Cervical Spine Injury in Children

Immobilise C spine if any of:
Significant mechanism of injury
GCS < 15 on initial assessment
Midline bony tenderness tenderness
Focal neurological deficit or paraesthesia
Any other clinical suspicion of C spine injury
eg distracting injury, intoxication

STOP! THINK!
Is a trauma call required?

1. Can range of neck movement be safely assessed?

- Involved in simple read-end RTC
- Comfortable in sitting position in ED
- Ambulatory at any time since injury
- No midline cervical spine tenderness
- Presents with delayed onset neck pain
- No neurological symptoms arms or legs

Yes → **Can patient actively rotate neck to 45° left and right?**

Yes → **No imaging required**
Re-evaluate if clinical picture changes

No

No

2. Is imaging required?
Patient alert & stable with clinical suspicion of cervical spine injury where **ANY** of following present:

1. Unable to safely assess range of movement
2. Unable to rotate neck 45° as above
3. GCS 14-15 at time of assessment
4. Dangerous mechanism of injury:
   fall > 1m or 5 stairs or twice childs height
   axial load to head eg diving
   High speed RTA
   Ejection from vehicle
   Rollover RTA
   Bicycle collision
5. Focal peripheral neurological deficit
6. Paraesthesia in upper or lower limbs

No

Yes

Yes

3. Is a CT scan required? Admit to PCDU to complete scan if no exclusions

- GCS < 13 on initial assessment with head injury
- Patient has been intubated
- Definitive diagnosis of C spine injury needed urgently (eg before surgery)
- Patient having other body areas scanned for head injury or multi-region trauma

MRI Cervical Spine:
May be indicated in addition to CT if neurological signs and symptoms
Discuss with ED Senior

No

Request X-ray
3 view (omit peg view if child cannot cooperate)
to be carried out within 1 hour of request

4. Is a CT scan required after x-ray?

- Plain x-ray suspicious or definitely abnormal
- Plain x-ray technically inadequate
- Strong clinical suspicion of injury despite normal x-ray

Yes → **Request Immediate CT**
Imaging to be carried out within 1 hour of request

Provisional written report should be available within 1 hour of scan being completed

No

Normal

Abnormal

Discharge Criteria

- Normal imaging or imaging not indicated
- No other condition requiring admission
- No persisting neurology
- Able to mobilise to normal level

Major Trauma

Discuss with ED Consultant RLH #6116
bleep 1115 or 0203 594 5722

The ED Consultant RLH will liaise with neurosurgery as required and if necessary identify a suitable bed

Time-critical injuries may need NUH to transfer
0207 902 2511 or #6209

Critical Transfer = within 10 minutes
eg cord compression
or
Discuss with CATS 0800 085 0003

The receiving hospital for spinal injury as part of the major trauma network in East London is Stanmore Hospital **#6225**

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Reference Documents

Triage, assessment, investigation and early management of head injury in children, young people and adults, NICE CG176, January 2014
Acute Neurosurgical Emergency Transfer, CATS, June 2013