



Skin Care

Promoting the neonate's skin integrity is a priority for the neonatal nurse. The preterm infant's skin is thinner than a full-term infant, making it more susceptible to problems. The neonatal nurse must therefore exercise caution when handling and cleansing the neonate's skin.

One of the most important steps nurses and visitors in the NICU can take is to wash their hands with antibacterial cleansers before making contact with the preterm infant (Gardner, Carter, Enzman-Hines, & Hernandez, 2011). This helps decrease the spread of all infections, especially methicillin-resistant *Staphylococcus aureus* (MRSA).

The nurse should perform a thorough skin assessment at least once a day and more frequently as needed to identify any skin breakdown and promote skin integrity. Consider using a valid and reliable assessment tool to provide an objective measurement of skin condition, such as Neonatal Skin Condition Score (NSCS), Braden Q Risk Assessment, Starkid Skin Scale, or Neonatal Skin Risk Assessment Scale (Association of Women's Health, Obstetric and Neonatal Nurses [AWHONN], 2013).

Bathing

Bathe infants according to facility protocols, such as sponge bathing, tub bathing, or swaddled bathing. The tub that is used for bathing the neonate should be disinfected before and after each use. When bathing an infant, create a neutral thermal environment so that the infant is less likely to lose heat. Precautions such as keeping the bath water temperature between 38 °C and 40 °C, keeping the room temperature warm, and using prewarmed towels can help prevent the infant from becoming hypothermic. The duration of the bath should be kept to a minimum to ensure that the infant stays physiologically stable (AWHONN, 2013).

For preterm infants younger than 32 weeks, gently cleanse skin surfaces with warm water only during the first week of life. Use soft materials and avoid rubbing the skin; instead, squeeze water onto the skin during

rinsing. Use warm sterile water when breakdown is evident (AWHONN, 2013). Skin cleansers with the least irritating formula should be chosen, and antimicrobial soaps should be avoided whenever possible. Infants should be bathed every few days or as needed. Shampooing once or twice a week usually is adequate.

Vernix

Residual vernix does not have to be removed after birth because it acts as a protective skin barrier and allows the infant to better adapt to the dry extrauterine environment. The World Health Organization recommends leaving vernix intact after the infant is initially dried following birth. Vernix helps to protect against infection; is a natural, water-containing barrier cream; helps with wound healing; and does not affect auxiliary temperature readings. Vernix should be left in place to naturally wear off with normal care (AWHONN, 2013). Scrubbing vernix after delivery may cause skin breakdown because it could damage the fragile epidermis of the neonate.

Cord Care

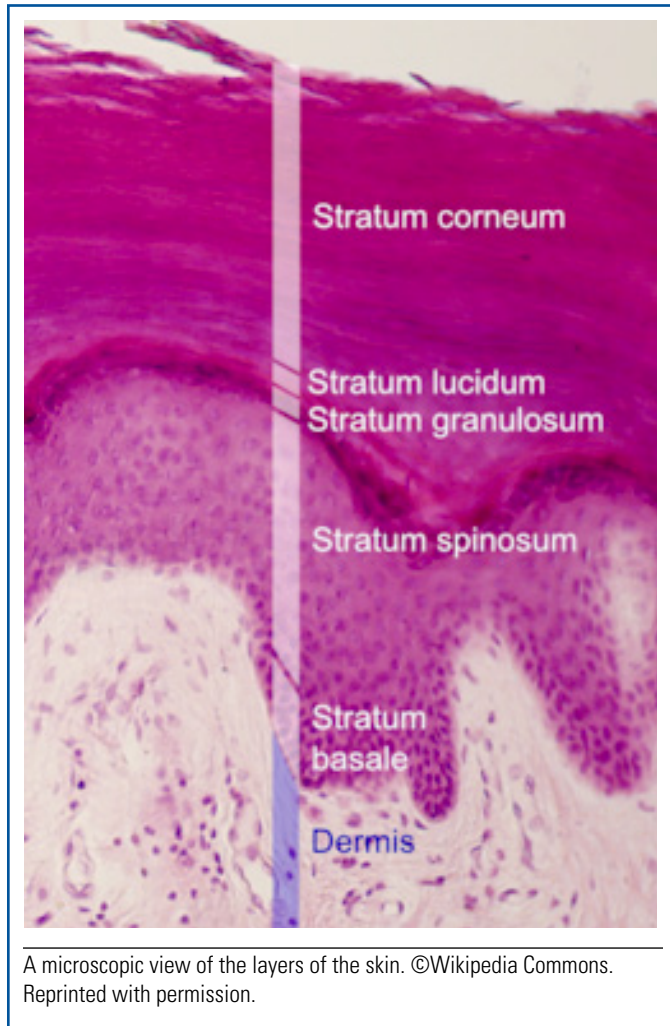
After birth, the neonate's umbilical cord should be cleansed with tap water to remove debris and thoroughly dried as part of the first bath. The routine use of antimicrobial sprays, creams, or powders on the umbilical stump has not been shown to be more effective in preventing infection than allowing the cord to dry naturally (Gardner et al., 2011). If the cord becomes soiled, it can be cleaned with water and dried with absorbent gauze to remove excess water. The diaper should be folded down and away from the umbilical stump to keep the stump clean and dry. Current evidence shows that cord separation time is shorter with dry cord care than by applying isopropyl alcohol to the cord daily. Research also shows that triple dye on the umbilical stump had the longest separation time compared with dry cord care and alcohol cord care (AWHONN, 2013).

