Checklist for therapeutic hypothermia

If baby has a perinatal event and/or acidosis and meets the criteria below, therapeutic hypothermia may be indicated.

Call Retrieval Services Queensland immediately on 1300 799 127 to discuss the need for transfer and therapeutic hypothermia with a neonatologist.

Therapeutic hypothermia criteria

- Evidence of acidosis or depression at birth, as indicated by at least one of the following:
  - Apgar score ≤ 5 at 10 minutes
  - pH < 7.00 or a base excess equal to or worse than minus 12 mmol/L on a cord/arterial/venous/capillary blood gas obtained within 60 minutes of birth
  - Mechanical ventilation or ongoing resuscitation for ≥ 10 minutes

AND either of:

- Evidence of moderate or severe encephalopathy at any time from 1–6 hours of age (use modified Sarnat assessment)
  OR:

- Seizures (witnessed by medical officer/nurse/midwife or as seen on aEEG/EEG)

AND

- No absolute contraindications to therapeutic hypothermia:
  - Uncontrolled critical bleeding
  - Uncontrolled hypoxia due to persistent pulmonary hypertension
  - Imminent withdrawal of life support planned

AND

- Meets the following criteria:
  - ≥ 35 weeks
  - Birth weight ≥ 1800 grams
  - Able to begin cooling before 6 hours of age
  - Assessment of relative contraindications (e.g. uncontrolled pulmonary hypertension, critical bleeding or coagulopathy, major congenital abnormalities)
  - Not moribund and with plans for full care


Abbreviations: ≥: greater than or equal to; <: less than; ≤: less than or equal to; aEEG: amplitude integrated electroencephalograph; EEG: Electroencephalograph

Assessment of encephalopathy severity

Assess baby’s signs against each criterion and record the encephalopathy severity as normal (N), mild (mild), moderate (mod) or severe (s) each hour during the first 6 hours of life. If criterion is not assessable record as not applicable (N/A).

### Modified Sarnat Criteria

<table>
<thead>
<tr>
<th>Assessment Criteria</th>
<th>Encephalopathy severity</th>
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<tbody>
<tr>
<td></td>
<td>Record severity each hour</td>
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<tr>
<td></td>
<td>Normal (N)</td>
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<tr>
<td></td>
<td>Mild (Mild)</td>
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<td>Moderate (Mod)</td>
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<td>Severe (S)</td>
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<table>
<thead>
<tr>
<th>Hours from birth</th>
<th>1h</th>
<th>2h</th>
<th>3h</th>
<th>4h</th>
<th>5h</th>
<th>6h</th>
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**Level of consciousness**
- Alert/arouses appropriately
- Hyperalert
- Lethargic
- Stupor or coma

**Spontaneous activity**
- Normal
- Normal or increased
- Decreased activity
- No activity

**Posture**
- Normal
- Normal
- Distal flexion, complete extension
- Decerebrate

**Tone***
- Normal
- Normal or increased in trunk and extremities
- Hypotonia (focal or general)
- Flaccid

**Suck reflex**
- Normal
- Normal or incomplete suck
- Weak suck
- Absent

**Moro reflex**
- Strong
- Strong, low threshold
- Incomplete Moro
- Absent

**Autonomic system**
- Pupils equal and reacting to light; normal heart rate and respirations
- Pupils equal and reacting to light; normal heart rate and respirations
- Pupils constricted; bradycardia or periodic/irregular breathing
- Pupils deviated/dilated/non-reactive; variable heart rate or apnoea

*Assess tone in both limbs and trunk/neck. Presence of hypotonia in either meets the criteria.