



# Preventing Infections

Neonatal intensive care unit graduates have a higher rate of rehospitalization than the average newborn population. Common reasons for unexpected readmission are poor weight gain, feeding problems, dehydration, and upper respiratory infections. Healthcare providers should encourage parents to discuss with extended family and friends the precautions they should take to ensure the continued good health of their premature infant. Parents will need to ask for respect of their boundaries and support during preparation for discharge.

The best preventive measure is good handwashing. Everyone who interacts with the baby at home should learn about and practice good handwashing. Placing soap by all sinks and cleansers or hand gel in any rooms in which the baby may be cared for will help ensure good hand hygiene. You can use hand sanitizers to kill germs on hands when soap and water are not available, but keep them out of the reach of children and use as directed. Sanitizers containing high levels of alcohol can pose as a potential hazard. The American Academy of Pediatrics (AAP) recommends that parents use the same caution with hand sanitizer as with any other possibly poisonous item.

## Cleaning

The baby's room, including the changing table, needs to be cleaned thoroughly. It is important to remove dust and dirt but avoid the use of harsh smelling cleaning products. Harsh cleaning solutions and insecticidal sprays can leave residual odors that may irritate or even harm the baby. All cleaning items should be stored out of the reach of children.

## Sleeping

The baby should always be placed on his or her back for sleep. The National Institutes of Health (NIH) confirmed that studies demonstrate the benefits of infants sleeping on their backs. "Placing infants to sleep on their backs not only reduces their risk of Sudden Infant Death Syndrome, but also appears to reduce the risk for fever, stuffy nose, and ear infections" (NIH, 2003). Breastfeeding may reduce the risk of SIDS. See Safe Sleep for additional information on safe sleeping precautions.

## Contact with Others

The AAP Committee on Environmental Health has identified these problems associated with secondhand smoke exposure: decreased lung growth, decreased lung function, and increased frequency of lower respiratory tract infections and respiratory symptoms. Research also clearly shows that exposure to smoke can cause ear infections and related hearing problems, increased incidence of hospitalization related to bronchitis or pneumonia, and increased risk for sudden infant death syndrome.

The following precautions will reduce the possibility of exposure to illnesses, especially during the cold season:

- not allowing smoking in the home, including vapor e-cigarette use
- asking anyone who is ill or feels that they may become ill to postpone their visit
- teaching everyone to do proper handwashing prior to touching the baby
- limiting the frequency—and duration—of guest visits (outside family included)
- limiting initial contact with small children (other than those who already live in the house).

## RSV Prevention

*Respiratory syncytial virus* (RSV) is a very contagious virus spread easily through the air when a person coughs, sneezes, or touches an object that has the virus on it. In fact, the virus can live on countertops, doorknobs, hands, and clothing for up to 7 hours. Handwashing and proper cleaning is the best way to help prevent the spread of RSV. Synagis is a medication that can be administered to help prevent RSV. Depending on the severity of certain underlying illnesses and the presence of risk factors, the baby may benefit from a series of monthly injections during RSV season.

## Feeding

The AAP recommends exclusive breastfeeding for the first 6 months, followed by continued breastfeeding as complementary foods are introduced, with continuation of breastfeeding for 1 year or longer, as determined by



mother and infant. According to the AAP, “The risk of hospitalization for lower respiratory tract infections in the first year is reduced 72% if infants are breastfed exclusively for more than 4 months” (AAP, 2012). The severity of RSV infections and gastrointestinal infections also are greatly reduced in breastfed babies. See Breastfeeding Overview and Breastfeeding at Home for more information.

The AAP guidelines for storing breast milk are as follows:

- Wash hands before expressing or handling milk.
- Use only clean containers to store expressed milk. Use collection containers specific for the purpose of storing human milk. Do not use ordinary plastic bags or formula bottle bags for storing milk.
- Freshly expressed milk can remain at room temperature for up to 4 hours.
- Use refrigerated and not previously frozen milk within 48 hours.

Instruct the mother to label, date, and time the bottle of breast milk when it is expressed. Preferably, human milk should be refrigerated or chilled right after it is expressed. Acceptable guidelines for storing human milk are as follows:

- at room temperature for 4 hours (ideal) and up to 6 hours (acceptable)
- in a refrigerator for 48 hours (ideal)
- in a deep freezer for 6 months (ideal) and up to 12 months (acceptable).

Seal and chill breast milk for 4 hours, if possible, and discard breast milk that has been refrigerated for more than 72 hours. Milk can be kept in a freezer attached to a refrigerator for 1 month and for 3–6 months if kept in a zero-degree deep freezer. Milk can be thawed in the refrigerator or by swirling in a bowl of warm water (not shaken). Once thawed, milk must be used within 24 hours. Thawed milk should not be refrozen.

Be sure that the parents understand that heating milk in microwave ovens is not safe. Excess heat can destroy the important proteins and vitamins in the milk. If parents heat the milk in the storage container, they should

avoid rigid plastic bottles that have recycling plastic identification code 7 in the triangle to prevent exposure to bisphenol A (BPA), a potential hormone disrupter. For more information, visit [www.niehs.nih.gov/health/topics/agents/sya-bpa](http://www.niehs.nih.gov/health/topics/agents/sya-bpa).

If the parents will be using formula or supplementing, safe preparation is essential. Water used for mixing infant formula must be from a safe source. The local health department can help parents determine if tap water is safe to use for their baby’s bottles.

According to the U.S. Food and Drug Administration, “In most cases, it’s safe to mix formula using ordinary cold tap water that’s brought to a boil and then boiled for one minute and cooled” (U.S. Food and Drug Administration, 2013). Prior to discharge, teach parents how to follow mixing directions exactly, preparing the smallest quantity needed for a day. Allow parents to perform this skill and observe their technique well in advance of discharge. This is an important safety requirement, because underdiluted formula can lead to digestive problems, including dehydration. Overdiluted formula will not provide adequate nutrition or calories and can be dangerous. Too much water can disturb electrolyte balance and slow growth and development.

