

TEMPERATURE CONTROL IN THE LATE PRETERM INFANT

Late preterm babies can have difficulty maintaining a normal temperature and may become cold. While babies are in the hospital, they will have their temperatures checked regularly soon after they are born and throughout their hospital stay. It is important for families to be aware of an infant's environment and how it might affect their baby's temperature. Some late preterm babies may need to stay in the hospital for additional days until they can regulate their own temperature. In this chapter, we will review the normal temperature of a baby, reasons why a baby may become cold, and methods to keep a baby warm in the hospital and at home.

Normal Temperature

The normal temperature of a late preterm infant is the same as a full-term infant. If a baby's temperature is taken under the arm (known as an *axillary temperature*), the normal range is 97.7°F – 99.4°F (36.5°C – 37.4°C). If a baby's temperature is taken rectally, the normal range is 98.1°F – 99.9°F (36.7°C – 37.7°C). To make sure that a baby's temperature is normal after birth, the hospital will check a baby's temperature on a regular basis in the Newborn Nursery, SCN, and in the NICU.

Normal Temperature of a Baby

97.7°F – 99.4°F (36.5°C – 37.4°C) axillary (under the arm)

98.1°F – 99.9°F (36.7°C – 37.7°C) rectally

Causes of Abnormal Temperature

Late preterm infants are at risk of having a low temperature because they often have less fat on their body, making it more difficult for them to stay warm. Preterm infants may also become cold because their bodies are immature and are not yet ready to maintain a normal temperature all the time. Their bodies may lose heat in many ways, such as:

- During or after a bath,
- If a baby lies on a cool surface,
- If there is a breeze, such as from an air conditioner or through a window, or
- If a baby is undressed.

Babies who are small for their age (see Growth Restriction Chapter) need more frequent monitoring of their temperature and often need more help to stay warm. This is also true for infants who have an infection or need extra assistance with breathing. Babies who are wearing only a diaper while being treated with phototherapy for jaundice (see Jaundice Chapter) may need extra support to stay warm during the treatment.

If an infant has a temperature above the normal range, an evaluation may be warranted. Babies may have a high temperature if they are overbundled. Elevated temperatures can also occur if babies are dehydrated or have an infection.

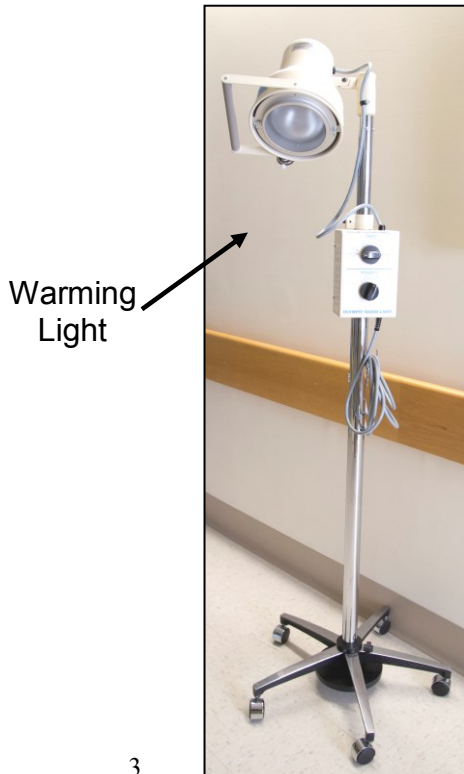
Temperature Support in the Hospital

After a baby is born, hospital staff will dry the baby to remove amniotic fluid and place the baby on the mother's warm skin or under a warmer. Because babies lose heat easily through their

scalp, a hat is placed on an infant soon after birth. When an infant is ready to be swaddled, the baby is wrapped in one or two blankets. A hospital nurse will monitor an infant's temperature soon after birth.

There are several ways to help an infant stay warm. *Skin-to-skin holding* means placing a baby directly onto a parent's bare chest. In this position, a baby may wear only a diaper and a hat and be covered with a blanket or the parent's clothing. Often, the parents' body heat will be able to keep the baby warm.

If an infant needs extra support to stay warm, a *warming light* may be used during skin-to-skin holding or while a baby is in a crib. These lights are positioned over a baby to provide extra heat.



If a baby is unable to maintain a normal temperature with the use of warming lights, the baby can be placed under a *radiant warmer* or in an *incubator*.

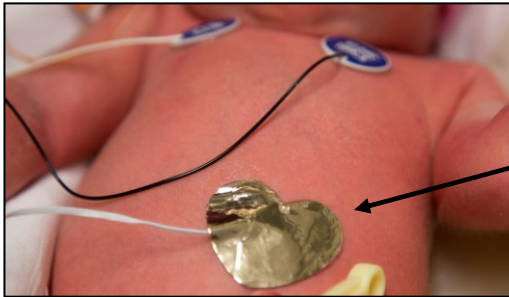
Radiant Warmer



Incubator



If a radiant warmer is used, a baby is placed on a mattress with a heater positioned several feet above the baby. A *temperature sensor* or probe is placed on the baby's skin. This probe is connected to the radiant warmer so that the appropriate amount of continuous heat is provided to the baby.



Temperature
Sensor or Probe

If a baby is cold, the radiant warmer will provide extra heat. As the baby warms up, the radiant warmer provides less heat. The radiant warmer makes it easy for hospital staff to observe and provide care to a baby while the baby stays warm.

An incubator may also be used to provide extra heat to babies. This transparent, plastic covered crib is heated. Similar to the radiant warmer, a temperature sensor is used to monitor a baby's temperature so that extra heat is provided when a baby needs it.

Some babies may need to stay in the hospital until they can stay warm without extra help from warming lights, a radiant warmer, or an incubator. Typically, infants weighing less than 4 pounds (or less than 1800 grams) require extra temperature support. Babies need to have a normal temperature in an open crib for a period of time to show readiness for discharge to home.

Home Assessment of Temperature

With growth and maturity, late preterm infants will eventually be able to stay warm without extra support and will be discharged home. However, parents must continue to be aware of their infant's environment so that their baby continues to stay warm. Parents must pay attention to maintaining a comfortable home temperature for themselves and their baby. Infants should be dressed in the same manner as adults, with one additional layer, such as an extra piece of clothing. It is important not to keep the home environment too warm or overdress an infant because babies can also become overheated.

Once babies are discharged home, parents do not need to check their baby's temperature regularly with a thermometer. However, if a baby's skin feels unusually cool or warm, a parent should check the baby's temperature. An infant's temperature should also be checked if a family member suspects that an infant is not well, such as if the infant has:

- Poor feeding,
- Unusual irritability, or
- Decreased activity.

For any of these conditions, the family should also contact the baby's pediatric care provider. Generally, care providers want to be notified if an infant's axillary temperature is over 100°F (37.8°C) or if it is under 98°F (36.6°C). Your pediatric care provider may provide more specific instructions about when to contact the doctor's office.

Conclusion

Late preterm infants may require additional support to keep warm. For some infants, this extra support may consist of a hat and additional clothing. However, other infants may require support from warming lights, a radiant warmer, or an incubator for several hours, days or weeks after birth. While it is difficult for parents to have their baby remain in the hospital, these temperature concerns are actually quite common in late preterm infants. The hospital team will follow the baby's temperature to determine when he or she is mature and ready to go home.