. Sit down with your shoulders relaxed and your back supported.
3. Have someone massage your neck and back to relax.
4. Drink a glass of water or juice while pumping.
5. Call the nursery to check on your baby before pumping.
6. Take a warm shower or apply warm clothes to your breasts before pumping.
7. Look at your baby's picture or chant your baby's name while pumping.
8. Close your eyes and think about your baby, imagining the smell of his or clothing and the feel of your baby in your arms.
9. Try breathing exercises or listening to relaxing music while pumping.
10. Massage each breast in small circular strokes using both hands. Move from the chest wall toward the nipple. Massage all the way around the breast.
11. After massaging for about two to three minutes, roll the nipple at each breast between your thumb and forefinger.

### **Nutrition for breastfeeding moms**

1. Eat a well-balanced diet. Your body will naturally feel hunger for the extra calories it needs (approximately 500-700 more calories per day than your normal pre-pregnancy intake).
  - Drink plenty of fluids:
  - Drink when thirsty.
  - Drink an 8 ounce glass of liquid such as juice, mild soup or water before or during pumping
  - Avoid coffee, tea and alcoholic beverages.  
These may make you lose more fluid than they give you.
  - If your urine looks dark, you are not drinking enough.  
Urine should be clear to pale yellow.
2. Different food you may eat can bother the baby; however, most foods are just fine. Over time, you will get to know your baby. If you suspect a food is making your baby irritable or fussy, or causing diarrhea or gas, stop eating that food for few days. If your baby improves, you will know to avoid this food.

### **Getting started**

1. Begin pumping as soon as possible after birth (preferably within the first six hours).
2. Pump at least eight times in a 24-hour period. (Double pumping is best. Single pumping is adequate if double pumping is too difficult.) Pump each breast for 10 minutes until milk comes in. When milk comes, pump for two to three minutes after milk dwindles to a drip.
3. Sleep during the night, as long as you have pumped at least eight times in 24 hours.  
Do not go more than five to six hours without pumping.
4. It is beneficial to have one pumping session during the late evening or early morning hours.
5. The number of times is more important than the length of time.

### **Setting up your equipment**

1. Wash hands and fingernails well before handling any breast pump parts, your breasts or expressed milk.
2. Don't touch the inside of the bottles when attaching them.
3. Make sure all the parts of pumping kits are firmly snapped together.

### **Pumping**

Breast milk can vary in color, consistency and smell, depending on the time of the day and the baby's age at the time of pumping. At first, there is usually none or just drops – this is normal.

1. Move the suction lever to the lowest setting.
2. With the pump off, place the breast shields over your breasts.  
The nipple should be centered on the opening of the breast shield.
3. Turn the pump on.
4. You should be able to see the nipple pulled forward as the suction begins and feel the suction pull.
5. Once you see the few drops of milk, begin to increase the suction, if desired.
6. Increase the suction, adjusting to your own comfort.
7. Repeat breast massage about halfway through the pumping session. You can do this while continuing to pump or interrupt pumping to do it, whichever is more comfortable for you.
8. Continue to pump until your breasts are soft and the milk is no longer flowing.  
(Remember the more times you pump, the more milk you will make.)
9. Release suction by gently pressing down on your breast at the edge of the breast shield.
10. Remove the bottles from the pumping system.
11. Label the bottle with your baby's name, date and time of the pumping session.  
Obtain a supply of labels from your baby's nurse.
12. For questions, ask your baby's nurse or a lactation consultant.

Many insurance companies will cover the cost of renting an electric pump.  
Ask the social worker for a prescription and letter from your baby's doctor.

### **Cleaning the pump parts**

All parts of the breast pump kit should be disassembled for cleaning after each use of the pump.

1. Wash the parts with hot, soapy water.
2. Rinse the parts with clear water.
3. Place the parts on a clean paper towel and cover with another paper towel, allowing them to air dry.
4. Make sure your pumping parts are completely dry before placing them in a clean cloth bag for storage.
5. If staying in the hospital, use warm water with no soap.



NICU Infants			
Human Milk	Room Temperature	Time in Refrigerator	Time in Freezer
Freshly expressed	Ideal: Refrigerate immediately  Acceptable: ≤4 hours if refrigeration not available	96 hours	Ideal: 4 weeks  Maximum: 3 months
Previously frozen, thawed in refrigerator but not warmed	≤4 hours	≤24 hours	Do not refreeze
Previously frozen and brought to room temperature	For completion of current feed	4 hours	Do not refreeze
Infant has started feeding	Completion of current feeding and then discarded	Discard	Discard

For Term Infants			
Human Milk	Room Temperature	Time in Refrigerator	Time in Freezer
Freshly expressed	≤ 6 hours	≤8 days	Ideal:  <u>Standard Freezer:</u> 3 months Maximum: <6 months  <u>Deep Freezer (-20)</u> 12 months
Previously frozen, thawed in refrigerator but not warmed	≤4 hours	≤24 hours	Do <b>not</b> refreeze
Previously frozen and brought to room temperature	Completion of feeding up to an hour at room temperature and then discarded	≤4 hours	Do <b>not</b> refreeze

**Best Practice for Expressing, Storing and Handling Human Milk in Hospitals,**

Home and Child Care Settings: Frances Jones and Mary Rose Tully, 3rd edition, 2011.

Human Milk Banking Association of North America

### **Transporting breast milk**

1. Refrigerated breast milk should be brought to the hospital on ice either in a plastic bag or an ice chest.
2. Make sure the bottles are closed tightly.
3. Once arriving in the nursery, give your breast milk to your baby's nurse or put directly in freezer.

### **Thawing breast milk**

When your baby goes home, frozen breast milk may be used at home as you need it. The oldest breast milk should be used first. Once the milk is thawed, you may store it in the refrigerator for 24 hours.

1. When thawing milk, label as thawed when completely thawed (no ice crystals present).
2. Use the time when completely thawed to base acceptable time limits for use rather than when it is taken from the freezer.
3. Rapid thawing or warming may be done by holding the bottle of breast milk under warm running tap water. Avoid wetting the top area.
4. You also may place the breast milk bottle in a bowl of warm water filled  $\frac{3}{4}$  full. (Being careful not to cover the top of the bottle with water.)
5. Or you may place the breast milk bottle in the refrigeration area of refrigerator to thaw slowly.
6. Do no microwave breast milk! Microwaving may alter the breast milk and can create "hot spots" in the milk that could burn the baby.
7. Do not boil breast milk!
8. Do no refreeze thawed breast milk!

### **Hand pumping**

Your pump kit can also be used as a hand pump if needed. You will have to pump one side at a time, and it will take longer than the double pumping. When hand pumping, it is best to go back and forth from one side to the other. Pump five minutes on the first side, then five minutes on the second side. Go back to the first side and repeat this sequence until your breasts are soft. You will need to pump 15 minutes on each side.

1. Follow assembly instruction from universal pumping system kit.
2. Adjust suction dial for your comfort, minimum <-> maximum.
3. Begin by positioning the breast shield center over your nipple.  
Tilt the breast pump slightly downward to allow the milk to naturally flow toward the bottle.
4. Start pumping.
5. Simply squeeze the hand to a comfortable level of pressure and hold it –don't release.  
The pumping will gradually release the suction for several seconds.
6. As the pump automatically releases the pressure during the hold phase, the nipple relaxes and the milk sinuses refill in readiness for the next squeeze.
7. Now you are ready to release, squeeze, and hold again.
8. The action of squeeze and hold is much like that of the baby; once the milk begins to flow, sucking is longer and drawn out, not the rapid pattern of the first few minutes.
9. When the milk begins to slow down, a minute or two of short, rapid squeezing motions will increase milk flow again.

### **Beginning to breastfeed**

Until your baby is well enough to breastfeed, he or she will need to be fed with fluids in the vein or by the tube feedings. Once your baby is ready, you should offer the breast. The first few times will be a learning experience for both you and your baby.

Remember your relaxation tips. A pillow under the baby will support the baby in your lap. Your baby's nurse will assist you in helping the baby latch on. During the first few times, the baby may just lick and nuzzle your breast. Expressing a few drops of breast milk before your baby is put to breast may help the baby's interest. Until your baby is emptying your breast during feedings, you should pump after feedings so as not to decrease your milk supply. The loving contact and cuddling will help your baby get to know you.

## SECTION 3

### 3.3 BANKED DONOR BREAST MILK

#### **What is banked donor breast milk?**

Banked donor breast milk is milk that other mothers have donated to a human milk bank. This milk is screened, pasteurized and specially processed so that it can be given to any baby. Sinai Hospital gets its donor milk from human milk banks licensed by the state of Maryland..

#### **When is donor breast milk recommended?**

Mother's milk is the best food for all babies. When a mother's own milk isn't available or usable, it may be recommended that a baby receive pasteurized human milk from a donor milk bank. If donor milk is recommended for your baby, a neonatologist will discuss with you the specific reasons for the recommendation.

#### **What are the benefits of donor milk?**

Scientific studies show that human milk contains a unique and powerful combination of nutrients important for infant health. Mother's milk also supports growth and development and boosts a baby's ability to fight infection. It's easy to digest and can promote the overall health of a baby's digestive system.

Pasteurized human milk from a donor provides most of these same health benefits, which are particularly valuable in a baby's first weeks of life – especially for a premature baby. Research suggests that when their own mother's milk is unavailable, infants fed banked donor human milk have fewer intestinal complications compared with infants who receive a cow's milk product.

#### **Is using another mother's milk safe?**

Sinai Hospital uses donated milk from human milk banks licensed by the state of Maryland. Though there's an extremely small chance that donated human milk could transmit a harmful substance, there has never been a known case of infection caused by milk from a certified human milk bank. That is because banks ensure the milk's safety through several measures, including:

- **Donors are carefully screened.**

Screening ensures that a woman who donates her milk to the milk bank is healthy and takes no regular medications. She must be a nonsmoker with no history of drug abuse, alcohol abuse or other risky behavior. Her blood must test negative for certain diseases. Once a woman is accepted as a donor, she must follow detailed instructions to ensure safe handling of the milk she collects. Donors are not paid but rather voluntarily give their milk so it can help other babies.

- **Donated milk is pasteurized and tested.**

Pasteurizing is a heating process that kills any harmful bacteria or viruses that may be in the milk. This process preserves most of the milk's nutrients, immune properties and other healthy components. After pasteurization, the milk bank also tests the donated milk to further ensure that it's safe to feed a baby. Finally, the milk from several donors is pooled together, further diluting any possible risk of infection.