As with all food preparation, the area must be clean. Feedings should not be prepared near where parents change the baby’s diaper. Instruct parents to wash their hands before and after preparing milk or formula. There are several methods for cleaning nipples and bottles. Home sterilization kits are available or parents can wash bottles in the dishwasher.

The AAP recommends that once formula has been prepared and mixed, it must be consumed or stored in the refrigerator within 1 hour to prevent the growth of bacteria. Formula that has not been given to an infant can be stored in the refrigerator for up to 24 hours.

### Prevention of Diaper Rash

The first sign of diaper rash is usually redness or small bumps on the lower abdomen, buttocks, genitals, and



thigh folds—surfaces that have been in direct contact with the wet or soiled diaper. This type of diaper rash is rarely serious and usually clears up in 3 or 4 days with appropriate care. Diaper rash can be prevented by changing wet diapers, especially stool-soiled diapers, every 2–3 hours. The stool-soiled diaper can irritate the skin. The baby’s bottom can be cleansed with plain water and a soft cloth. Allow the area to air dry before applying an ointment barrier and a clean diaper. Because yeast thrives in wet places, yeast infections are common. If the baby is not responding to routine diaper care or the parent suspects he or she has a yeast infection, they should contact the baby’s provider for advice on over-the-counter or prescription medications that may help.

## References

- American Academy of Pediatrics. (2013). Breastfeeding and the use of human milk. *Pediatrics*, 115(2), 496.
- National Institutes of Health. (2003). Study confirms safety of placing infants to sleep on their backs: Infants who sleep on back have fewer fevers and ear infections. Retrieved from [www.nichd.nih.gov/news/releases/sleep\\_on\\_back.cfm](http://www.nichd.nih.gov/news/releases/sleep_on_back.cfm)

- U.S. Food and Drug Administration. (2013). FDA 101: Infant formula. Retrieved from [www.fda.gov/ForConsumers/ConsumerUpdates/ucm048694.htm](http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm048694.htm)

## Bibliography

- American Academy of Pediatrics. (n.d.). Breastfeeding initiatives. Retrieved from <https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Breastfeeding/Pages/default.aspx>
- American Academy of Pediatrics. (2010). Diaper rash. Patient education online. Retrieved from <http://patiented.aap.org/content.aspx?aid=5297>
- Healthy Children. (2013). Diaper rash. Retrieved from [www.healthychildren.org/English/ages-stages/baby/diapers-clothing/pages/Diaper-Rash.aspx](http://www.healthychildren.org/English/ages-stages/baby/diapers-clothing/pages/Diaper-Rash.aspx)
- La Leche League International. (2012). What are the LLLI guidelines for storing my pumped milk? Retrieved from <http://bchphysicians.org/wp-content/uploads/2014/04/Storing-BreastMilk.pdf>
- Pastore, R. (2010). Are you preparing your baby’s bottles correctly? AAP News. Retrieved from <http://aapnews.aapublications.org/content/31/10/37.5.full>



## Preventing Infections: Information for Parents

Babies born early have more risk of needing to return to the hospital due to problems with feeding, weight gain, or respiratory infections. There are things you can do to lower these risks. The most important thing to remember is to wash your hands. Teach everyone who touches your baby about good handwashing. Be sure to have soap or hand gel by all bathroom sinks. It's a good idea to have hand gel in any room in which you will take the baby. Keep hand gel in purses and diaper bags, too.

### Cleaning

Give the baby's room a good cleaning. Remove dust and dirt, but avoid the use of strong-smelling cleaners. Preterm babies don't like strong smells and because their lungs are still growing, those smells may be irritating. This is especially true for secondhand smoke.

### Sleeping

Your baby should always be placed on his or her back for sleep. Sleeping on the back lowers the risk of sudden infant death syndrome as well as fever, stuffy nose, and ear infection.

### Friends and Family

Do not let anyone who is sick or smokes near your baby. Ask anyone who is "coming down with something" to wait to visit. Limit the number of visitors and the length of time that guests stay. Secondhand smoke can harm your baby's lungs and increase your baby's chances of having respiratory infection, ear infection, and hearing problems. Don't take your baby to crowded areas (malls or church) until they have been home for several weeks. This is especially important during the winter months of respiratory syncytial virus (RSV) season (October through March).

### RSV Prevention

There are ways to protect your baby. RSV is a respiratory virus that spreads easily from coughing and sneezing. The virus can live on countertops, doorknobs, hands, and clothing for up to 7 hours. During RSV season, wash your hands frequently and avoid crowded places and school-age children. Speak with your pediatric provider about your day care plans, too.

There also is a medicine (Synagis) that can help lower your baby's risk of getting sick with RSV. Follow the appointment schedule given by your baby's provider.

### Other Notes

Breast milk is the best food for your baby for the first 6 months of life. Breast milk helps your baby's immune system fight respiratory and stomach infections.

You may see redness or small bumps on the parts of your baby's bottom that have been near the wet or dirty part of the diaper. A poopy diaper can bother the skin. Diaper rash isn't serious and usually heals in 3 or 4 days with care. You can prevent diaper rash by changing wet and dirty diapers every 2–3 hours.

Clean your baby's bottom with plain water and a soft cloth. Let the area air dry before putting on an ointment and a clean diaper. If the diaper rash doesn't get better in 3–4 days, call your baby's provider. Ask about diaper care ointments you can buy at the store. They may want to give your baby medications that can help clear up diaper rash.