

*The key aim in Traumatic Brain Injury Management is detection of life threatening intracranial bleeding, and to prevent and minimise secondary brain injury from hypoxia, poor cerebral perfusion, cerebral bleeding, hypoglycaemia, seizures and fever.*

**If Major Trauma also Follow Major Trauma Guideline**

Mild= GCS 14-15    AVPU  
 Moderate= GCS 9-13    AVPU  
 Severe = GCS 3-8    AVPU

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**SEVERE:**

- Stabilise Airway
- Provide O2
- Secure IV Access
- Manage Intracranial Pressure
- Contact PICU
- Earliest Neurosurgery input

**DANGEROUS MECHANISM\***

- High-speed RTA >64kph
- Fall 2x height of child
- High-speed injury from A projectile or other object

**RESOURCES:**

[www.headway.ie](http://www.headway.ie)

**REFERENCES:**

Head injury:NICE guideline CG176 2014

**HISTORY**

- Timing and mechanism\*
- Loss of Consciousness
- Amnesia pre or post event
- Disorientation, AVPU/ GCS
- Seizure
- Nausea/ Vomiting
- Ataxia/ Dizziness
- Visual symptoms
- Clinical course improving/deteriorating?
- Other injuries
- Consider seizure or arrhythmia as precedent to injury
- Circumstances- child protection concerns?
- Past hx of bleeding/warfarin tx

**DISCHARGE REQUIREMENTS**

Observations for 4 hrs post symptoms  
 Normal conscious state  
 No further vomiting  
 Tolerating oral fluids  
 Headache not persisting  
 Social circumstances  
*Any consideration of NAI must be brought to a consultant*

**A MINOR HEAD INJURY WITHOUT SYMPTOMS OR SIGNS CAN BE DISCHARGED DIRECTLY WITH HEAD INJURY +/-SAFETY IN THE HOME ADVICE**

**EXAMINATION**

**PRIMARY SURVEY**

Eyes: Pupils, Fundoscopy, N.B. NAI  
 Movements- focal sign, nystagmus.  
 Panda Eyes  
 Palpate Head, Neck, Face, Teeth  
 Check for CSF/blood in nose/ears  
 Neuro exam, balance + Gait.

**CT BRAIN INDICATIONS**

Initial GCS <14, or for children under 1 year GCS <15.  
 At 2 hours after the injury, GCS less than 15.  
 On Warfarin Therapy  
 Suspicion of non-accidental injury.  
 Post-traumatic seizure but no history of epilepsy.  
 Suspected open or depressed skull fracture or tense fontanelle.  
 Sign of basal skull fracture  
 Focal neurological deficit.  
 Bruise, swelling or laceration of more than 5 cm on the head in children <1yr old.

**INVESTIGATIONS**

**CT BRAIN**

FBC, Glucose, VBG, ECG, +/- Toxicology, +/-CT Neck

**ADMIT IF MEETS ANY CT CRITERIA**

**DISCHARGE ADVICE**

Re-present if develops persistent headache, seizure, becomes confused/drowsy/unconscious, ataxic or vomits

**See Concussion(mild TBI) guideline for REST, RETURN TO PLAY/SCHOOL ADVICE**

**OR TWO OF:**

Loss of consciousness lasting> 5 mins (or unknown)  
 Abnormal drowsiness.  
 3+ discrete episodes of vomiting.  
 Dangerous mechanism of injury\*  
 Amnesia (antegrade or retrograde) > 5 mins.

**This algorithm has been produced by the National Paediatric and Neonatology Clinical Programmes. It is aimed at medical, nursing and allied health professionals working in both primary and emergency care settings.**

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This algorithm has been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach.

Clinical material offered in this algorithm does not replace or remove clinical judgement.