

QUICK REFERENCE: HIE INDICATORS & COOLING PROTOCOL

Common Perinatal and Intrapartum Causes:

- Nuchal Cord
- Uterine Rupture
- Meconium Aspiration Syndrome (MAS)
- Placental Abruption
- Cord Prolapse or True Knots
- Shoulder Dystocia

Top Indicators of Possible HIE at Birth

- **Low Apgar Scores:** <5 at 5 minutes and/or 10 minutes
- **Cord Gas Abnormalities:**
 - pH < 7.00
 - Base deficit ≥ 12 mmol/L
- **Need for Resuscitation >10 minutes**
- **Depressed Neurologic Status:**
 - Hypotonia
 - Altered consciousness (lethargy, stupor, coma)
 - Poor suck/gag reflex
 - Weak or absent cry
- **Seizures within first hours of life**
- **Abnormal EEG or aEEG tracing**

Nursing Reminder:

Cooling doesn't reverse damage — it slows **secondary injury progression** and allows the brain to recover. Early recognition and timely intervention are crucial.

Criteria for Therapeutic Hypothermia

(Generally followed for infants ≥ 36 weeks and >1800 g)

✓ **Gestational Age:** ≥ 36 weeks

✓ **Birth Weight:** >1800 grams

✓ **Age:** <6 hours old at evaluation

✓ **Apgar Score:** <5 at 5 minutes

✓ **Cord/First Gas:**

- pH <7.0
- Base deficit ≥ 12

✓ **Neurologic Exam Shows Moderate to Severe Encephalopathy**

(Sarnat staging: altered consciousness, hypotonia, absent reflexes, seizures)

✓ **No major anomalies or contraindications to cooling**

Cooling Protocol

- **Target Temp:** 33.5°C ($\pm 0.5^{\circ}\text{C}$)
- **Duration:** 72 hours of cooling
- **Rewarming:** Slow, $\sim 0.5^{\circ}\text{C}$ per hour to normothermia ($36.5\text{--}37^{\circ}\text{C}$)

During Cooling, Monitor Closely For:

- Core vs. skin temp discrepancies
- Seizure activity (EEG/aEEG)
- Hypotension/bradycardia (expected)
- Coagulopathy and labs (PT/PTT, glucose, Ca, K+)
- Skin integrity (cooling blanket contact)
- Electrolyte shifts & fluid balance



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