LRI Emergency Department

Suspected cervical spine injury (CSI)

To be used in all adult blunt trauma pts presenting with one or more of the below

- **Arrives with ROCSM in place**
- **Head injury**
- **Neck pain**
- **New focal peripheral neurological deficit**

Do NOT use if injury >48h old or if repeat presentation

Disclaimer:
This is a clinical template; clinicians should always use judgment when managing individual patients

Developed by Martin Wiese . Version 104

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Patient details

Full name

DoB

Unit number

(use sticker if available)

Patient sitting or standing and able to hold head without support? (Y / N)

NB: Cervical spinal immobilization is correctly termed **ROCSM** = restriction of cervical spine motion

No ROCSM for now

Manual in-line stabilisation (MILS) of the c-spine or **ROCSM** with antiemetic cover (see box 8), as per clinical stability

- Record injury mechanism in box 12
- Assess hands and feet for weakness and altered or absent sensation
- In the unconscious or exposed male patient, also check for priapism

Definite CT indication (complete box 1)? (Y / N)

Is patient stable (box 2)? (N / Y)

- Maintain MILS or apply ROCSM (see box 8)
- If patient arrived on spinal board, remove after primary survey
- Box 9 details suggested management strategies
- Involve ED senior early

Neck pain * or 'suspicious triad' (box 3)? (N / Y)

* **Definition**: Pain in posterior midline or posterolateral aspect of the neck

Dangerous mechanism (box 4), predisposing condition (box 5) or will CT of other body areas be needed? (Y / N)

Ambulatory since injury? (N / Y)

Aged over 65 or pins & needles in limb(s)? (Y / N)

Is range-of-motion (ROM)-testing safe (box 6)? (N / Y)

Remove ROCSM

Able to turn head 45° right and left? (N / Y)

ROCSM **NOT** needed

ROCSM needed (box 10)

NB: CT transfers of patients with ROCSM require a nurse escort

- Request CT c-spine, clearly stating whether or not ROCSM will be required
- Record findings in box 10
- See box 11 for guidance regarding care after CT

Cervical spine 'cleared' Record in notes

① Definite CT indication?

☐ **YES** – one or more of the below

- GCS 12 or less on initial ED assessment ☐
- Patient intubated ☐
- Focal peripheral neurological deficit ☐
- Definitive diagnosis of CSI needed urgently (e.g. if c-spine manipulation needed during surgery or anaesthesia) ☐

☐ **NO** – none of the above

② Patient stable?

☐ **No**, as at least one of the below

GCS	<15 ☐
Respiratory rate	<10 ☐
Respiratory rate	>24 ☐
Systolic BP	<90 ☐

☐ **Yes**, as none of the above

③ 'Suspicious triad' present?

☐ **YES** – as **ALL** three of the below

1. Head injury ☐
2. Non-ambulatory since injury ☐
3. One of the sentinel mechanisms below ☐
   - ☐ Diving injury
   - ☐ Contact sport with axial load to head
   - ☐ Motor vehicle or motorcycle collision
   - ☐ Pedestrian struck by motor vehicle
   - ☐ Bicycle collision

☐ **NO** – as **NOT ALL** three of the above

④ Dangerous mechanism?

☐ **Yes** - one of the below

- Fall ≥3 feet or 5 steps ☐
- Axial load to head, e.g. diving ☐
- Crash with motorized recreational vehicle (e.g. quad bike) ☐
- Motor vehicle collision at ≥65mph, rollover or ejection ☐
- Bicycle collision ☐

☐ **No** - none of the above

⑤ Predisposing condition?

☐ **Yes** - one or more of the below

- Rheumatoid arthritis ☐
- Ankylosing spondylitis ☐
- Cervical spinal stenosis ☐
- Previous c-spine surgery ☐

☐ **No** - none of the above

⑥ Safe to test ROM?

