**Time = Brain**

**NICHD Scoring for HIE.** In line with NICE guidance, we aim to reach target temperature in babies with moderate to severe HIE within 6 hours of birth / collapse

**Babies at particular risk of HIE:**
- Apgar score ≤5 or ongoing resuscitation / requiring ventilation ≥ 10 minutes after birth
- Severe acidosis (pH<7.1 or BE ≤-12 mmol/l) ≤ 60 min of birth / postnatal collapse
- Abnormal clinical examination *
- Abnormal CFM **

**NICHD Scoring – 6 categories with 9 clinical aspects, each aspect has 4 domains (normal, mild, moderate, severe)**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Domains</th>
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<tbody>
<tr>
<td>1. Level of Consciousness</td>
<td>Alert, responsive to stimuli</td>
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<tr>
<td></td>
<td>Hyperalert, staring, jittery, high pitched cry, exaggerated response to minimal stimuli, inconsolable</td>
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<tr>
<td></td>
<td>Lethargy</td>
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<td>Stupor/ comatose</td>
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<td>2. Spontaneous Activity</td>
<td>Normal</td>
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<tr>
<td></td>
<td>Decreased, with or without periods of excessive activity</td>
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<tr>
<td></td>
<td>Decreased activity</td>
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<td></td>
<td>No activity</td>
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<tr>
<td>3. Posture</td>
<td>Mainly flexed when quiet</td>
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<td></td>
<td>May be mild flexion of fingers, wrists</td>
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<tr>
<td></td>
<td>Strong distal flexion, complete extension</td>
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<td></td>
<td>Intermittent decerebration</td>
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<td>4. Tone</td>
<td>Strong flexor tone in all extremities</td>
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<td></td>
<td>Slightly increased peripheral tone</td>
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<td></td>
<td>Hypotonia or hypertonia</td>
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<td></td>
<td>Flaccid or rigid</td>
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<td>5. Reflexes</td>
<td>Suck</td>
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<td></td>
<td>Strong, easy to elicit</td>
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<td></td>
<td>Weak, poor</td>
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<td></td>
<td>Weak or biting</td>
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<tr>
<td></td>
<td>Absent</td>
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<td></td>
<td>Moro</td>
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<tr>
<td></td>
<td>Normal</td>
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<tr>
<td></td>
<td>Partial, low threshold to elicit</td>
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<td></td>
<td>Incomplete</td>
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<td></td>
<td>Absent</td>
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<tr>
<td>6. Autonomic</td>
<td>Pupils</td>
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<tr>
<td></td>
<td>Normal</td>
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<tr>
<td></td>
<td>Dilated</td>
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<tr>
<td></td>
<td>Constricted, may be unequal</td>
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<tr>
<td></td>
<td>Deviated, skewed, non-reactive, dilated</td>
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<tr>
<td></td>
<td>Pulse</td>
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<tr>
<td></td>
<td>Normal</td>
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<tr>
<td></td>
<td>Tachycardia &gt;160/min</td>
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<td></td>
<td>Bradycardia &lt;100/min</td>
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<tr>
<td></td>
<td>Variable</td>
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<tr>
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<td>Resps</td>
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<tr>
<td></td>
<td>Normal</td>
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<tr>
<td></td>
<td>Hyperventilation &gt;60/min</td>
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<td>Periodic</td>
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<td>Apnoea / ventilated ± spont breaths</td>
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</table>

**How to use NICHD scoring to establish correct grade of HIE**

Evaluate all 9 aspects clinically
Choose worst domain in each of the 6 categories
If two or more domains score (for any grade of HIE) then has at least mild HIE
If ≥3/6 categories are moderate or severe then start cooling.
Diagnose moderate / severe as per majority of categories. If equal number then Category 1 (LoC) dictates grade.

* Very early cooling or administration of sedatives/anticonvulsants interfere with clinical and CFM evaluation and may lead to overdiagnosis. In particular, exaggerated responses to minimal stimuli may be mistaken for seizures.

Repeated clinical examination during the first 4-5 hours using the NICHD framework is strongly encouraged for diagnostic confidence and accuracy

** The use of CFM to assist with diagnosis is encouraged, particularly to evaluate the presence of seizures. However very early use of CFM may lead to **overdiagnosis** in mild HIE as it often improves in the first few hours, and cooling should not be initiated on the basis of CFM alone. Clinicians are always advised to discuss clinical and CFM findings (if available) with their local NICU prior to initiation of cooling.