# Imaging for children aged <16yrs with head injury and referral for admission

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| Title: Imaging for children <16yrs with head injury and referral for admission | | | |
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| **Executive Lead:** | Associated Medical Director | | |
| **Target Audience:** | Clinicians in NHS Lothian caring for children with head injuries | | |
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## Version Control

| Date | Author | Version/Page | Reason for change |
|---|---|---|---|
| 12/04/21 | | V1 | New document |
| 25/10/22 | | V2 | Updated guidance on referral for admission |
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# Imaging for children aged <16yrs with head injury and referral for admission

NHS Lothian

## Contents

## 1.0 Purpose

To provide guidance on appropriate radiological imaging in children & young people with a head injury.

## 2.0 Scope

All clinicians caring for children & young people aged < 16yrs who present within 72 hours of a head injury

## 3.0 Definitions

Head injury is any injury to the head.

Referral for admission means the team the patient will be referred to for inpatient stay.

## 4.0 Roles and responsibilities

The assessing clinician and radiology staff should determine the need for imaging as indicated in this guideline and should ensure any request complies with IRMER regulations.

## 5.0 Main content

Most children who present with a head injury will not require any imaging. This guideline provides indications for imaging the small number of children who are at risk of associated brain injury / complications.

**Plain x-rays (i.e SXR) is not routinely indicated in children with head injury**

**CT scanning should be performed if, after discussion with a senior ED clinician (ideally consultant) there is:**

Suspicion of non-accidental injury
Clinical evidence of base of skull fracture
Any new focal neurological deficit
A reduced conscious level (aged over 1yr: GCS <14 at presentation, or < 15 after 2 hrs; aged under 1yr GCS <15 at presentation)
A suspected open fracture, penetrating brain injury or tense fontanelle
A bruise, swelling or laceration of more than 5 cm on the head and the child is aged under 1 year
A bleeding disorder or anticoagulation with any neurological symptoms / signs

**Children with the following should be discussed with senior ED clinician (ideally consultant), observed for 2- 4 hrs and a CT performed if any deterioration / failure to improve / ongoing concern:**

Loss of consciousness lasting more than 5 minutes (witnessed).
Abnormal drowsiness
Persistent vomiting
Significant mechanism of injury (e.g high energy RTA, fall >3m)
Amnesia (antegrade or retrograde) lasting more than 5 minutes
Bleeding disorder or anticoagulation with no neurological concerns (must be discussed with haematology team – may need longer period of observation)

Any child with **an abnormal** CT scan( eg skull fracture , intracranial haemorrhage) **or** persisting decreased conscious level **or** persisting focal neurology should be referred to the on-call neurosurgical team. If they feel admission is indicated the child (any age) will be admitted under their care.

**Children who either do not meet the criteria for CT, or who have a normal CT:**

These children can often be safely discharged from the Emergency Department. However, admission may be indicated if:

Persisting headache / vomiting / lethargy
Difficulty in making a full assessment
Suspicion of non-accidental injury (d/w child protection)
Other significant medical problem
Not accompanied by responsible adult or social circumstances considered unsatisfactory

Children under 2 yrs old should be referred to and admitted under the PARU/general paediatric team.

Children aged 2 yrs and over should be referred to and admitted under the paediatric surgical team.

## 6.0 Associated materials

none

## 7.0 Evidence base

Head injury: assessment and early management. Clinical guideline. NICE, 22 January 2014

## 8.0 Stakeholder consultation

As per authors plus paediatric neurosurgical team

## 9.0 Monitoring and review

Review by 13th June 2023