### **How long will my baby receive donor milk?**

The length of time your baby will receive pasteurized human milk depends on several factors, including the reason for prescribing it. Your baby's doctor will tell you how long to give your baby donor milk.

### **What is human milk fortifier?**

Human milk fortifier is a human milk-based nutritional product for premature infants. It is added to human milk when needed and gives a premature baby the essential calories, protein and minerals (such as calcium) that he or she needs to grow.

### **Where can I learn more about human milk banking?**

To learn more about human milk banking, visit the website for the Human Milk Banking Association of North America at [www.hmbana.org](http://www.hmbana.org).

If you have any questions about feeding or any other aspect of your baby's care, talk with your baby's doctor.

You can also arrange to talk or meet with a lactation consultant.



## SECTION 3

### 3.4 FEEDING THE PREMATURE BABY

Full-term babies demonstrate the coordination of the suck–swallow–breathe skills at birth. Often it takes time for premature infants to learn these skills. Additionally, premature babies have smaller mouths and the muscles used for sucking may be weak. Eating is a lot of work for them and uses a lot of their energy. Oral feedings need to be efficient to preserve energy for growth and need to be safe to avoid aspiration.

Your baby will begin to show you that he or she is ready to start oral feedings. Some of these readiness cues include hands to mouth, sucking, visual signs of alertness, and signs of hunger or rooting. Your baby also may start waking on his or her own for care times. Once your baby shows these readiness signals, it is time to introduce oral feeds, by either breast or bottle.

In the beginning, your baby may take one entire feed orally, but need to be fed through the OG/NG tube for the next. It's also possible that your baby will take part of the feeding by nipple, but be unable to finish and need to have the rest of the feed through the tube. Feeding by a tube is also known as “gavage feeds.” This is normal premature baby behavior and eventually your baby will orally feed the entire amount every time.

Your baby will feed best when wide awake. Making eye contact, but not distracting your baby by talking or rocking, may also improve his or her ability to take feeds by mouth. In time, your baby will take less time to get through the feeds as he or she grows stronger and better able to suck, swallow and breathe at the same time.

#### **What to feed baby**

1. Babies need breast milk or an infant formula with iron for the first year of life. A few babies need a nonlactose formula. This formula is often a soybean-based formula. It is used temporarily if your baby has intolerance to the regular infant formula (rare!) or following an illness with diarrhea. Soy formula should be used only when suggested by your doctor. If your baby is on any other special formula, we will help you make arrangements for obtaining the formula.
2. Babies should remain on breast milk or an infant formula through the first year of life.
3. Babies do not need cereal, juice or other baby foods until they are 6 months old. All their nutritional needs are met from breast milk or infant formula

#### Exceptions:

- Some infants are placed on feedings thickened with cereal by their doctor because of problems associated with reflux (spitting up when feedings come up from the stomach into the esophagus, which is the tube connecting the throat to the stomach). Reflux also may cause your baby to feed poorly because the esophagus becomes irritated.
- Some babies may take the largest amount of formula they should have and still be hungry. Try to wait until your baby is 4-6 months old before adding cereal. Again, discuss this with your doctor.



4. Formula comes in three forms, some of which has iron added: ready-to-feed liquid, concentrated liquid and powdered. Baby formula in all of these forms has 20 calories per fluid ounce, when prepared according to label directions.

#### **Ready-to-Feed Liquid (with Iron)**

- Available in 32-ounce and 8-ounce cans or disposable bottles in several sizes.
- Requires no addition of water and little preparation time.
- Requires refrigeration after opening can or bottles.
- Once opened, refrigerate and use within 24 hours.
- The most expensive of the three forms of formulas.

#### **Concentrated Liquid (with Iron)**

- Available in 13-ounce cans.
- 13 ounces of formula is mixed with 13 ounces of water.
- Important to correctly dilute formula with water as label directs.
- Must be refrigerated after opening can and diluting.
- Once mixed, refrigerate and use within 24 hours.
- Cost is in the middle price range for the three forms of formula.

#### **Powdered (with Iron)**

- Available in 1-pound cans.
- Follow directions on can to mix.
- Easy storage before and after can has been opened.
- Convenient for travel or home use.
- Important to correctly dilute formula with water as label directs.
- Opened powder can be used for up to one month.
- Once mixed, refrigerate and use within 24 hours.
- The least expensive form of the formulas.

All three types of formula will give the same nutritional value to the baby. Check with your baby's doctor about boiling your water (usually not necessary if you are on city or county water supplies) and sterilizing bottles.

**Never add more water to make the formula last longer or make it stronger by adding less water. This could be very dangerous to your baby's health.**

5. With refrigeration, an opened can of liquid formula or a prepared bottle can be stored for 24 hours.
6. Wash the top of the can with hot soapy water, rinse and air dry before opening.
7. If your baby drinks part of a bottle, you can leave it out at room temperature and offer the remainder up to one hour later. Then throw out the remaining formula. Do not add formula to a partially finished bottle. Give your baby a fresh bottle each feeding.
8. Do not use prepared formula that has been out of the refrigerator longer than two hours.

### **Special formula**

1. Babies with heart or breathing problems (bronchopulmonary dysplasia [BPD]), or who have growth problems, sometimes go home on higher calorie formula (24 calories per ounce). It may be available to be purchased, like regular baby formula, in a grocery or drug store in your community, or it may be available through the WIC program.
2. Special formulas should only be used at the direction of your baby's doctor. The health team will help you get the special formula when needed.

### **How much to feed**

1. The amount of formula will vary. While in the hospital your baby was probably fed very specific amounts of formula and increases were made in small amounts. Start with the amount your baby was fed in the hospital (or a little more) when you fill your bottles at home.
2. Your baby is ready to feed on demand. This means your baby can have as much as he or she wants as often as he or she wants (unless your baby's doctor tells you otherwise).
3. Babies tend to eat what they want and need, then stop sucking. They fall asleep, thrust the nipple from their mouth and stop sucking when finished.
4. Most babies feed for about 20 minutes. Feedings should not last longer than 30 minutes.
5. Sometimes your baby will eat more than other times. Do not be concerned about small variations in amounts.
6. Many prematures go home on a three- to four-hour feeding schedule and change back to a two- to three-hour schedule during a rapid period of catch-up growth.
7. Your baby will eventually take up to 32 ounces of formula in a 24-hour period. This is the most formula your baby should be given daily.

### **Sleeping through feedings**

1. It often takes several months after going home before your baby sleeps through the night.
2. If your baby sleeps through the night, enjoy your rest and do not wake him or her unless instructed otherwise.
3. During the daytime, you cannot let your baby go longer than four to five hours without feeding, especially if your baby was born premature.

### **When to feed baby**

1. We favor a demand feeding schedule of frequent small feedings. The baby will give us cues when he or she is alert and ready to eat.
2. Feed the baby when he or she is hungry (the baby may cry, open his or her mouth and turn his or her head toward a stroked lip, wiggle, lay quietly awake and then become vigorously active or fussy or suck on his or her hand when he or she is hungry). Babies do not usually go more than five hours between feedings and some eat as often as every two hours.
3. Feed the baby the amount he or she wants. Babies are mostly self-limiting. They stop sucking when they have had enough.
4. Most premature babies eat six to eight times a day for several months after going home.
5. If changing diapers and holding your baby does not calm your baby, feeding may. Try it.

### **Offering the baby water**

1. All the fluids and calories a baby needs, including water, are provided in the breast milk or formula.
2. Breast milk is the best source of calories and fluid to the growing premature baby.
3. Follow the advice of your baby's doctor about offering water to your baby.

### **Increasing the feedings**

1. As your baby grows and gains weight, he or she will need more breast milk or formula.
2. When your baby takes the entire bottle regularly and sometimes cries for more or continues to suck strongly, it may be time to increase his or her feeding. Your baby probably will limit himself or herself.
3. Place an extra  $\frac{1}{2}$  ounce of formula in the bottles if you are concerned. If your baby begins to spit, he or she may be overfed. Decrease the amount of the feeding.

### **Warming the breast milk or formula**

1. Never microwave breast milk or formula as this can create hot spots.
2. Microwaving breast milk will destroy its nutritional composition and never should be done.
3. If your baby prefers warm milk, place the bottle in a cup of warm water.
4. Most babies are used to room-temperature formula when they go home.
5. Many babies will be happy to take their formula directly from the refrigerator. Others may enjoy it warmed. No one way is better – nor does one way cause crying and stomach upsets more than the other.
6. Babies are creatures of habit and often like things done the same way.

### **Using tap water**

1. Some formulas need to be diluted 1-to-1 with water before feeding.
2. If you make one bottle at a time, you can use warm tap water from the faucet. City water supplies are safe. If you have a question about your water, call the health department.
3. If you have well water, boil it for 15 minutes or use distilled water until your baby is 6 months old.
4. If your water comes from a well, it needs to be tested by the health department for bacteria and contaminants. Do not use it for drinking unless it is safe.

### **Sterilizing bottles and nipples**

1. Sterilization of bottles and formula is not routinely recommended if you:
  - Have reliable city water.
  - Wash the bottles and nipples in hot soapy water and rinse in hot water. Allow to air dry. Clean any dried formula out of the nipple and its opening.
  - Prepare one bottle at a time.
  - Refrigerate opened formula no longer than 24 hours.
2. Washing the bottles in a dishwasher will clean them.

### **Holding baby for feeding**

1. Hold your baby in the crook of your arm watching his or her face. Some babies may fall asleep this way.
2. Premature babies often get comfortable and sleepy during the feeding.
3. Hold and cuddle your baby when you feed him or her.
4. You may need to hold the smaller premature baby on your lap directly facing you. Use one of your hands to support your baby's head, neck and upper back, while keeping the head and neck midline. If the head rests forward on the chest, your baby may have trouble breathing. Your baby may try to straighten his or her head by throwing it backward to help in breathing. If your baby's head is held too far back, this can cause difficulty in swallowing as well as breathing.
5. Make sure breast milk or formula fills the nipple during the entire feeding or your baby will swallow air. Swallowing air may lead to spitting, crying and stomach upsets in your baby.
6. Your baby may require some chin support until his or her muscles become strong enough to form a good seal around the nipple.
7. **Never prop the bottle** and do not leave baby alone to drink it. Your baby could choke. Always hold your baby during feedings.

