

# Canadian C-Spine Rule

For alert (GCS=15) and stable trauma patients where cervical spine injury is a concern.

**1. Any High-Risk Factor Which Mandates Radiography?**

**Age  $\geq 65$  years**  
or  
**Dangerous mechanism\***  
or  
**Paresthesias in extremities**

**Rule Not Applicable If:**

- Non-trauma cases
- GCS  $< 15$
- Unstable vital signs
- Age  $< 16$  years
- Acute paralysis
- Known vertebral disease
- Previous C-spine surgery

No

Yes

**2. Any Low-Risk Factor Which Allows Safe Assessment of Range of Motion?**

**Simple rearend MVC\*\***  
or  
**Sitting position in ED**  
or  
**Ambulatory at any time**  
or  
**Delayed onset of neck pain\*\*\***  
or  
**Absence of midline c-spine tenderness**

**Radiography**

No

Unable

**3. Able to Actively Rotate Neck?**

**45° left and right**

Yes

**No Radiography**

**\* Dangerous Mechanism:**

- fall from elevation  $\geq 3$  feet / 5 stairs
- axial load to head, e.g. diving
- MVC high speed ( $>100$ km/hr), rollover, ejection
- motorized recreational vehicles
- bicycle struck or collision

**\*\* Simple Rearend MVC Excludes:**

- pushed into oncoming traffic
- hit by bus / large truck
- rollover
- hit by high speed vehicle

**\*\*\* Delayed:**

- i.e. not immediate onset of neck pain

# Canadian CT Head Rule

CT head is only required for minor head injury patients with any one of these findings:

## *High Risk (for Neurological Intervention)*

1. GCS score < 15 at 2 hrs after injury
2. Suspected open or depressed skull fracture
3. Any sign of basal skull fracture\*
4. Vomiting  $\geq$  2 episodes
5. Age  $\geq$  65 years

## *Medium Risk (for Brain Injury on CT)*

6. Amnesia before impact  $\geq$  30 min
7. Dangerous mechanism \*\* (pedestrian, occupant ejected, fall from elevation)

### \*Signs of Basal Skull Fracture

- hemotympanum, 'racoon' eyes, CSF otorrhea/rhinorrhea, Battle's sign

### \*\* Dangerous Mechanism

- pedestrian struck by vehicle
- occupant ejected from motor vehicle
- fall from elevation  $\geq$  3 feet or 5 stairs

### Rule Not Applicable If:

- Non-trauma cases
- GCS < 13
- Age < 16 years
- Coumadin or bleeding disorder
- Obvious open skull fracture