Canadian Cervical Spine Rule

1. Any High-Risk Factor Which Mandates Radiography?

Age ≥ 65 years
or
Dangerous mechanism *
or
Paresthesias in extremities

Rule Not Applicable if:
- Non-trauma cases
- Glasgow coma Scale < 15
- Unstable vital signs
- Age < 16 years
- Acute paralysis
- Known vertebral disease
- Previous C-spine surgery
- Pregnant

No → **2. Any Low-Risk Factor Which Allows Safe Assessment of Range of Motion?**

Simple rear-end motor vehicle collision (MVC) **
or
Sitting position in emergency department
or
Ambulatory at any time
or
Delayed onset of neck pain ***
or
Absence of midline c-spine tenderness

Yes (from High-Risk) → **Radiography**

No (from Low-Risk) → **Radiography**

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

45° left and right

Unable → **Radiography**

Able → **No Radiography**

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*Dangerous Mechanism
- Fall from elevation ≥ 3 feet or 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 Rear-end MVC Excludes
- Pushed into oncoming traffic
- Hit by bus or large truck
- Rollover
- Hit by high speed vehicle

***Delayed
- Not immediate onset of neck pain

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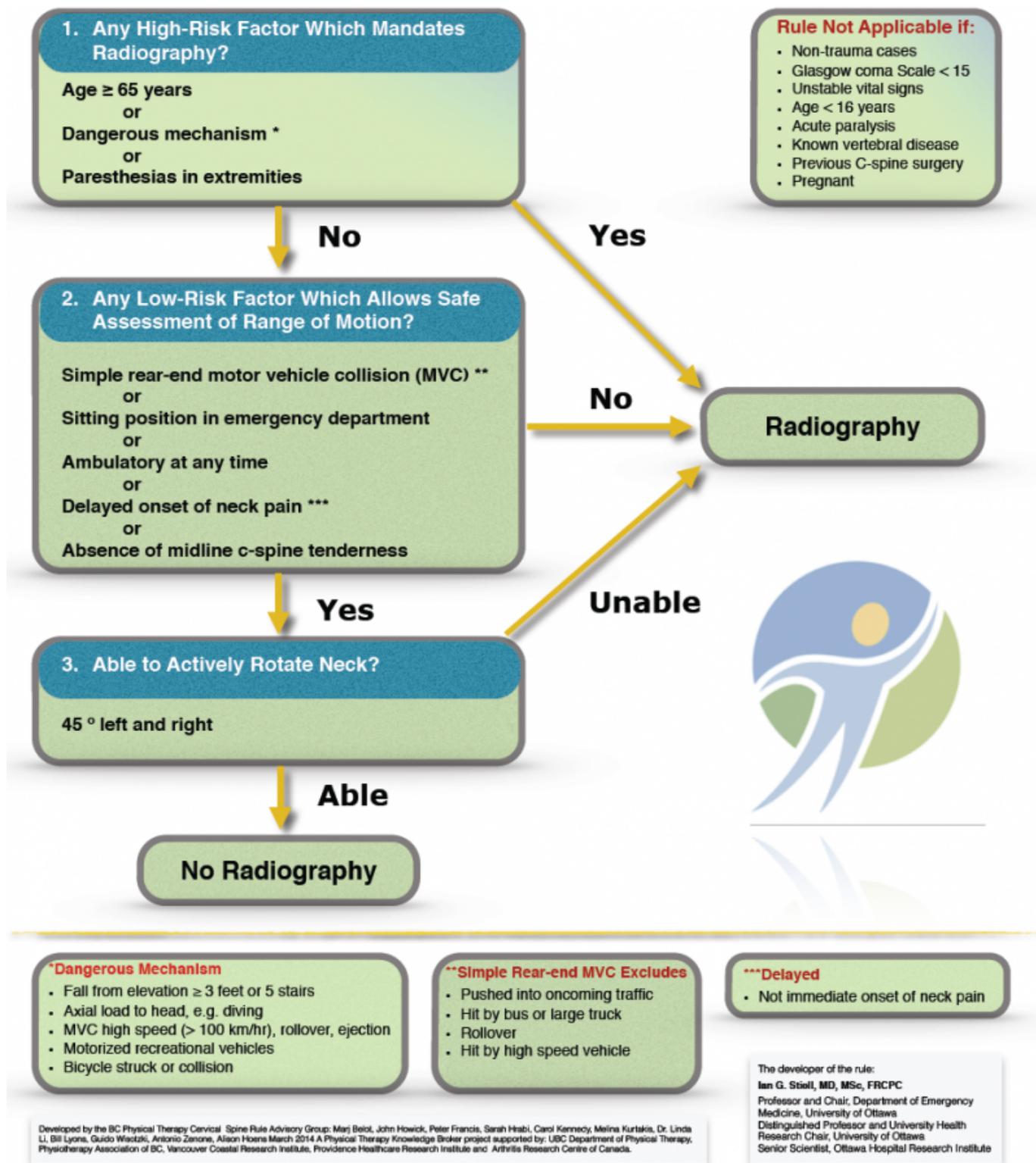
In 2017 there were few studies assessing the diagnostic test accuracy of the NEXUS Criteria for C-Spine Imaging and CCR in children. At this moment, there was not enough evidence to determine the accuracy of the Canadian C-spine Rule to detect CSI in pediatric trauma patients following blunt trauma. The confidence interval of the sensitivity of the NEXUS criteria between the individual studies showed a wide range, with a lower limit varying from 0.18 to 0.91 with a total of four false negative test results, meaning that if physicians use the NEXUS criteria in children, there is a chance of missing CSI. Since missing CSI could have severe consequences with the risk of significant morbidity, we

consider that the NEXUS criteria are at best a guide to clinical assessment, with current evidence not supporting strict or protocolized adoption of the tool into pediatric trauma care. Moreover, we have to keep in mind that the sensitivity differs among several studies, and individual confidence intervals of these studies show a wide range. Our main conclusion is therefore that additional well-designed studies with large sample sizes are required to better evaluate the accuracy of the NEXUS criteria or the Canadian C-spine Rule, or both, in order to determine whether they are appropriate triage tools for the clearance of the cervical spine in children following blunt trauma [1].

[1]

Slaar A, Fockens MM, Wang J, Maas M, Wilson DJ, Goslings JC, Schep NW, van Rijn RR. Triage tools for detecting cervical spine injury in pediatric trauma patients. Cochrane Database Syst Rev. 2017 Dec 7;12:CD011686. doi: 10.1002/14651858.CD011686.pub2. Review. PubMed PMID: 29215711.

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