### **Burping the baby**

1. Your baby needs his or her back rubbed or patted during the middle of the feeding and again at the end, so he or she can burp any air he or she has swallowed.
2. Sit your baby in your lap so he or she leans slightly forward, supported with one hand. Rub or pat your baby's back with the other hand.
3. Traditional over-the-shoulder burping works well, but a "wet" burp may also leave you with formula down your back.

### **Pacifiers**

1. Babies have a strong need and desire to suck.
2. Some babies are satisfied by the amount of sucking done at feeding time, while others require more.
3. Most premature babies enjoy sucking on pacifiers. Pacifiers may be used to help calm your baby as well as for your baby's own pleasure. It should also be used if your baby is tube feeding. This is called non-nutritive sucking.
4. Some premature babies will suck on their thumbs if their hand is placed by their mouth.
5. Pacifiers should never be tied around your baby's neck because it could choke him or her.
6. Pacifiers should not be dipped in honey. Cases of infant botulism, a serious type of poisoning, have happened in babies because of honey infected with the "bug."
7. Only use a commercial pacifier – never use a homemade pacifier. Homemade pacifiers are dangerous. Never make a pacifier from a nipple and plastic collar or ring. Some babies can separate the nipple from the collar and choke on it.
8. A pacifier should fit your baby's mouth – if it's too long, it might gag your baby. It should be flat enough to fit the palate and mouth comfortably. Small pacifiers are available in stores. Your nurse will show you various pacifiers that are developmentally appropriate for the age of your baby.
9. Using a pacifier is not bad. Babies enjoy the sucking activity and outgrow the need for it later.

## Other types of milk

1. Cow's milk
  - Nutritionally unbalanced for babies under 12 months.
  - Contains too much protein for your baby's developing kidneys.
  - Contains a higher level of minerals such as phosphorous, calcium and sodium than breast milk or commercial formulas.
  - Does not contain adequate amounts of vitamins C and E, copper, or iron.
  - Blood loss in stools due to cow's milk is believed to be responsible for much of the iron deficiency anemia in infancy.
  
2. Skim, 1 percent and 2 percent milk
  - Have no place in the diet of infants under 2 years of age.
  - Supply too much protein and salt.
  - Do not provide enough fat, which carries the essential fatty acids and fat-soluble vitamins.
  - Do not provide baby's caloric needs.
  
3. Raw milk
  - Does not contain adequate amounts of vitamins A, C and D and iron.
  - If not home pasteurized, may contain harmful bacteria.
  - Inspection does not guarantee safe raw milk.
  
4. Evaporated milk
  - Low in vitamin C, iron and fluoride.
  - Not recommended for infants under 12 months.
  
5. Condensed milk
  - High in sugar.
  - Not recommended for babies of any age.

## Solids

1. For the first 12 months of life, the best diet is human milk or infant formula. This is the "corrected" age for prematures. (See Development section.)
2. After the first 6 months, formula should still remain the major source of nutrition. Solid foods can be introduced during this period.
3. Solid foods may be started around 6 months of age. Given too early, solid food may contribute to obesity, provide more salt than a baby's system can easily handle or cause an early food allergy.
4. If your baby takes more than 32 ounces of formula in 24 hours for more than a week, your baby's doctor may begin solids early.
5. Solid foods do not help your baby sleep through the night.

## **General guide for feeding baby throughout the first year** (Full-term newborn)

### **1. Birth to 4-6 months**

- Breast milk or formula.
- Amount will increase from 2-3 ounces to 6-8 ounces per feeding.
- The number of feedings will go from six to eight to four to five per day as baby begins to sleep through the night.

### **2. 4-6 through 9 months**

- Breast milk or formula should be the primary source of nutrition.
- The amount will remain at 6-8 ounces per feeding.
- The number of feedings will decrease to four to five a day.
- Baby should start to drink some liquids from a cup.
- Solid foods may be added to baby's diet at 6 months.
- Individual foods should be introduced one at a time to determine the baby's tolerance of each food.
- Cereal should be spoon-fed and not placed in the bottle.

### **3. 10 through 12 months**

- Breast milk or formula should continue to be the primary source of nutrition.
- The amount of formula will be about 6-8 ounces three to four times a day.
- Solid foods introduced earlier should continue to be fed.
- Additional foods such as cottage cheese, toast, soups and other soft table foods may be introduced.

## **Weight gain and growth**

1. A healthy premature baby whose intake is good and who was the right size for the time he or she was born can be expected to grow at the same rate as a full-term baby of the same "corrected age."
2. Normal size for age is usually reached at about 10 months after the time your baby should have been born.
3. The preschool child who was a very low birth weight baby (less than 1500 grams or 3½ pounds) may tend to be slender although normal height.
4. The very ill premature baby born with the appropriate weight may have very rapid catch-up growth at 6-9 months corrected age. If the growth continues, the baby's size will continue to increase. If the growth slows, the child may remain small.
5. Your baby born small for his or her gestational age may tend to remain small during childhood.
6. Generally, babies gain approximately ½ to 1 ounce of weight daily. There may be some days when your baby does not gain weight at all, but will gain more the next day.



## Feeding problems

### 1. Spitting

- Premature infants tend to spit up more than term newborns. The “valve” or opening between the esophagus (structure that connects the mouth and the stomach) and the stomach is not tight, so he or she tends to spit up small amounts with feeding and burping.
- If spitting becomes a serious problem and causes poor weight gain, your baby may be tested and treated for gastro-esophageal reflux (called G-E reflux or reflux).

### 2. Reflux (gastro-esophageal reflux or G-E reflux)

- Reflux means formula comes up from the stomach into a part of the esophagus (tube that connects the mouth and stomach).
- Reflux may cause vomiting or apnea (short periods when your baby does not breathe) or result in failure of your baby to gain weight.
- If your baby has reflux, the doctor may recommend placing your baby on his or her stomach or right side after feeding, raising the head of the bed slightly, or thickening the formula with cereal.
- Reflux usually slowly improves and finally disappears at 3-4 months corrected age in some babies and not until 9-12 months in others.
- Some babies may require medication.

### 3. Colic

- Colic is unexplained bouts of crying often with stomach fullness or stomach spasms. Your baby may stiffen his or her legs, scream loudly, and pass gas or vomit.
- Colic frequently occurs at the same time of the day, typically during the evening hours.
- The infant is not ill.
- Colic generally lasts for up to 3 months corrected age.
- This constant crying is one of the most trying of the common problems.
- Changing the formula usually has no effect.
- Colic is not caused by incorrect feeding methods.
- Often no cause can be found. Some experts feel this crying is a way for baby to “let off steam” after a lot of stimulation throughout the day. Most likely, it may be due to your baby’s immature nervous system.
- Suggestions that may help your baby include frequent burping, putting a warm towel or blanket under your baby’s stomach (be careful not to burn the baby), walking or rocking the baby, wrapping the baby warmly and snugly, laying the baby on his or her stomach, and keeping the baby in a quiet place (dim lights and low noise).
- There are no drugs that cure colic. Drugs often prescribed for colic are supposed to relieve spasms of the intestinal muscles and are often sedatives. Often they do not work. We do not recommend using drugs with babies unless there is evidence they are safe and effective. If there were a miracle drug, we would use it.
- There is no reliable cure but time and patience.

## Call the doctor if...

1. Baby’s appetite suddenly decreases for several feedings and your baby seems uninterested in the breast or bottle.
2. Vomiting continues.
3. Vomiting is forceful.
4. Vomit is green.

### **Vitamins**

1. If your baby is premature, the doctor may order extra vitamins.
2. Formula typically provides enough vitamins once your baby takes a quart (32 ounces) every day.
3. The usual dose of multiple vitamins is 1 cc or one dropper-full daily.
4. Mix vitamins in a little formula so they do not taste so strong.
5. Never give vitamins straight to your infant. The scent and flavor can literally take your baby's breath away.

### **Iron**

1. All babies need iron for proper brain growth and development.
2. Babies grow very fast during their first year and need iron to grow.
3. Without enough iron, babies may develop iron deficiency anemia (low blood count).
4. Premature infants who are bottle-fed are usually discharged from the hospital on formula with iron (iron fortified).
5. Iron in the formula is not the cause of colic, constipation or spitting up.
6. Some babies will be sent home on additional iron drops.

### **Vitamin D drops**

If your baby is exclusively or partially breastfeeding, talk to your pediatrician about vitamin D supplement drops.

Vitamin D is an essential vitamin that helps your baby's body absorb calcium for strong bones and teeth.

The American Academy of Pediatrics recommends using vitamin D supplements for exclusively or partially breast-fed babies because of low average levels of vitamin D in breast milk.

### **Fluoride**

If you use bottled water or well water, talk to your pediatrician about fluoride supplementation

My Baby's Feeding Information	
Formula:	
Additives:	
Amount of feeding:	
Feeding times:	
Birth weight:	
Discharge weight:	
Vitamins:	
Iron:	



## SECTION 3

### 3.5 HOW TO MAKE FORMULA

**My baby drinks \_\_\_\_\_ brand of formula.**

**I buy: (circle the type)**

Concentrate                  Powder                  Ready-to-Feed

**This is what I do when I make formula:**

- \_\_\_\_\_ Check the expiration date on the formula can.
- \_\_\_\_\_ Wash my hands and the bottles and nipples with warm, soapy water and rinse thoroughly.
- \_\_\_\_\_ Boil water for five minutes and let cool before mixing with formula. (well water only)
- \_\_\_\_\_ Mix formula as instructed or per directions on can
- \_\_\_\_\_ Store formula in a clean, covered container or in bottles.
- \_\_\_\_\_ Refrigerate formula after making it.
- \_\_\_\_\_ Premade formula stored on refrigerator for 24 hours.

**Tips to remember**

1. Formula left out of the refrigerator grows germs. Using formula that has been left at room temperature for more than two hours may make your baby sick.
2. Infant formula or breast milk has everything your baby needs to grow and be healthy.
3. Using a microwave oven to warm a bottle of formula is dangerous. The bottle may feel warm, but the formula may be hot enough to burn your baby.

**How do I know my baby is getting enough?**

Babies cry sometimes because they are hungry and sometimes for other reasons. Not all crying means your baby is hungry.

