Suspected/ Observed Head Injury?

**History:**
- When? Mechanism of injury?
- Loss of consciousness? Vomiting? Fitting?
- Persistent dizziness?
- Amnesia (anterograde /retrograde)?
- Worsening headache
- Clotting disorder

**Examination:**
- Assess conscious level - GCS (see table 2) and pupils
- Confused or repetitive speech?
- Skull integrity (bruises; wounds; boggy swelling) + fontanelle assessment
- Signs of base of skull fracture
- Signs of focal neurology
- Cervical spine
- If under 3 years, undress and examine fully

**Table 1**

<table>
<thead>
<tr>
<th>Green - low risk</th>
<th>Amber - intermediate risk</th>
<th>Red - high risk</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nature of injury and conscious level</strong></td>
<td>• Low risk mechanism of injury • No loss of consciousness; GCS = 15 • Child cried immediately after injury • Alert, interacting with parent, easily rousable • Behaviour considered normal by parent</td>
<td>• Mechanism of injury: fall from a height &gt; 1m or greater than child’s own height • Alert but irritable and/or altered behaviour</td>
</tr>
<tr>
<td><strong>Symptoms &amp; Signs</strong></td>
<td>• No more than 2 episodes of vomiting (&gt;10 minutes apart) • Minor bruising or minor cuts to the head</td>
<td>• 3 or more episodes of vomiting (&gt;10 minutes apart) • Amnesia or repetitive speech • Persistent dizziness • A bruise, swelling or laceration &gt; 5cm if age &lt; 1 year</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Clotting disorder</td>
<td></td>
</tr>
</tbody>
</table>

**Green Action**
- Provide written and verbal advice (see advice sheet)
- If concussion, provide advice about graded return to normal activities (see figure 2)
- Think “safeguarding” before sending home

**Amber Action**
- Consider safeguarding risk
- Observe in department for at least 4 hours post-injury
- Provide analgesia
- Discuss with ED or paeds senior if under 1 year

**Urgent Action**
- Assess need for CT (see figure 1)
- Admit for neurology obs (every 15 minutes until GCS 15, then hourly).
- If time critical transfer, call SORT (023 8077 5502)

**Suspected/ Observed Head Injury?**

- Are the symptoms and/or signs suggest an immediately life threatening injury? (see table 1)

**Green - low risk**
- Low risk mechanism of injury
- No loss of consciousness; GCS = 15
- Child cried immediately after injury
- Alert, interacting with parent, easily rousable
- Behaviour considered normal by parent

**Amber - intermediate risk**
- Mechanism of injury: fall from a height > 1m or greater than child’s own height
- Alert but irritable and/or altered behaviour

**Red - high risk**
- Mechanism of injury: considered dangerous (high speed RTA; >3m fall)
- GCS < 15 / altered level of consciousness
- Witnessed loss of consciousness lasting > 5mins
- Amnesia lasting > 5mins
- Abnormal drowsiness
- Post traumatic seizure

**Other**
- Clotting disorder
- Additional parent/carer support required

**Do the symptoms and/or signs suggest an immediately life threatening injury? (see table 1)**

- Yes
  - Contact Lead ED / Paediatric Doctor
  - Move to Resuscitation Area
  - If time critical transfer, call SORT (023 8077 5502)

**Patient presents**

**Are there safeguarding concerns (e.g. delay in presentation; injury not consistent with history or age/developmental stage of child)?**

- Yes
  - Contact child protection / social services team

**Contact child protection / social services team**

**First Draft Version: June 2016 Review Date: June 2018.**

“GMC Best Practice recommends: Record your findings (See “Good Medical Practice” http://bit.ly/1DPXl2b)”

This guidance was written in collaboration with the SE Coast SCN and involved extensive consultation with healthcare professionals in Wessex.

This document was arrived at after careful consideration of the evidence available including but not exclusively NICE, SIGN, EBM data and NHS evidence, as applicable. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. The guidance does not, however, override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient in consultation with the patient and / or carer.
**Head Injury Pathway**
Clinical Assessment/Management tool for Children

**Management - Acute Setting**

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**Table 2: Modified Glasgow Coma Scale for infants and Children**

<table>
<thead>
<tr>
<th>Score</th>
<th>Child</th>
<th>Infant</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Spontaneous</td>
<td>Spontaneous</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>To speech</td>
<td>To speech</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>To pain only</td>
<td>To pain only</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>No response</td>
<td>No response</td>
<td></td>
</tr>
</tbody>
</table>

**Best verbal response**
- Oriented, appropriate
- Confused
- Inappropriate words
- Incomprehensible sounds
- No response

**Best motor response**
- Obey commands
- Localises painful stimulus
- Withdraws in response to pain
- Flexion in response to pain
- Extension in response to pain
- No response

**Table 2: Modified Glasgow Coma Scale for infants and Children**

<table>
<thead>
<tr>
<th>Score</th>
<th>Child</th>
<th>Infant</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Coos and babbles</td>
<td>Coos and babbles</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Irritable cries</td>
<td>Irritable cries</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Cries to pain</td>
<td>Cries to pain</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Moans to pain</td>
<td>Moans to pain</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>No response</td>
<td>No response</td>
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</tbody>
</table>

**Glossary of Terms**
- **ABC** Airways, Breathing, Circulation
- **APLS** Advanced Paediatric Life Support
- **AVPU** Alert Voice Pain Unresponsive
- **B/P** Blood Pressure
- **CPD** Continuous Professional Development
- **CRT** Capillary Refill Time
- **ED** Hospital Emergency Department
- **GCS** Glasgow Coma Scale
- **HR** Heart Rate
- **MOI** Mechanism of Injury
- **PEWS** Paediatric Early Warning Score
- **RR** Respiratory Rate
- **WBC** White Blood Cell Count
Figure 2: suggested graded recovery regime following concussion (taken from BMJ 2016; 355 doi: https://doi.org/10.1136/bmj.i5629 (Published 16 November 2016)

Current UK guidance recommends that people recovering from concussion should be reviewed/assessed by a doctor before beginning activities which risk exposure to head trauma. The doctor’s role is to ensure the patient:

- has returned to work or school
- is symptom free
- is following the “graduated return to sporting activity” as above

See the full article online http://bmj.co/conrec