Emollients

Emollients help protect the integrity of the neonate's skin by keeping it hydrated and should be used at the first sign



of dryness. The emollient should be applied gently to the skin to prevent skin irritation and breakdown (AWHONN, 2013). The container should be kept away from contamination and ideally should be provided in unit dose or patient-specific containers.



Transepidermal Water Loss (TEWL)

Because preterm infants have a smaller stratum corneum, which controls evaporative heat loss, they are more likely to develop transepidermal water loss (TEWL; Gardner et al., 2011). Current American Academy of Pediatrics (AAP) Neonatal Resuscitation Program guidelines recommend increasing the temperature in the room the baby will receive care to approximately 23 °C to 25 °C (74 °F to 77 °F), preheating the radiant warmer, placing a hat on baby's head, and for babies born at less than 32 weeks gestation:

- placing a portable thermal mattress under a blanket on the radiant warmer
- wrapping the baby in a polyethylene plastic wrap or bag up to their neck. Drying the body is not necessary (AAP, 2016).

Monitor the baby's temperature frequently to maintain an axillary temperature between 36.5 °C and 37.5 °C. TEWL in extremely-low-birth-weight infants at 23–26 weeks of gestation is reduced by half when the relative humidity is increased from 20% to 60%. High humidity has been shown to reduce fluid requirements and improve electrolyte balance in preterm infants when compared with historical control groups.

Provide humidity at levels of more than 70% relative humidity for the first 7 days of life. After the first week of life, gradually decrease relative humidity to 50% until the infant is 28 days old. Consider continuing 50% humidity until 30–32 weeks postconceptual age (AWHONN, 2013).

Skin Disinfection

Decontamination of the infant's skin before invasive procedures is a common practice in the NICU. According to AWHONN's *Neonatal Skin Care Evidence-Based Practice Guideline*, 3rd edition, the U.S. Food and Drug Administration has issued a labeling change to manufacturers of skin antiseptics containing chlorohexidine gluconate (CHG). The new label warns that CHG-containing skin antiseptics should be used with caution in premature infants or infants less than 2 months of age, as these products may cause chemical burns. At the same time, case reports of CHG/alcohol skin disinfectants and dressing causing skin injuries are becoming more frequent; therefore, the selection of skin disinfectants for extremely preterm infants remains a dilemma for clinicians (AWHONN, 2013).

AWHONN (2013) suggests considering the potential for systemic toxicity if skin disinfectants are absorbed through the skin and suggests wiping off all skin disinfectants after use with sterile water or saline as quickly as possible after the procedure is complete.

No disinfectant agent comes without risks, but it is important that the nurse understands the possible risks



and uses the most current evidence to guide his or her nursing practice.

Adhesives

When adhesives are removed, they can alter skin barrier function by stripping the epidermis and causing skin breakdown (AWHONN, 2013). Nurses should select medical adhesives that cause the least trauma while effectively securing medical devices with one of the many choices available. Silicone-based skin barrier films should be used to protect the skin from medical adhesives; they do not sting when applied, rapidly evaporate, and do not leave a residue (AWHONN, 2013). Medical adhesives should be removed slowly using moistened gauze or saline wipes. AWHONN (2013) suggests avoiding the following products whenever possible: alcohol/organic-based products, oil-based solvents, enhancing bonding agents, and adhesive bandages after drawing laboratory samples.

