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

<table>
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<th>Prior to Delivery</th>
<th>At Delivery</th>
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| » 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 |
| | » 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 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.

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
**Guidelines for Humidity 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 Incubator Management After Birth**

**22⁰–24⁶ 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

**25⁰–28⁶ 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

For references please visit [https://www.tchmb.org/s/NAT-guide-under35w.pdf](https://www.tchmb.org/s/NAT-guide-under35w.pdf)

**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.