

Management - Combined Acute and Primary Care

Suspected/Observed Head Injury? Refer immediately to Do the symptoms and/or signs suggest emergency care by 999 an immediately life threatening injury? Yes **Patient presents** Alert emergency department History: **Examination:** (see Table 1) Assess conscious level - GCS (see table 2) Stay with child whilst When? Mechanism of injury? waiting and prepare or AVPU Loss of consciousness? Vomiting? Fitting? docur tation Confused or repetitive speech? Persisting dizziness? Skull integrity (bruises; wounds; boggy Amnesia (anterograde /retrograde)? swelling) + fontanelle assessment Worsening headache Are there **safeguarding concerns** · Signs of base of skull fracture Contact child Clotting disorder (e.g. delay in presentation; injury not protection / socia Signs of focal neurology Concern consistent with history or age/ services team Cervical spine developmental stage of child)? • If under 3 years, undress and examine fully Table 1 **Green - low risk** Red - high risk Amber - intermediate risk Mechanism of injury: fall from a height > 1m or greater than · Mechanism of injury: considered dangerous (high speed road Nature of Low risk mechanism of injury traffic accident; >3m fall) injury and No loss of consciousness child's own height conscious Child cried immediately after injury Alert but irritable and/or altered behaviour GCS < 15 / altered level of consciousness level · Alert, interacting with parent, easily rousable Witnessed loss of consciousness lasting > 5mins Behaviour considered normal by parent Persisting abnormal drowsiness Post traumatic seizure Symptoms & No more than 2 episodes of vomiting (>10 minutes apart) 3 or more episodes of vomiting (>10 minutes apart) Skull fracture – open, closed or depressed Minor bruising or minor cuts to the head Persistent or worsening headache Tense fontanelle (infants) Signs of basal skull fracture (haemotypanum, 'panda' eyes, CSF Amnesia or repetitive speech A bruise, swelling or laceration of any size should leakage from ears/ nose; Battle's sign (mastoid ecchymosis) be considered as dangerous Focal neurological deficit Other Clotting disorder Additional parent/carer support required

Green Action

- Provide safety netting advice
- If concussion, provide advice about graded return to normal activities [Fig 2] and signpost to Bumps Happen self-referral service
- Think "safeguarding" before sending home

- Send to ED for further assessment
- Consider safeguarding risk
- Provide analgesia
- Refer to NICE imaging algorithm [Fig 1]
- Discuss with ED or Paediatric senior if <1 year old

Amber Action

f deterioration suggestive of raised ICP)

Urgent Action

- Refer immediately to emergency care by 999 and alert ED team
- ED assess need for CT head within 30 mins [Fig 1]
- Treat and stabilise as per STRS guideline
- Review need for time critical neurosurgical transfer. Liaise with neurosurgical team
- Complete STPN STOPP tool

GMC Best Practice recommends: Record your findings (See "Good Medical Practice" http://bit.ly/1DPX/2b)

Head Injury Pathway

Clinical Assessment/ Management tool for Children





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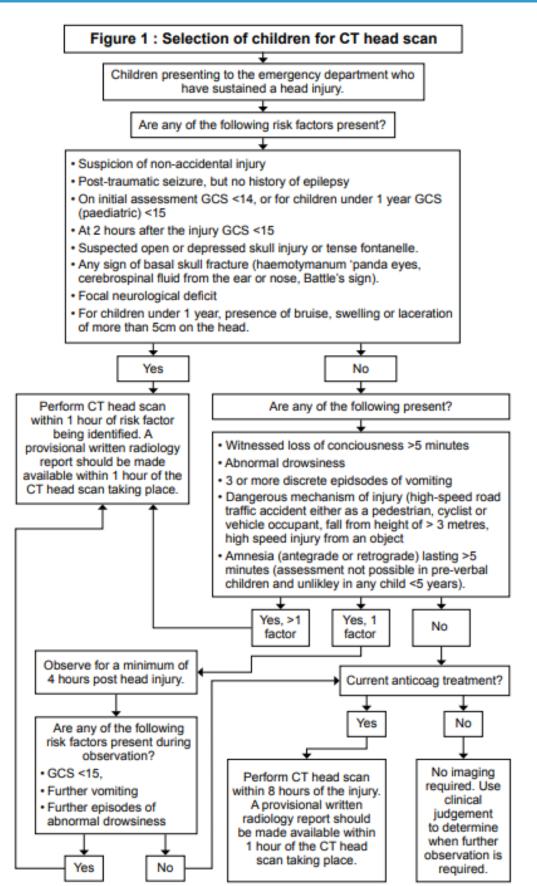


Table 2: Modified Glasgow Coma Scale for Infants and Children

	Child	Infant	Score
Eye opening	Spontaneous	Spontaneous	4
	To speech	To speech	3
	To pain only	To pain only	2
	No response	No response	1
Best verbal response	Oriented, appropriate	Coos and babbles	5
	Confused	irritable cries	4
	Inappropriate words	Cries to pain	3
	Incomprehensible sounds	Moans to pain	2
	No response	No response	1
Best motor response*	Obey commands	Moves spontaneously and purposefully	6
	Localises painful stimulus	Withdraws to touch	5
	Withdraws in response to pain	Withdraws to response in pain	4
	Flexion in response to pain	Abnormal flexion posture to pain	3
	Extension in response to pain	Abnormal extension posture to pain	2
	No response	No response	1

* If patient is intubated, unconcious, or preverbal, the most important part of this scale is motor response. Motor response should be carefully evaluated.

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)