Penile Care

With an uncircumcised penis, the foreskin should not be forcibly retracted; doing so can cause tearing, which can lead to adhesions (AWHONN, 2013). After a circumcision has been performed, the nurse should closely inspect the skin and remove any skin disinfectant still present with sterile water or saline. Following the circumcision, the penis should be covered with petroleum gauze for at least 72 hours to promote healing. With a circumcision that involves a plastic device, petroleum use should be determined by the provider doing the procedure. Some believe it should not be used because it may cause the device to move out of place; others will suggest the use of petroleum to prevent adhesions. Once the plastic device falls off, place petroleum jelly over the tip for up to 2 weeks. This will keep the foreskin lubricated while healing. The newly circumcised penis should be cleansed with only water for the first 3–4 days because soaps can be more irritating to the skin.

Diaper Dermatitis

Diaper rash can occur after 1–3 weeks of life and can be caused by prolonged contact of the skin with urine and

feces. To care for a diaper rash, use soft cloths and water or disposable diaper wipes that have no added detergents or alcohol (AWHONN, 2013). Breastfeeding also decreases the chances of diaper rash because breastfed infants have stools that are less caustic to their skin than formula-fed infants. Using petroleum-based lubricants or skin barriers containing zinc oxide at every diaper change for infants at risk for developing dermatitis can help decrease diaper dermatitis (AWHONN, 2013). Keep in mind that vigorous rubbing to remove traces of these barriers should be avoided because doing so can cause more damage to the skin. Diaper dermatitis can be complicated by a fungal infection and should be treated accordingly with antifungal ointments or creams. The use of powders should be avoided due to the risk of promoting bacterial and yeast growth (AWHONN, 2013). Most important for preventing diaper dermatitis is keeping the skin dry and maintaining a normal skin pH. Diaper changes every 1–3 hours during the day and at least once at night are necessary to maintain skin integrity.

Skin Excoriations

Specific measures that can minimize the risk of skin breakdown include using devices (such as gelled mattresses and pads) to help prevent pressure sores, applying transparent dressings over bony prominences (knees and elbows), and applying petroleum ointments to the groin and thigh of very-low-birth-weight infants (AWHONN, 2013). Skin excoriations can be cleansed with warmed sterile water or saline to gently debride the wound, and moistening helps with the healing process.

References

- American Academy of Pediatrics (AAP). (2016). *Textbook of Neonatal Resuscitation* (7th Edition). Elk Grove Village, IL: American Academy of Pediatrics.
- Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN). (2013). *Neonatal skin care: Evidence-based clinical practice guideline* (3rd Edition). Washington, DC: AWHONN.
- Gardner, S. L., Carter, B. S., Enzman-Hines, M., & Hernandez, J. A. (2011). *Merenstein and Gardner's handbook of neonatal intensive care* (7th ed.). St. Louis, MO: Mosby Elsevier.



Skin Care: Information for Parents

Your baby's nurses will look at your baby's skin to make sure it is not broken or red. Your baby has very fragile skin that has to be touched gently. As your baby gets older, his or her skin will not be as fragile. Talk with your baby's nurses about ways to protect your baby's skin while moving him or her.

Remember to always wash your hands with soap and water for at least 15 seconds before touching your baby. You should scrub your hands very well while washing them and clean underneath your fingernails. Also, clean between each of your fingers and the top of your hands. You also should wash your hands after changing your baby's diaper and before you make your baby's bottle. Washing your hands will help prevent your baby from getting an infection. Others caring for your baby will need to do this, too.

Your baby's nurses will tell you about the different things that they will do to or use on your baby's skin. The nurses will show you how to help take care of your baby's skin until you go home.

Bathing

You may see your baby's nurses clean the bathtub before and after a bath. This is done to help prevent infection. The soap used on your baby should be fragrance-free to help protect his or her skin. You may find that your baby's nurses use only water when giving your baby a bath. This is because your baby was born early, and soap is not needed right now. Later on, your baby will get a bath with soap. You do not need to give your baby a bath more than once every few days. By not bathing your baby every day, you are helping to keep his or her fragile skin safe and not dried out.

