



# Example of Recommended Guidelines for Thermoregulation in Preterm Infants < 35 weeks of Gestation



## Background

- Premature infants are at risk for both hypo- and hyperthermia after delivery.
- An admission temperature of 36° to 36.4°C is considered cold stress.
- An admission temperature of <36°C is hypothermia and >37.5°C is hyperthermia.
- Euthermia can be achieved by establishing policies and procedures prior to and immediately after birth.

## Temperature Goal: 36-37.5°C (96.8-99.5°F)

### Suggested Guidelines for the Management of Temperature by Phase of Care

**Prior to Delivery**

- » Have a dedicated resuscitation team with complete NRP training to attend all preterm deliveries
- » Collaborate with OB and hospital environmental engineering to maintain ambient temperature in the delivery/operating room at least 23°C (74°F)
- » Have available equipment and supplies for all preterm births, including occlusive wrap/bag, hat, thermometer, overhead warmer with servo-controlled temperature probe, incubator and exothermic mattress

**At Delivery**

**For infants <32 weeks gestational age or <1500 grams:**

- » Place infant on pre-warmed radiant warmer bed
- » Immediately place in polyethylene bag without first drying the skin, apply hat (fabric or occlusive) and use exothermic warming mattress
- » Record temperature every five minutes during all neonatal resuscitations
  - › If temperature is greater than 37.3°C confirm radiant warmer is set to servo mode and consider removing exothermic warming mattress to avoid hyperthermia.
- » Place temperature probe in servo mode on radiant warmer
- » Use transport incubator to move infant from delivery room to admission area
- » Avoid umbilical lines in the delivery room unless needed for resuscitation

**For infants 32-35 weeks' gestational age or >1500 grams:**

- » Dry skin rapidly with pre-warmed, absorbent blanket, apply hat and use a warm blanket-covered heating mattress
- » For extended resuscitations, consider using the exothermic blanket

**Admission Area or NICU**

- » Have pre-warmed incubator for all deliveries
- » Continue to use occlusive bag and exothermic mattress on radiant warmer for procedures
- » Monitor axillary temperature every five minutes
- » Preferentially use servo over manual mode
- » Initially set temperature 36.5°C. Do not set servo temperature higher than 37°C

# Normal Temperature Range

## 36–37.5°C (96.8–99.5°F)

This is a guideline and there are exceptions to every rule. If you feel it is necessary to go outside of this guideline, please speak to the physician/APP.

### Guidelines for Incubator Management After Birth

#### Servo-Control

**GA:** < 30 weeks  
**Weight:** < 1000 g  
**Dress:** Diaper only

Place temperature probe midline in the upper abdomen, not over the liver or bony areas. Do not lay the infant on the probe.

#### Air Control

**GA:** 30–34 weeks  
**Weight:** 1000–1600 g  
**Dress:** One layer and hat

Wean to air control by comparing infant and air temperatures, checking the infant’s temperature hourly and adjusting air temperature no more than 1°C/hour to maintain Euthermia

#### Open Crib

**GA:** > 34 weeks  
**Weight:** > 1600 g  
**Dress:** One to two layers of clothes, hat

Can wean to open crib when clinically stable, maintains body temperature in 28°C environment for 48 hours, and continues to gain adequate weight for five days

Continue to monitor temperature and ensure weight gain

Return to incubator if fails to maintain temperature and appropriate weight gain

- » Use Air Boost Curtain when opening incubator to prevent temperature fluctuations
- » For prolonged interventions, raise the hood of the incubator and leave side walls up with overhead heater in use

#### Minimum documentation should include:

- » Vital signs including temperature
- » Bed environment being used: radiant warmer, servo control, air control, or open crib
- » Control servo or air control, ambient and temperature probe readings
- » Humidity setting
- » Interventions performed for abnormal temperature and the response to the interventions

### Guidelines for Humidity Management After Birth

#### 22<sup>0</sup>–24<sup>6</sup> Weeks Gestation

1. Set ambient humidity to 80% for the first 7 days
2. Then wean humidity to 70% for the next 7 days
3. Then wean humidity by 10% each day until 40%
4. Maintain 40% humidity for 24 hours
5. Then discontinue humidity

#### 25<sup>0</sup>–28<sup>6</sup> Weeks Gestation

1. Set ambient humidity to 70% for the first 7 days
2. Then wean humidity by 10% each day until 40%
3. Maintain 40% humidity for 24 hours
4. Then discontinue humidity