**Your baby is probably hungry when he or she:**

- Puts hand to mouth to suck
- Makes sucking noises or movements
- Holds a tight fist over stomach and cries

\_\_\_\_\_ I have noticed my baby doing these things.

**Your baby is probably full when he or she:**

- Refuses or lacks interest in the bottle or breast
- Relaxes arms alongside body and falls asleep

\_\_\_\_\_ I have realized my baby was full by noticing these signs.

**Check the signs you see in your baby:**

\_\_\_\_\_ My baby is gaining weight.

\_\_\_\_\_ My baby is having at least six wet diapers in 24 hours.

**These are signs that your baby is getting enough.**

Feeding schedule for newborn to 4 months old Age			
Age	Breast milk	or	Formula
Less than 1 month	every 1½-3 hours		2-3 ounces
1 to 3 months	every 2-3 hours		4-5 ounces
4 months every	every 3-4 hours		6-8 ounce

**Reminders**

- Infant formula or breast milk has everything your baby needs to grow and be healthy until 4-6 months of age.
- When your baby turns 4 months old, begin watching for signs that he or she is ready for rice cereal.

## SECTION 3

### 3.6 HOW TO PREPARE YOUR BABY'S FORMULA

1. Wash hands.  
Clean work area, bottles, nipples, utensils and any other items with hot, soapy water.
2. Heat water until boiling. Boil water for two to three minutes.  
Allow water to cool before mixing.

**Formula Name:** \_\_\_\_\_

Recipe
<b>To make one bottle:</b> Mix ____oz. water with _____ powdered formula.
<b>To make large batch:</b> Mix ____oz. water with _____ powdered formula. Makes ____oz. formula.

3. Refrigerate formula when finished.
  - Pour into clean container.
  - Prepared formula may be refrigerated for up to 24 hours.
  - NEVER warm formula in the microwave. This may result in a burn!

4. **Call your dietitian with questions.** \_\_\_\_\_  
410-601-0954 or 410-601-5728



## SECTION 4- GOING HOME

- 4.1 Rooming-in ..... pg. 1
- 4.2 Safety ..... pg. 2
- 4.3 Car Seat Safety ..... pg. 7
- 4.4 Temperature of your home ..... pg. 10
- 4.5 Visitors at home ..... pg. 12
- 4.6 Brothers and Sisters ..... pg. 13
- 4.7 Developmental Follow-Up ..... pg. 14
- 4.8 Illness ..... pg. 15
- 4.9 Outings ..... pg. 16



## SECTION 4

### 4.1 ROOMING-IN

Rooming-in is a term used when parents give total care to their baby in a home-like environment (private room) in the hospital. This is a time when parents can gain confidence in caring for their baby and ask questions. Rooming-in allows parents to provide all of their baby's care and have help readily available, if needed. When rooming-in, you will be given all the necessary supplies to care for your baby. **We will ask you to keep a record of feedings and urine and stool for us.**

When your baby is transferred to a room with you, it will probably be almost time for you to go home and be a "family." Rooming-in can make the change from hospital to home much smoother for you and baby. Parents may room-in on several occasions if they feel the need to do so or if the baby has special needs.

The next sections provide information on items to bring to the hospital and safety tips to follow when rooming-in. Rooming-in will be great! You are almost home!

#### **Parent items to bring**

- Picture identification (for example, driver's license).
- Car seat with approved features (harness to go over head and neck and slits on each side for seat belt).
- Clothing for baby to wear home and four receiving blankets (two blankets will be used for side rolls in the car seat).
- Sleepwear and change of clothing for you, as well as toiletries or other personal items needed.
- Food and drinks to be consumed while rooming-in; no alcoholic beverages are allowed.

*\* Meals provided to breastfeeding moms.*

**Parent reminders: The goal of rooming-in is to aid parents in preparation for going home with their baby. Assistance will be available if needed.**

#### **Safety tips**

- Never leave infant alone or unattended!
- Keep rooming-in recording sheet up to date.
- **Call for help at any time at ext. 2-3361 or ext. 2-0772.**
- Sound the emergency call button if a nurse is needed immediately because of baby's condition.
- **Do not smoke – it is not allowed!**
- Return baby to the NICU when you need to take a shower or need a break.
- When the need for bathroom use arises, if alone, leave bathroom door open and place crib next to bathroom door.

#### **Family unit support**

Nurses will be in periodically to offer assistance, answer questions, and continue or review discharge teaching.

## 4.2 SAFETY

### **Jewelry**

1. Each year, many infants and toddlers die due to suffocation from breathing small objects into their breathing passages and lungs.
2. Infants and toddlers should not wear jewelry of any kind. Necklaces, baby rings, bracelets, religious pins and pacifiers on strings are hazardous to the child's safety.
3. Pierced ears are not recommended for children until they are at least 4 years of age.

### **Earrings are responsible for:**

- Infections
- Pressure sores on the head and ears because the baby is unable to turn her head well
- Scar formation on the ears from the earring backs
- Suffocation due to the baby breathing parts of the earring into her lungs

### **Cribs**

1. Do not use cribs older than 10 years or broken or modified cribs. Infants can strangle to death if their bodies pass through gaps between loose components or broken slats while their heads remain entrapped.
2. Traditional drop-side cribs can no longer be made or sold. Immobilizers and repairs kits for these cribs are also not allowed.
3. Cribs should have slats not more than 2 inches apart.
4. The wood surfaces should be free of splinters and cracks, and have lead-free paint.
5. There should be no crossbars on the sides.
6. The mattress should be the same size as the crib so there are no gaps to catch arms or legs. Make sure there are no gaps larger than two fingers between the sides of the crib and the mattress.
7. The minimum rail height should be 22 inches from top of railing to mattress set at the lowest level.
8. The furniture should meet the standards of the Consumer Product Safety Commission.
9. Bumper pads are not recommended as the baby can potentially suffocate (SIDS risk).
10. Corner posts must be less than 5/8 inch high. Corner posts higher than this can catch the baby's clothing and are hazardous.
11. There should be no cutouts in the head or footboards where the baby could trap his or her head.
12. Begin to lower the crib mattress before the baby can sit unassisted. Have it at its lowest point before the baby can stand.
13. Do not place blankets or toys in the crib with the baby! Your baby may have trouble breathing if soft materials fall over his or her face.
14. Never place a crib near a window with blind or curtain cords, nor near baby monitor cords; babies can strangle on cords.

# What Does a Safe Sleep Environment Look Like?

*Reduce the Risk of Sudden Infant Death Syndrome (SIDS) and Other Sleep-Related Causes of Infant Death*



Use a firm sleep surface, such as a mattress in a safety-approved\* crib, covered by a fitted sheet.

Do not use pillows, blankets, sheepskins, or crib bumpers anywhere in your baby's sleep area.

Keep soft objects, toys, and loose bedding out of your baby's sleep area.

Do not smoke or let anyone smoke around your baby.



Make sure nothing covers the baby's head.

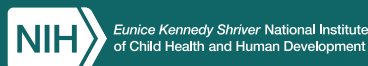
Always place your baby on his or her back to sleep, for naps and at night.

Dress your baby in sleep clothing, such as a one-piece sleeper, and do not use a blanket.

Baby's sleep area is next to where parents sleep.

Baby should not sleep in an adult bed, on a couch, or on a chair alone, with you, or with anyone else.

\*For more information on crib safety guidelines, contact the Consumer Product Safety Commission at 1-800-638-2772 or <http://www.cpsc.gov>.



# Safe Sleep For Your Baby



- Always place your baby on his or her back to sleep, for naps and at night, to reduce the risk of SIDS.
- Use a firm sleep surface, such as a mattress in a safety-approved\* crib, covered by a fitted sheet, to reduce the risk of SIDS and other sleep-related causes of infant death.
- Room sharing—keeping baby's sleep area in the same room where you sleep—reduces the risk of SIDS and other sleep-related causes of infant death.
- Keep soft objects, toys, crib bumpers, and loose bedding out of your baby's sleep area to reduce the risk of SIDS and other sleep-related causes of infant death.
- To reduce the risk of SIDS, women should:
  - Get regular health care during pregnancy, and
  - Not smoke, drink alcohol, or use illegal drugs during pregnancy or after the baby is born.
- To reduce the risk of SIDS, do not smoke during pregnancy, and do not smoke or allow smoking around your baby.
- Breastfeed your baby to reduce the risk of SIDS.
- Give your baby a dry pacifier that is not attached to a string for naps and at night to reduce the risk of SIDS.
- Do not let your baby get too hot during sleep.
- Follow health care provider guidance on your baby's vaccines and regular health checkups.
- Avoid products that claim to reduce the risk of SIDS and other sleep-related causes of infant death.
- Do not use home heart or breathing monitors to reduce the risk of SIDS.
- Give your baby plenty of Tummy Time when he or she is awake and when someone is watching.



## Remember Tummy Time!

Place babies on their stomachs when they are awake and when someone is watching. Tummy Time helps your baby's head, neck, and shoulder muscles get stronger and helps to prevent flat spots on the head.

\* For more information on crib safety guidelines, contact the Consumer Product Safety Commission at 1-800-638-2772 or <http://www.cpsc.gov>.

For more information about SIDS and the Safe to Sleep® campaign:

**Mail:** 31 Center Drive, 31/2A32, Bethesda, MD 20892-2425

**Phone:** 1-800-505-CRIB (2742)

**Fax:** 1-866-760-5947

**Website:** <http://safetosleep.nichd.nih.gov>

NIH Pub. No. 12-5759

August 2014

Safe to Sleep® is a registered trademark of the U.S. Department of Health and Human Services.



Eunice Kennedy Shriver National Institute  
of Child Health and Human Development



### Toys

1. If the part of a toy can fit in a toilet paper roll, the toy is not appropriate for children under the age of 3.
2. Toys should not have buttons, beads or objects on them that can be pulled off and swallowed.
3. Balloons are major choking hazards especially if they pop while near your baby's face.

### Bathing

1. We do not recommend the use of baby powder.  
It can easily get into the baby's breathing passages.
2. Never leave the baby alone in the bathtub or around any water.  
Keep the water level in the tub less than 3 inches.
3. Always check the temperature of the bath water before placing the baby in the tub.  
Turn cold water on first, then hot. Turn hot water off first.
4. Set the water heater lower than 120°F to prevent burning the baby.
5. Hold the baby with one hand and wash him or her with the other. Never let go of the baby.

