



University Hospital Galway

EMERGENCY DEPARTMENT

GalwayEM.ie

Head Injuries

(<https://galwayem.ie/guidelines/trauma-and-musculoskeletal/head-injuries>)

Category

Trauma and Musculoskeletal (<https://galwayem.ie/guidelines/trauma-and-musculoskeletal>)

Principles of Management

A head injured patient should initially be assessed and managed according to clear principles and standard practice as embodied in the Advanced Trauma Life Support (ATLS) system.

CT Scanning

-, which should be requested via senior ED doctor, should be done in any patient who has had a head injury and has any of the following features:

- GCS < 13 -when first assessed in ED
- GCS < 15 at two hours post injury when assessed in ED
- Suspected open or depressed skull fracture
- Signs of Basal skull fracture
- Post-traumatic seizure
- New focal neurological signs
- Vomits more than once (use clinical judgement in case of children < 13yrs)

CT scanning should also be done in any patients who have had a **loss of consciousness or any amnesia AND who fulfil the following criteria:**

- Coagulopathy or on warfarin
- Age > 64
- Dangerous mechanism of injury
 - pedestrian or cyclist struck by a motor vehicle
 - ejected from a motor vehicle
 - fall from > 1 metre or 5 stairs
- Amnesia of events > 30 minutes preceding impact

Admission or Discharge?

A patient should be admitted to hospital if:

- GCS < 15
- Has an abnormal CT scan
- Has a normal CT scan but has any of the following:
 - persistent vomiting requiring iv fluids
 - a seizure at any time after injury
 - focal neurological signs

- the patient has social problems or cannot be supervised by a responsible adult.

Patients can be discharged from the Emergency Department for observation at home if fully conscious (GCS 15/15) have had a normal CT scan, if indicated, and have none of the additional risk factors above or other relevant adverse medical and social factors. Any patient discharged should be given written head injury advice.

Stiell IG, et al. The Canadian CT head rule for patients with minor head injury. Lancet May 5, 2001;357:1391-6. NICE Head Injury Guidelines 2014

Children (age < 16) with Head Injuries

The Glasgow Coma Scale is difficult to apply to the young (under 5 years) child

A CT scan is indicated if any of the following are present:

- Witnessed loss of consciousness lasting > 5 minutes
- Amnesia (anterograde or retrograde) lasting > 5 minutes
- Abnormal drowsiness
- 3 or more discrete episodes of vomiting
- Clinical suspicion of non-accidental injury
- Post-traumatic seizure but no history of epilepsy
- Age > 1 year: GCS < 14 on assessment in the emergency department
- Age < 1 year: GCS (paediatric) < 15 on assessment in the emergency department
- Suspicion of open or depressed skull injury or tense fontanelle
- Any sign of basal skull fracture (haemotympanum, 'panda' eyes, cerebrospinal fluid leakage from ears or nose, Battle's sign)
- Focal neurological deficit
- Age < 1 year: presence of bruise, swelling or laceration > 5 cm on the head
- Dangerous mechanism of injury (high-speed road traffic accident either as pedestrian, cyclist or vehicle occupant, fall from > 3 meter, high-speed injury from a projectile or an object).

If vomiting/drowsiness are the only indications for a CT scan in an otherwise well child it may be deferred in favour of a period of neuro observation in a unit experienced in looking after children.

Admission or Discharge?

Children should be admitted if any of the following risk factors apply:

- GCS < 15
- Abnormal CT scan
- Persistent vomiting when a CT scan has been deferred
- Has a normal CT scan but has any of the following
 - Persistent vomiting requiring IV fluids
 - a seizure at any time after injury
 - focal neurological signs -
 - difficulty in making a full assessment
 - suspicion of non-accidental injury
- not accompanied by responsible adult or social circumstances considered unsatisfactory.

Children may be discharged from the Emergency Department if none of the risk factors noted above apply. Clear written instructions should be given to and discussed with parents or carers before a child is discharged.