☐ **Yes**, as one or more of the below

- Ambulatory at any time after injury ☐
- Sitting position in the ED ☐
- Onset of pain not immediate ☐
- Simple rear-end shunt (see box 7) ☐
- No midline c-spine tenderness ☐

☐ **No**, as none of the above

⑦ Simple rear-end shunt?

☐ **No**, as at least one of the below

- Pushed into oncoming traffic ☐
- Hit by high speed vehicle ☐
- Rollover ☐
- Hit by bus or large truck ☐

☐ **Yes**, as none of the above

Assessed by

Print name | Signature | Job role | Date | Time completed

⑧ ROCSM with antiemetic cover

- Use manual in-line stabilisation (MILS) during initial assessment of unstable pts and during airway manoeuvres, including RSI
- **ROCSM** = head blocks & tape only (**DO NOT** use cervical collar), on scoop or transfer trolley mattress (as available)

  NB: If a scoop is used, patient should be scanned and taken off scoop within 45min
- Offer ondansetron orodispersible film 16mg PO routinely if any of the below:
  - Age >75
  - Weight >105kg
  - Vital signs or GCS abnormal
  - Patient receiving opiates
- Offer **BOTH** ondansetron (as above) **AND** metoclopramide IV to all pts with ROCSM who have already vomited or feel nauseous

⑨ C-spine assessment if unstable (see box 2)

If alert but abnormal vital signs

➔ Reassess patient after appropriate interventions

☐ If stabilized – return to the algorithm

☐ If instability persists – proceed to CT

If stable vital signs but GCS 13 or 14

➔ Use clinical judgment; select from the following options

☐ ROCSM (see box 8) and reassessment at 2h from injury. If GCS then 15, return to the algorithm. If not, proceed to CT.

☐ Immediate CT c-spine (**AND** head) if ROCSM is poorly tolerated

⑩ CT c-spine results

☐ normal

11 Post-imaging care guidance

☐ **Acute CT abnormality or new focal neurological deficit**

→ ROCSM necessary. Refer to orthopaedic team. **NB**: If focal peripheral neurological deficit despite normal CT, MRI can show 'spinal cord injury without radiological abnormality' (SCIWORA).

NB: Consider CT or MR angiography of the neck vessels if injuries seen on CT (fractures involving foramina transversaria or lateral processes, or vertebral misalignment) raise suspicion of vascular injury or if there are features suggestive of a posterior circulation stroke

☐ **Neither of the above but patient intubated and ventilated**

→ ROCSM necessary. If reassessment not possible after 24h, options are MRI or lifting of ROSCM if agreed by 2 consultants.

☐ **All other patients can be declared 'radiologically cleared'**

→ Discontinue ROCSM and record outcome in the notes

12 Mechanism of injury

☐ **Fall**

- ☐ down stairs
  distance in steps:
- ☐ from height
  distance in feet:
- ☐ on level ground
- ☐ riding incident

☐ **Motor vehicle collision (MVC)**

Seatbelt worn	☐ Yes	☐ No
Did vehicle roll over	☐ Yes	☐ No
Was patient ejected	☐ Yes	☐ No

Patient vehicle type *(please circle)*

Other

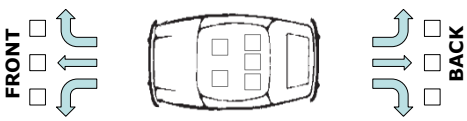
Object of collision *(please circle)*

Other vehicle type or object

None

Collision schematic

- *Indicate patient's position in vehicle*
- *Tick direction of travel*
- *Draw an arrow to indicate point & direction of impact with object*



Patient vehicle speed *(mph)*

Colliding vehicle speed *(mph, if applicable)*

Combined speed *(mph; if frontal impact with other vehicle)*

☐ **Pedestrian hit by motor vehicle**

☐ **Bicycle crash**

☐ **Diving injury**

☐ **Contact sport + axial load to head**

☐ **Other**