### Kitchen

1. Do not pour hot liquids when holding the baby or when the baby is close by.  
Do not hold the baby when working at stove.
2. Do not heat bottles in the microwave. The formula may become too hot and burn the baby, even though the bottle feels cool. Also, steam could form inside the bottle and cause it to explode.
3. Use back burners.
4. Pot and pan handles should be turned toward back of stove.
5. Cover controls if on front of stove.
6. Do not use tablecloths. Infants and toddlers can grab the edges and pull the tablecloth and table contents off.
7. Have a fire extinguisher in the kitchen.
8. Avoid the following foods in the first four years;
  - peanuts
  - popcorn
  - round pieces of hot dog
  - hard candy
  - gum





## **General Safety**

1. Keep toilet seats and tops of aquariums closed securely.
2. Keep infants away from buckets of water.
3. Do not ever leave the baby in the direct sun.
4. Do not leave the baby in a parked car.
5. Wash flame-retardant clothing according to the label directions.
6. Use store-bought pacifiers so the baby will not be in danger of choking.  
Do not make pacifiers from nipples and rings.
7. Use safety straps on infant seats, high chairs, strollers and infant carriers.  
Place safety gates at top and bottom of stairs.
8. Plug or cover all unused electrical outlets.
9. Do not let baby chew on electrical cords. Check cords and repair any cord that is broken.
10. Keep all medicine and cleaning supplies out of baby's reach, locked up and in original containers.
11. Children under school age should not be left alone with the baby.
12. Be careful when walking with the baby in your arms. Avoid rugs or mats on slippery floors.
13. Place safety catches on cabinet doors when the baby begins to crawl.
14. Plastic bags should not be placed on the baby's mattress or pillows. Plastic bags should be stored away from the baby.
15. Install smoke detectors on every level of home. Test batteries monthly; replace yearly.
16. Plan an escape route from the house in case of fire and designate a place to meet.
17. Keep a 1-ounce bottle of syrup of ipecac in medicine cabinet and post the Poison Control telephone number near telephone.

## 4.3 CAR SEAT SAFETY

**The law requires that you bring your baby home from the hospital in an infant car safety seat.**

### *Choosing a car seat*

**When choosing a car safety seat for your preemie or low birth weight baby, keep these tips in mind:**

1. Choose an infant-only car safety seat with a three- or five-point harness system. Convertible car safety seats with a point-point harness system are also good.
2. Don't pick a car safety seat with a shield, abdominal pad or armrest. Your baby might have trouble breathing behind the shield or may hurt his or her face and neck in a sudden stop or crash.
3. A car safety seat with the shortest distance between the crotch strap and the seat back is best. Ideally, pick one with a crotch-to-seat back distance of 5 1/2 inches. That way, your baby won't slip forward feet first under the harness. You can also place a rolled diaper or blanket between the crotch strap and your infant. This will help keep your infant from slipping.

**\* Pounds (4lb +seats best)**

4. Car safety seats with multiple harness-strap slots are also good. They offer more choices than other seats and are better for small but growing infants. It's best to pick a car safety seat with harness straps that can be placed at or below your infant's shoulders.
5. **If you get a used infant seat, make sure:**
  - It is not more than five years old. Look for a label on the seat that indicates the date it was made.
  - It has never been in a crash. It's important to know the history of the seat.
  - It has not been recalled. You can check at [recalls.gov](http://recalls.gov).
  - It has labels explaining proper installation and the seat's weight and height limits.
  - It has the instruction manual.

### *Placing your infant in the car seat*

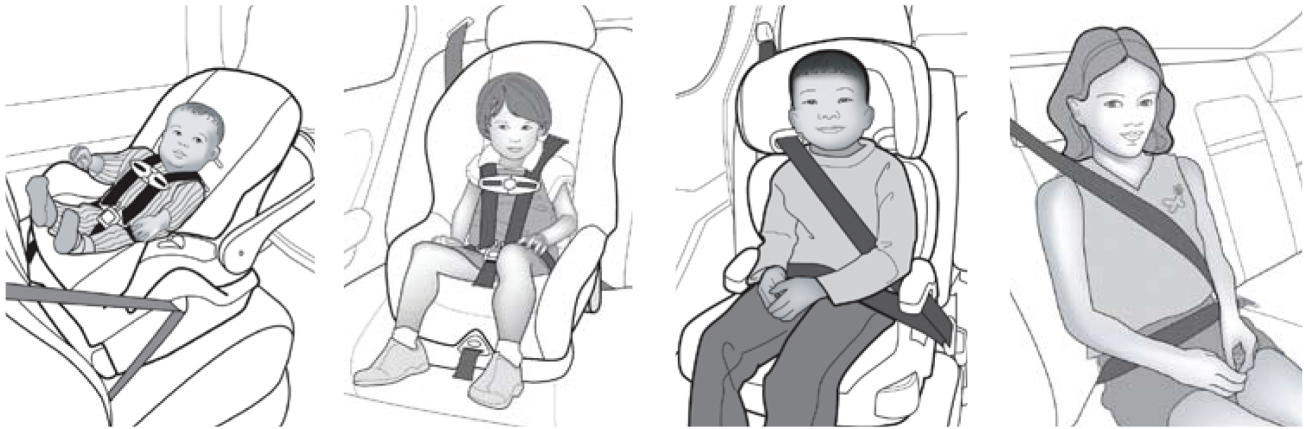
1. Now that you have bought the car safety seat, here's what you need to know about placing your infant safely in it.
2. Place your infant so he or she is facing the rear. Your infant should be rear-facing until 2 years of age.
3. Place your infant so that his or her buttocks and back are flat against the seat back. The harness should be snug, with the car seat's retainer clip halfway between your baby's neck and stomach. The clip should not be on your baby's belly or in front of his or her neck.
4. Use only the head-support system that comes with your car safety seat. Avoid any head supports that are sold separately. If your infant is very small and needs more support for his or her head and body, then place blanket rolls on both sides of your infant.
5. Do not place a baby dressed in a snowsuit or winter coat in a car seat. Instead, after the car seat belts are secured, cover the baby with a blanket for warmth.

### ***More important information***

- **Recline a rear-facing car safety seat at about 45 degrees** or as directed by the instructions that came with the seat. If your infant's head still falls forward, place a tightly rolled blanket or pool "noodle" under the car safety seat. That way your child's car seat is at the recommended 45-degree angle.
- **Never place a rear-facing car safety seat in the front passenger seat of any vehicle.** If you have to stop suddenly or are in a crash, the passenger-side front air bags can hit the car safety seat and cause serious harm to your baby.
- Remember, the back seat is the safest place for all children to travel while in a car.
- Whenever possible, have an adult seated in the rear seat near the infant in the car safety seat. If a second caregiver is not available, know that you may need to safely stop your car to assist your infant, especially if a monitor alarm has sounded.
- **Never leave your infant unattended in a car safety seat, either inside or outside of a car.**
- Avoid leaving your infant in car safety seats for long periods to lessen the chance of breathing trouble. It's best to use the car safety seat only for travel in your car.
- Preterm and low birth weight infants in car safety seats have a higher chance of slowed breathing or heart rate. Because of that, your NICU staff may suggest they watch your preterm infant in the car safety seat for 90 to 120 minutes. They may watch your infant even longer if your travel home after discharge is more than two hours.
- NICU staff may also provide instructions about how best to place your infant in the car safety seat. This will help reduce your infant's risk of breathing and heart trouble while in the car safety seat.
- Your infant's safety is always important to you. And now you have some help on keeping your preemie safe when traveling in your car.

# Maryland's Child Passenger Safety Law

(Effective October 1, 2012)



- **Every child** under 8 years old must ride in an appropriate child restraint\* unless the child is 4 feet, 9 inches or taller.
- **Every child** from 8 to 16 years old who is not secured in a child restraint must be secured in a vehicle seat belt.

\* "Child restraint" includes car seats, booster seats, or other federally approved safety devices.

## Protect your children as they ride!

Children under 13 years old should ride in the back seat.

The back seat is the safest.

### Questions?

Call Maryland Kids In Safety Seats (KISS)

at 1-800-370-SEAT or (410) 767-6016,

e-mail: [dhmh.kiss@maryland.org](mailto:dhmh.kiss@maryland.org)

or visit us online at [www.mdkiss.org](http://www.mdkiss.org)



#### Maryland KISS Program

Martin O'Malley,

Governor

Anthony G. Brown,

Lt. Governor

Joshua M. Sharfstein, M.D.,

Secretary, DHMH

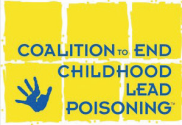
## 4.4 TEMPERATURE OF YOUR HOME

### Temperature of home

1. Your baby has been able to stay warm without help from an incubator or special beds for some time. Babies do not sweat or shiver to help maintain their normal temperature.
2. There is no need to keep your house as warm as the intensive care nursery! Listed are some guidelines that may help until your baby is 6 to 8 pounds – and more robust.
  - Keep the house temperature in the low- to mid-70 degree range.
  - Keep baby out of drafts, away from windows, fans and air conditioners.
  - Look and touch baby to tell if he or she is hot or cold.
  - Signs of temperature problems may be: cool hands and feet or pale, mottled-blue color.
  - Do not leave your baby unprotected in the direct sun. Keep your baby covered and check with your doctor before using sunblock lotion on your baby's skin when out of doors.
  - On particularly warm days, your baby may need extra breastmilk, formula or water.

### Dressing the baby

1. Dress the baby the way you feel comfortable.
2. When your baby weighs less than 7 pounds, dress him or her with a knit cap and booties when the air is cool (babies lose heat from their heads).
3. Clothes that fit close to the skin are more warming than loose clothing.
4. Do not overdress your baby!



## Protect Your Child and Family from Lead Poisoning: Ask-Act-Be Aware



### ASK

#### WHAT IS LEAD?

Lead is a poisonous heavy metal that can be found in:

- Paint and dust in homes built before 1978
- Candy, make-up, glazed pottery and folk medicines from other countries
- Certain jobs like construction and plumbing
- Soil and tap water

#### WHY IS IT DANGEROUS?

Damage from lead poisoning is **irreversible**. Children that are under age 6 and pregnant women are at greatest risk.