Vernix

Your baby may have a white, cheesy covering on his or her skin called vernix. This is normal and is a natural covering to keep your baby's skin moist and free from infection. Scrubbing this covering off can hurt your baby's

fragile skin. Instead, the covering is left in place until it comes off by itself.

Cord Care

After your baby is born, the umbilical cord is clamped and cut, leaving a stump. If it becomes dirty, this stump can be cleaned with water and dried well. It is not necessary to use alcohol wipes to clean the cord. The best way to keep your baby's cord free from infection is to make sure that it does not get dirty from your baby's diaper. You should fold the front of your baby's diaper down when changing him or her to make sure the stump does not get wet. You should look at the cord daily to make sure it is not red or hot or has any drainage. These are signs of infection, and you should tell your baby's provider or nurses if you see them.

Cream to Protect Your Baby's Skin

The nurses may put a clear cream on your baby's skin, which will help keep it from becoming too dry. When your baby's skin is too dry, it can crack more easily. Talk with your baby's nurse or medical provider about creams or lotions that can be used on your baby's skin. If you apply the clear cream to your baby's skin, make sure the container does not get dirty because this can raise the risk of a skin infection.

Water Loss

Your baby's skin is very thin and fragile. Because of this, your baby's skin can dry out very easily. Depending on how early your baby was born, he or she may have been wrapped in a plastic bag from the shoulders down right after being born. This helps keep the baby warm and his or her skin moist. Remember that your baby can get cold very easily. The plastic bag also will help prevent that. Your baby also might have been placed into an *isolette*, which is a special "house" that keeps your baby warm and lets the nurses keep track of your baby's temperature. Sometimes when your baby is in the *isolette*, the nurses will keep the air humid inside of it, which helps keep your baby warm and his or her skin moist.



Keeping Your Baby Free from Infection

Your baby may need to have his or her skin cleaned with a special cleansing product before certain procedures are performed. This helps protect your baby from an infection. Feel free to ask any questions about the special cleansing products or the procedures being performed.

Tape

Since your baby has very fragile skin, you may see your baby's nurses use different kinds of tape on your baby. The nurses may put a protective piece of tape on your baby's skin and then put another kind of tape on top of that. This helps keep your baby's skin intact. When the nurses remove the tape, they will do it slowly and may use water to keep your baby's skin from breaking.

Your baby's nurses also may leave the tape in place even though your baby may not need it anymore. This is because the nurses are waiting for the tape to come off by itself. This will help keep your baby's fragile skin intact and protect your baby from getting an infection.

For Baby Boys

You may or may not decide to have your baby boy circumcised. This procedure is used to remove skin toward the tip of the penis. Caring for your son differs based on whether or not you choose to have your son circumcised. For a natural penis, you should not pull the skin down to clean around your baby's penis. This can cause your baby's skin to tear. Instead, leave the skin in place and gently clean around the penis if needed.

For circumcised boys, the tip of the penis may seem raw or yellowish. When gauze is used, it should be changed

with each new diaper to reduce the risk of infection. Use petroleum jelly to keep the gauze from sticking to the diaper. Sometimes a plastic ring is used for circumcision. This should drop off within 5–8 days. It may be recommended that you use petroleum jelly on the tip of the penis with either procedure to keep the foreskin lubricated; be sure to follow the instructions from the hospital. The penis should be fully healed about 7–10 days after circumcision.

Diaper Rash

Diaper rash is when your baby has redness and irritation around his or her buttocks. To prevent a diaper rash, frequently change your baby's diaper, especially after they poop. To care for a diaper rash, clean the area with soft cloths and water. You also can clean the area with diaper wipes that are chemical-free. Your baby also may have a special cream that should be applied each time the diaper is changed. Sometimes, your nurses will tell you not to wipe off all of the cream, but to only gently wipe around the buttocks. This will keep your baby's skin intact and allow it to heal.

Other Skin Information

Depending on how early your baby was born, you may see your baby's nurses use special products to keep your baby's skin from tearing, including placing special pads underneath your baby or placing clear coverings on your baby's knees or elbows. Ask your baby's nurses about ways you can help keep your baby's skin from tearing.