HYPOTHERMIA ● 1/2

Heated pads (Transwarmer® should not be used if another heat source (incubator heater, radiant heater, heated mattress etc.) is already in use

DEFINITION

- Axillary temperature <36.0°C

ASSESSMENT

Babies at risk

- Preterm <30 weeks' gestation
- Low-birth-weight
- Sick baby
- Small for dates

Consequences (<36.0°C)

- Hypoglycaemia
- Metabolic acidosis
- Hypoxia with increased oxygen demands
- Increased metabolic rate
- Clotting disorders
- Shock
- Apnoea
- Intraventricular haemorrhage
- Persistent pulmonary hypertension
- Decreased surfactant production and function

Causes of heat loss

- Radiation: heat lost to cooler objects in the room
  - in cold environment, whether in incubator or not, excessive heat may be lost
  - in excessively hot environment or in direct sunlight, baby could overheat in incubator
- Conduction: heat lost to cooler surfaces on which baby is placed
- Convection: heat lost due to drafts
- Evaporation: heat lost through water evaporating from skin

PREVENTION

Delivery suite

- Keep room 23–28°C and free from draughts, especially when babies are due to be delivered
  - aim for room temperature on the higher side for all premature infants (particularly IUGR)
- Pre-warm resuscitaire and towel

Babies <32 weeks

- Place baby on resuscitaire, dry head only
  - place baby's body in plastic bag
  - place hat on baby's head
- Take temperature before moving baby to NNU
- Transfer to NNU with suitable thermal support

Other babies

- Use pre-warmed towel, dry immediately after delivery
- Discard towel and wrap in another pre-warmed towel and blanket
- Ensure room warm enough to enable skin-to-skin contact and early breastfeeding
- Cover exposed skin with warm blanket
- Avoid giving bath immediately after birth

Neonatal unit

- Keep at 24–25°C to avoid cooling from radiant heat loss, and 'misting' (condensation) in incubators
- Keep incubators and cots away from windows to prevent radiation heat loss
- Nurse babies requiring intensive care in pre-warmed incubator
- For very premature babies, use humidification

HYPOTHERMIA ● 2/2

Incubator temperature during first 3 days

Birth weight (g)	Incubator temperature (˚C)
1000	35
1500	34
2000	33.5
2500	33.2
3000	33
4000	32.5

- Babies <1000 g may require even higher temperatures, occasionally >37°C
- If baby's temperature remains within normal limits for 24 hr, reduce incubator temperature according to baby's needs
- When baby's weight reaches approximately 1600 g, transfer to open cot

Rainout may occur if the difference between temperature in incubator and room temperature is >5°C: ensure room temperature kept at locally agreed level

Babies not at risk of hypothermia

- If not requiring observation of respiratory status or excessive invasive procedures, babies may be:
- dressed
- kept wrapped
- placed in a cot

- Mild hypothermia can be managed with the addition of:
- hats
- cot lids (if available)
- heated mattresses
- If baby's temperature <36.0°C consider:
- use of incubator, if available
- increasing humidity, if appropriate for gestational age
- bubble wrap
- skin-to-skin
- Recheck temperature in 1 hr
- Baby to be reviewed by medical team

REWARMING OF HYPOTHERMIC BABIES

- Rewarm in incubator
- ≥1200 g, rewarm at 1°C/hr
- <1200 g, rewarm more slowly

Take care not to overheat babies. Aim for 36.5–37.5°C