Lead poisoning causes:

- Learning disabilities, aggressive behavior, ADHD, decreased IQ, hearing loss, speech delays and other health effects in young children
- High blood pressure, increased risk of early death, and kidney damage in adults
- Low birth-weight babies, miscarriages, and stillbirths in pregnant women

#### HOW DO YOU GET POISONED?

Lead poisoning is most often caused by **deteriorated or disturbed lead-based paint** in structures built before 1978. It enters your body by:

- Ingesting paint chips or lead dust on hands or toys
- Breathing lead dust created when lead-based paint is disturbed

### ACT

#### GET YOUR CHILD TESTED!

There is no safe level of lead in a child's body. If you live in, or your child spends time in a home or apartment built before 1978:

- Get your child's blood tested for lead by your doctor or at a clinic
- Follow-up and ask the doctor or clinic for the test results. If lead is detected, immediate action is needed to lessen any harmful impact.

**If you are a pregnant woman** and live in or have been around recent demolition or renovation of a home built before 1978, **GET tested!**

### BE AWARE

#### PREVENT EXPOSURE

If your home was built before 1978, have it tested for lead. In addition:

- Look for chipping, flaking, peeling paint anywhere your child lives or visits
- Wash your child's hands, toys and blankets often
- If you are renovating, hire certified contractors that comply with all lead laws, including the Renovation, Repair and Painting Rule (RRP)

If you're doing your own renovation work:

- Keep your children and family away from work area
- Cover furniture and floors with plastic
- Wet scrape rather than dry scrape to reduce lead dust and conduct a wet clean and use a HEPA vacuum to clean up after the work

For more information, contact: Coalition to End Childhood Lead Poisoning at 410-534-6447

or visit [www.greenandhealthyhomes.org](http://www.greenandhealthyhomes.org)



## 4.5 VISITORS AT HOME

### Visitors

1. Many friends and relatives want to visit you when your baby is finally home. They will want to hold the baby, coo over the baby and shower the baby with love and affection. These friends and relatives are well-meaning but may bombard you and your baby with too much help.
2. Ask friends and relatives with any illness in their family not to visit.
3. Ask visitors to look but not to touch, wake or handle your sleeping baby.

### Handling the baby

1. Sanitize hands before touching baby.
2. Only the parents and immediate family (or very close friend) should handle your baby the first few weeks at home. After all, you have been separated from your baby for long enough. You need to get to know each other.
3. Handling by a lot of people tends to affect your baby's feeding and sleeping schedule – especially after everyone has gone home. Babies may also become fussy after being handled excessively or passed between different people. They are very aware of the changes.
4. Use the statement “Dr. \_\_\_ said only a few people should handle the baby the first month,” or something like that. It helps make you not look overprotective or feel badly about having your wishes carried out.

### Smoking

1. There should be no smoking in the house.
2. People who have been smoking should use a cover shirt when handling baby.
3. If you or a family member smokes, this may be a good time to try to quit or cut down. Smoking cessation programs are available through the hospital or health department (check with your baby's nurse).

### For the parents

1. Daily routines do not quickly return to normal.
2. This is a difficult time for parents as well. You may be unhappy and anxious at times. Sleep, privacy and calm days may be difficult to find!
3. These suggestions may seem difficult, particularly if your baby has any special problems.
4. Simple explanations and including the older child in some part of the special care help him or her understand and feel better about some of the “bad” feelings the older child may have about the baby.

## 4.6 BROTHERS AND SISTERS

1. Reactions of children to a new brother or sister may vary.
2. A child's age will determine how much you can discuss the events and feelings surrounding the birth of a new baby.
3. Brief and simple explanations should be used with children under 2 years of age.
4. Any child feels threatened in some way by the birth of a new baby.
5. A child's age, personality, amount of preparedness for the new baby and the sensitivity of parents to his or her feelings affect the child's adjustment to the new baby.
6. Some babyish behavior is normal in the older child when a new baby arrives. Wetting, extra crying, baby talk and sleep problems are all typical temporary behaviors. Do not punish the child; heap on extra love and reassurance and the undesirable behavior will gradually fade away.
7. It is not uncommon for a toddler to hit or hurt a newborn, so keep an eye on brothers and sisters. Avoid leaving them alone with the baby until the jealous feelings have gone away.

### **What to do**

1. Set up the crib. If there is to be a new bed for the older child, place him or her in the new bed several months before the new baby arrives.
2. Rock the older child often.
3. Tell the older child how much you love him or her and that you will always love him or her the way you do now.
4. Have a wrapped present for the older child when you come home with the new baby.
5. Let the older child open presents for the baby.
6. Do not criticize the older child's attempts to help. The baby probably does not mind his or her sibling's awkward attempts at care and affection.
7. Lower your expectations for the older child after the baby's birth and when taking the new baby home.
8. Try to get back to the special activities or routines the older child enjoyed: story reading before bedtime, going to the grocery store or going for a walk.
9. Try not to be overprotective; this interferes with the older child's ability to accept the new baby.
10. Most children 15–18 months get a sense of control and pride by helping out.
11. Being allowed to touch, hold or change the baby, or even feed the baby, can be an important part of making the older child comfortable.
12. Daily routines are extremely important for children – especially those under 5 years old.
13. Use a night-light in the bedroom if the child becomes frightened of the dark.
14. A recently toilet-trained child should be given the chance of going back into diapers without teasing or punishment.
15. Giving an older child other responsibilities may help.
16. An older child may be less upset if the father carries the baby into the house. After being separated, the child wants his or her mother, not the baby. Let the child briefly greet the baby, and then try to focus your attention on the older child.

## 4.7 DEVELOPMENTAL FOLLOW-UP

As the time for your baby's discharge gets closer, you are probably excited as well as having some butterflies. You may have many questions and some concerns about your baby's development:

- Will my baby be slow in his or her development?
- What should I look for?
- How can I help my baby begin to play and interact more?
- What toys are best?
- These are normal concerns for parents of premature infants.

Many things influence infant development: genetics, development of the nervous system, and environmental experiences or feedback. Infants and toddlers grow and learn new skills at an incredible rate. Therefore, it is important to have your baby's development checked periodically during the first two years of life by the baby's primary care physician. Very low birth weight infants and sick babies are at greater risk for falling behind in their development. If your baby is in this high-risk category, you will be given an appointment at discharge for the Neonatal Follow-up Program.

The Neonatal Follow-up Program is staffed by specially trained health care providers and may include pediatric physical therapists, nurses and developmental pediatricians. The program helps identify early developmental concerns in many areas: mental capabilities, sensory-motor skills, social skills, and speech and language development.

Family or caregiver education and support are given as well as help finding services in the community when needed. Special testing is used to evaluate your baby's skills and abilities. After the testing and examination are completed, the team members will briefly meet with you to discuss any concerns and recommendations they may have. After each office visit, reports will be mailed to your infant's primary doctor and appropriate community service systems to inform them of the program's findings.

## 4.8 Illness

### Signs of illness

All babies get ill. This does not mean that you did something wrong! You should become aware of any signs that may alert you that your baby is sick. Some signs that may indicate illness include:

1. Your baby does not feed as well as normal.  
The baby may not seem hungry and may not take as much of the feeding as normal.
2. Your baby vomits with force all or most of the feedings.
3. Your baby has frequent, watery stools (has more stools than usual and they are very watery) that are green, bloody, foul smelling or have mucus in them.
4. Your baby does not pass as much urine as usual (fewer wet diapers) – no wet diaper in eight hours. He or she should have at least six to eight wet diapers in a 24-hour period.
5. Your baby cries more than usual or appears more irritable. The baby cannot be calmed and comforted easily by your usual means. Your baby may refuse to sleep.
6. Your baby does not seem as active as usual. He or she may sleep more or may be difficult to wake.
7. Your baby may have trouble breathing (breathes faster and harder and may draw in chest muscles with each breath or may have noisy breathing).
8. Your baby may have a fever. Contact the doctor if your baby's temperature is over 101°F (rectal) or 100°F axillary (under arm) in a 24-hour period and there are other signs of illness.
9. Your baby's color may appear pale, bluish or marbled-looking.
10. Your baby has an unusual rash or skin irritation.

**Call the doctor if your baby appears sick or starts to act differently. It is best to have your baby checked or to receive the advice of the doctor.**



## 4.9 OUTINGS

### When to take the baby out

Your baby can be treated mostly like a regular newborn. The following guidelines may be helpful in knowing where you may take your baby, especially during the first few months:

1. Avoid outings when the weather is rainy, windy, or exceptionally cold or hot.  
Try to keep your baby away from adults and children with colds or other illnesses.
2. Dress your baby according to the weather. As a guideline, dress your baby with about the same type of clothing that you are wearing. Be careful not to overdress your baby. On days with the temperature above 80°F, a blanket is usually not necessary. Avoid direct sunlight.

### Places to take the baby

1. You can take your baby “out,” but limit your trips to around your house or block, the porch, homes of close friends and relatives, and doctors’ visits.
2. Avoid places with large crowds (grocery stores, church, shopping malls, etc.) during the first one to two months. It is difficult to control well-meaning people who want to look and touch your “cute little baby.”



## **SECTION 5- CPR**

**Cardiopulmonary resuscitation (CPR) .....pg. 1**





# CPR—CHILD AND INFANT

## NO BREATHING

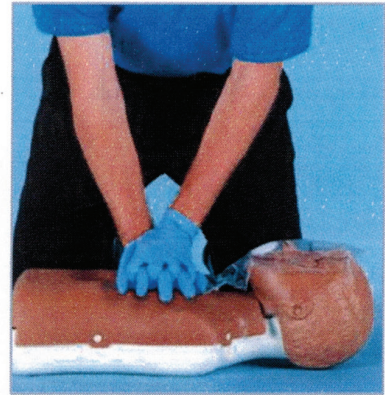
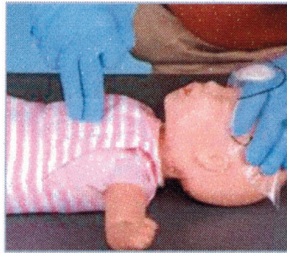
**AFTER CHECKING THE SCENE AND THE INJURED OR ILL CHILD OR INFANT:**

### 1 GIVE 30 CHEST COMPRESSIONS

Push hard, push fast in the middle of the chest.

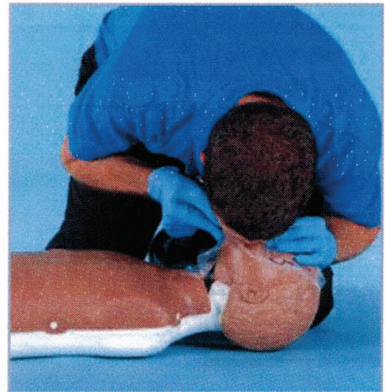
- Child: Push about **2** inches deep.
- Infant: Push about **1½** inches deep.
- Push fast, at least **100** compressions per minute.

**TIP:** Child or infant must be on firm, flat surface.



### 2 GIVE 2 RESCUE BREATHS

- Tilt the head back and lift the chin up.
- Child: Pinch the nose shut, then make a complete seal over child's mouth.
- Infant: Make complete seal over infant's mouth and nose.
- Blow in for about **1** second to make the chest clearly rise.
- Give rescue breaths, one after the other.



### 3 DO NOT STOP

Continue cycles of CPR. Do not stop CPR except in one of these situations:

- You find an obvious sign of life, such as breathing.
- An AED is ready to use.
- Another trained responder or EMS personnel take over.
- You are too exhausted to continue.
- The scene becomes unsafe.

**TIP:** If at any time you notice an obvious sign of life, stop CPR and monitor breathing and for any changes in condition.

### WHAT TO DO NEXT FOR CHILD AND INFANT

- IF AN AED BECOMES AVAILABLE—Go to AED, PANEL 8.
- IF BREATHS DO NOT MAKE CHEST RISE—Give **CARE** for unconscious choking (PANEL 6).

## CONSCIOUS CHOKING—INFANT CANNOT COUGH, CRY OR BREATHE

**AFTER CHECKING THE SCENE AND THE INJURED OR ILL INFANT, HAVE SOMEONE CALL 9-1-1 AND GET CONSENT FROM THE PARENT OR GUARDIAN, IF PRESENT.**

### 1 GIVE 5 BACK BLOWS

Give firm back blows with the heel of one hand between the infant's shoulder blades.



### 2 GIVE 5 CHEST THRUSTS

Place two or three fingers in the center of the infant's chest just below the nipple line and compress the breastbone about 1½ inches.

**TIP:** Support the head and neck securely when giving back blows and chest thrusts. Keep the head lower than the chest.



### 3 CONTINUE CARE

Continue sets of **5** back blows and **5** chest thrusts until the:

- Object is forced out.
- Infant can cough forcefully, cry or breathe.
- Infant becomes unconscious.

### WHAT TO DO NEXT

- **IF INFANT BECOMES UNCONSCIOUS—CALL 9-1-1**, if not already done. Carefully lower the infant onto a firm, flat surface and give **CARE** for an unconscious choking infant, beginning with looking for an object (PANEL 6, Step 3).



## SECTION 6- REFERENCE

6.1 Abbreviations ..... pg. 1

6.2 Dictionary ..... pg. 3

6.3 Journal/Notes ..... pg. 11



## SECTION 6

### 6.1 ABBREVIATIONS

**A & B** – Apnea and bradycardia, see Apnea of Prematurity

**Algo** – Hearing screens

**Bili** – Bilirubin

**BP** – Blood pressure

**BPD** – Bronchopulmonary dysplasia

**Cc or ml** – Metric measurement of liquid; 30cc (or ml) is 1 ounce; 5 cc is 1 teaspoon

**CNS** – Central nervous system (brain and spinal cord) or clinical nurse specialist

**CPAP** – Continuous positive airway pressure (air or oxygen delivered under a small amount of pressure)

**CPR** – Cardiopulmonary resuscitation

**CPT or Chest PT** – Chest physiotherapy (vibrating or tapping on the chest)

**ET** – Endotracheal (refers to a tube placed through the mouth or nose to the wind pipe)

**Gms or grams** – Metric weight; 450 grams = 1 pound; 1 kilogram (Kg) = 1000 grams

**HMD** – Hyaline membrane disease (another name for respiratory distress syndrome)

**HI-FI** – High frequency ventilator

**ID** – Infectious disease or identification

**IMV** – Intermittent mandatory ventilation, number of breaths per minute by the ventilator

**IV** – Intravenous (by vein)

**IVH** – Intraventricular hemorrhage

**LP** – Lumbar puncture (getting sample of spinal fluid using a needle)

**NDST** – Neurodevelopment screening test

**NEC** – Necrotizing enterocolitis

**NG** – Nasal gastric (tube going from nose to stomach)

**NICU** – Neonatal Intensive Care Unit

**NPO** – Nothing by mouth

**O<sub>2</sub>** – Oxygen

**OG** – Oral gastric (tube going from mouth to stomach)

**OT** – Occupational therapist

**PDA** – Patent ductus arteriosus

**PIC or PCVL** – a tiny catheter or tube placed into a vein to give fluids or nutrition

**PICC** – tiny catheter inserted into vein to give fluids and nutrition

**PT** – Physical therapist

**RN** – Registered nurse

**ROP** – Retinopathy of prematurity

**RDS** – Respiratory Distress Syndrome

**RRT** – Registered respiratory therapist

**SIDS** – Sudden infant death syndrome

**SIMV** – Synchronized intermittent mandatory ventilation (machine breaths timed to baby's)

**TPR** – Temperature, pulse and respiration

**TTNB** – Transient tachypnea of the newborn

**TPN or TNA** – Total parenteral nutrition (nutrition by vein)

**UAC** – Umbilical artery catheter, see equipment

**UTI** – Urinary tract (kidney or bladder) infection

**UVC** – Umbilical venous catheter, see equipment

**VS** – Vital signs (temperature, pulse, respiration, blood pressure)

## SECTION 6

### 6.2 DICTIONARY

#### A

**ambu bag:** a piece of respiratory equipment. Used with a face mask and placed over baby's nose and mouth, or attached to an endotracheal tube or trach tube; it is squeezed to give the baby oxygen and inflate the lungs.

**anomaly:** malformed body part

**anoxia:** lack of oxygen

**apnea:** stop breathing for 15 to 20 seconds

**areola:** dark area of the breast around the nipple

**asphyxia:** lack of oxygen and blood flow to the body

**aspiration:** breathing fluid (formula, stomach contents, meconium – baby's first stool) or objects into the lung

#### B

**bacteria:** germs that make you sick; treated with antibiotics

**bagging:** squeezing the ambu bag covering the baby's nose and mouth to give the baby oxygen and inflate his or her lungs. Also used with a breathing tube in the baby's throat (endotracheal tube) or a tracheotomy (special airway placed by surgeon).

**bilirubin:** breakdown product of red blood cells; too much in the blood causes jaundice, a yellow color of the skin

**blood gas:** a lab test to determine how much oxygen and carbon dioxide the baby has in his or her blood. The baby is stuck for the blood if he or she does not have a special IV (umbilical artery catheter [UAC]).

**bronchopulmonary dysplasia (BPD):** lung problem caused by oxygen, ventilators and prematurity. Some babies need oxygen after discharge from the hospital.

**bradycardia:** slow heart rate; usually less than 100 in a newborn or premature baby

breech delivery: baby born bottom, feet or arm first

#### C

**Candida albicans (monilia or yeast infection):** infection that causes thrush and other "yeast" infections. Seen most often in baby's mouth or diaper area.

**carbon dioxide:** gas breathed out when the baby exhales

**cardiologist:** doctor who specializes in the heart and circulation of blood

**cardiopulmonary resuscitation (CPR):** method to revive a person whose heartbeat and breathing have stopped

**cerebrospinal fluid (CSF):** fluid made and stored in the ventricles of the brain. Same as spinal fluid  
cyanosis: blue color of baby's skin, fingernails or inside of mouth and tongue. Caused by a lack of oxygen.



**chest physiotherapy (CPT):** clapping on the baby's chest with a hand or using a cup to loosen mucus in the lungs

**circumcision:** removal of the foreskin from the penis

**colostomy:** surgical opening made in the large intestine which is connected to the outside of the belly to permit elimination of stool (BM)

**colostrum:** thin yellow or clear breast milk that is present before the true breast milk comes in

**complete blood count (CBC):** blood test that looks at the types and number of cells in the blood. Used to see if the baby has anemia (low blood) or an infection.

**computerized axial tomography (CAT scan or CT scan):** computerized X-ray that takes special pictures of the baby's brain

**congenital abnormality:** birth defect; malformation or abnormality present at birth

**congestive heart failure (CHF):** heart is not able to pump blood well because of malformed heart, illness or infection

**corrected age:** length of pregnancy (gestational age) plus the baby's calendar age

**cytomegalovirus (CMV):** a virus the baby can get before he or she is born that causes birth defects and illness. The baby can also get it after birth and it can cause illness.

## D

**diphtheria, pertussis, tetanus (DPT):** one of the baby shots or immunizations

**diuretic:** drug used to get rid of extra body water

**doppler:** special blood pressure machine

**Down syndrome:** chromosome abnormality (Trisomy 21) where the baby has varying physical problems and varying degrees of mental retardation

**dyspnea:** difficult breathing

## E

**echocardiogram (echo):** picture of the heart taken using a similar process as an ultrasound of your stomach (uses sound waves instead of X-rays)

**edema:** swelling or puffiness

**electrocardiogram (EKG):** tracing of the electrical impulses of the heart

**electroencephalogram (EEG):** tracing of the electrical impulses of the brain

**electrolytes:** chemicals in the body that make it function well; can be checked by drawing blood for lab work emergency room (ER)

**endotracheal tube (ET tube):** small plastic tube placed in the nose or throat and connected to a ventilator or breathing machine. The tube is in the baby's breathing passage (trachea) and delivers oxygen and pressure to the lungs.

**exchange transfusion:** removing most of the baby's blood in small amounts and replacing it with fresh blood in small amounts. Most often used for a very high bilirubin level.

**extra corporeal membrane oxygenation (ECMO):** process used to circulate a baby's blood in a special machine while his or her lungs rest. It is a type of heart pump like used on adults having heart surgery. Babies may stay on the pump for more than a week, along with a breathing machine.

**extubation:** removal of the endotracheal (breathing) tube (ET tube)

## **F**

**fellow:** a neonatal fellow is a pediatrician who is doing special training to become a neonatologist. A neonatologist is a doctor who cares for premature or critically ill babies.

**fontanel:** soft spot on the top of the baby's head. Another soft spot is toward the back of the baby's head.

**fraternal twins:** twins formed from two fertilized eggs. They do not look alike. There can be a boy and a girl or two girls or two boys.

**full term:** baby born between the 38th and 42nd week of pregnancy or gestation

## **G**

**gastrostomy:** surgical hole on the tummy into the stomach. A tube is placed in the stomach to feed babies unable to eat by mouth.

**gavage feeding:** feeding by a tube placed in the baby's nose or mouth into the stomach

**gestation:** length of time from first day of mother's last menstrual period to the time of birth. Full-term is 40 weeks gestation.

**gram (gm, G, GM):** weight in metric system. One ounce = 28 grams.

## **H**

**heel stick:** method to prick heel (finger stick is used also) to get blood for lab tests

**hematocrit (HCT or "crit"):** percent of red blood cells in the blood. Your baby may receive a transfusion based on the hematocrit.

**hematologist:** a doctor who specializes in blood problems

**hernia:**

- **inguinal hernia:** lump under the skin in the groin or scrotum caused by the intestines pushing through a weak place in the belly wall. A common preemie problem. May be fixed by surgery before the baby leaves the hospital. May occur at home after discharge. If so, notify the baby's doctor.
- **umbilical hernia:** a pushing out of the navel or belly button caused by the intestines pushing through a weak place in the belly wall. Usually goes away by the age of 2. Fixed by surgery after 2-3 years of age if still present.

**high-risk baby:** baby at risk for developmental problems. Includes baby's with intracranial hemorrhages, birth weight less than 1200 grams, long-term breathing machine (ventilators), less than 30 weeks gestation, small for gestational age babies, congenital infections, meningitis, birth defects, etc.

**house officer:** doctor who is finishing his or her training; a resident or fellow

**house staff:** doctors who are finishing their training; residents and fellows

**hyaline membrane disease (HMD):** also called respiratory distress syndrome (RDS); a breathing problem of premature babies caused by lack of a fluid called surfactant that keeps small air sacs in the lungs open

**hydrocephalus:** extra spinal fluid in the spaces of the brain due to a blockage in circulation or absorption. Head may become large.

**hyperbilirubinemia:** high bilirubin level (yellow jaundice). Common in newborns. Some babies are placed under a special light (bili light) or blanket that helps the body break down the bilirubin. The baby gets rid of the bilirubin in his or her stools (bowel movements).

**hypoxia:** lack of oxygen

## I

**identical twins:** twins that occur from the division of a single fertilized egg. They are the same sex and look alike.

**ileostomy:** surgical opening made in belly and the small intestine is brought to the outside to allow elimination of stool

**immunization:** medicines given to protect the child against harmful childhood diseases. Given by mouth or by shot.

**in utero:** inside the womb or uterus

**inborn:** baby born in the same hospital with a Neonatal Intensive Care Unit

**indomethacin:** medicine given to close the patent ductus arteriosus (vessel outside of the heart that can make the baby's breathing and heart problems worse)

**infant of a diabetic mother (IDM):**

**intracranial hemorrhage (ICH):** bleeding in or around the brain

**intravenous (IV):** tube or needle placed in the vein to give fluids, medications or blood

**intraventricular hemorrhage (IVH):** bleeding into the ventricles in the brain

**intubation:** placing a small tube in the baby's windpipe (trachea) to give oxygen and pressure by an ambu bag or breathing machine

**isolette:** an incubator (plastic box) babies are placed in to keep them warm while they grow and get well

## J

**jaundice:** skin and whites of the eyes become yellow, caused by a high bilirubin

**jet ventilator:** special breathing machine that uses fast rates to breathe for babies who have special lung problems

## K

**kilogram:** unit of weight in the metric system. 1kg = 2.2 pounds; 1kg = 1000 grams.

## L

**lactation:** making milk in the breast

**lactose:** sugar in breast milk or formula

**Lasix:** medicine that helps get rid of extra body water. It is a diuretic.

**let-down reflex:** flow of milk into the nipple

**licensed practical nurse (LPN)**

**licensed vocational nurse (LVN)**

**low birth weight infant (LBW):** baby who weighs less than 5 pounds at birth. The baby can be premature or full-term.

**lumbar puncture (LP; spinal tap):** procedure where a hollow needle is inserted between the bones in the back to withdraw spinal fluid

## M

**meconium:** baby's first bowel movement, green-black color and sticky. Sometimes baby has a stool while in the uterus before birth.

**meconium aspiration:** breathing the meconium and amniotic fluid into the lungs

**meningitis:** infection of the lining of the brain and spinal cord

**meningocele:** birth defect where the tissue lining the brain and spinal cord come out through an opening in the skull or spinal column

**milliliter (ml):** unit of volume. 5ml = 1 teaspoon; 30ml = 1 ounce

**monilia:** yeast infection found in the baby's mouth or diaper area

**mucus:** sticky material made in the nose and throat

**murmur:** sound made by blood flowing through the heart

## N

**nasogastric tube (NG tube):** small plastic tube placed in the baby's nose or mouth into the stomach used for feeding. Sometimes the tube is placed in the stomach to keep it empty when the baby is sick and not feeding.

**navel:** belly button; umbilicus

**necrotizing enterocolitis (NEC):** an infection of the intestines that sometimes results in part of the intestines dying. The dying part is removed by surgery.

**neonatal nurse practitioner (NNP):** a registered nurse (R.N.) who has special training in the care of critically ill babies. An NNP may give medical care, discharge teaching and other types of care under the supervision of a doctor. Performs special procedures.

**neonatal period:** the first 28 days of life

**neonate:** baby during the first month of life

**neonatologist:** baby doctor (pediatrician) who has specialized training in the care of premature babies or critically ill newborns

**neurologist:** a doctor who specializes in problems of the brain and nervous system  
Newborn or Neonatal Intensive Care Unit (NBICU or NICU or NICN)

**nippling:** sucking on a bottle filled with formula or breast milk

## O

**occupational therapist (OT):** person who treats problems involving the use of muscles, also may work with babies who have trouble eating

**ophthalmologist:** doctor who specializes in eye problems

**orthopedist:** doctor who specializes in bone problems

**outborn:** baby transported from another hospital for care after his or her birth

## P

**patent ductus arteriosus (PDA):** small vessel outside of the heart that sometimes fails to close after birth. Sometimes it is closed with medicine or by surgery. Sometimes it causes the baby to have breathing and heart problems.

**periodic breathing:** a type of breathing pattern. The baby will stop breathing for a few seconds then breathes quickly.

**persistent fetal circulation (PFC) or persistent pulmonary hypertension of the newborn (PPHN):** at birth the circulation and breathing changes. In PPHN the baby's blood flow does not change and continues to bypass the lungs. When this happens, the body and brain do not get enough oxygen.

**phenobarbital:** drug used to treat seizures

**phototherapy:** treatment of yellow jaundice or high bilirubin by placing the baby under bright light (bili light) or on a blanket (bili blanket)

**physical therapist (PT):** person who treats feeding problems and problems of the muscles

**placenta abruptio:** placenta pulls away from the wall of the uterus (womb). There is often bleeding. A Cesarean (C-section) delivery is often needed.

**placenta previa:** placenta is located in an abnormal place (over the opening of the womb). Bleeding during the pregnancy can occur. Cesarean (C-section) delivery is often needed.

**pneumogram (sleep study):** 12- or 24-hour recording of the baby's breathing and heart rate patterns to see if there are unusual patterns during sleep or feeding

**postpartum:** time lasting 6 weeks after mom delivers a baby

**postural drainage:** method of positioning a baby so mucus can drain from the lungs

**premature baby (pre-term baby):** baby born before the end of the 37th week of pregnancy

**premature rupture of the membranes (PROM):** the bag of water (amniotic fluid) the baby floats in leaks or breaks before labor

**prenatal:** before birth

**primary nurse:** nurse who is responsible for providing care and coordinating care of a specific baby for entire time baby is in the unit

**pulse oximeter:** machine that reads the oxygen saturation of blood. The pulse oximeter is taped to baby's hand, finger, or toe.

## R

**registered nurse (R.N.)**

**resident:** doctor in training after medical school

**residual:** formula still in the stomach before the next feeding

**respirator:** machine used to breath for the baby. Also called a ventilator.

**respiratory distress syndrome (RDS):** See hyaline membrane disease (HMD).

**retina:** the back of the eye

**respiratory distress syndrome (RDS):** See hyaline membrane disease (HMD).

**retinopathy of prematurity (ROP):** an eye disease in babies. Many things may cause it, including oxygen, ventilators or prematurity. The mild form may heal on its own, but severe ROP may lead to the retina becoming detached (loose) and blindness.

**rubella:** virus that causes German measles

## S

**seizure:** abnormal electrical activity in the brain that causes unusual muscle twitches

**shunt (VP):** tube that drains spinal fluid from a ventricle in the brain to the belly

**strabismus:** eyes that cross or turn outward due to muscle weakness

**subarachnoid hemorrhage:** bleeding in the area around the outside of the brain

## T

**tachycardia:** rapid heart rate (above 160 beats per minute in a newborn or premature baby)

**tachypnea:** rapid breathing

**term baby:** baby born between the 38th and 42nd week of pregnancy (gestation)

**theophylline:** drug used to stimulate the baby's breathing

**thrush:** fungal (yeast) infection of the mouth. Baby has white patches on the tongue and insides of the mouth.

**TORCH titers:** test for viral infections toxoplasmosis, rubella, cytomegalovirus and herpes

**trachea:** windpipe or breathing tube

**tracheotomy:** surgical opening made through the skin and into the breathing tube (trachea) so air can get to the lungs when there is a blockage. Also done to babies requiring long-term ventilation management.



## U

**ultrasound:** method of taking pictures inside the body using sound waves

**umbilicus:** belly button; navel

**upper respiratory infection (URI):** a cold; infection above the lungs

**urinary tract infection (UTI):** infection of the bladder

## V

**ventilator:** machine used to breathe for the baby. Also call a respirator.

**ventricle:** chamber in the heart; also the name of a sack in the brain where spinal fluid is made and stored

## W

**wheeze:** whistling, humming, raspy sound made during breathing

## Y

**yeast infection (Candida albicans, monilia, thrush):** fungus that causes an infection. Common after antibiotic therapy. Seen most often in the mouth and diaper area. Treated with mycostatin oral suspension and mycostatin cream.









