Spinal Motion Restriction Procedure

Potential for spinal injury from blunt trauma mechanism

High risk patients - must perform spinal motion restriction

- Any altered mental status (GCS <15) including possible intoxication from alcohol or drugs, agitation.
  - Pediatric patients may demonstrate altered mental status with agitation, apnea, hypopnea, or somnolence.
- Midline neck or back pain and/or tenderness.
- Focal neurologic signs and/or symptoms (e.g. weakness, tingling, or numbness).
- Anatomic deformity of the spine.
- Torticollis (self-splinting or painful rotation/tilt of the neck).
- Unreliable patient interaction including distraction from painful injury or distressing circumstances.
- Communication/language barrier that prevents accurate assessment.
- Lack of cooperation or contribution during exam.

High Risk Patient Characteristics

- Meets Field Trauma Triage mechanism criteria
- Age >65
- Axial load injuries (diving injuries, spearing tackle), sudden acceleration/deceleration, lateral bending forces to neck/torso.

Apply spinal motion restriction for high risk patient

Meets none of above

Low risk if patient meets all of the following:

- Minor mechanism - equavalent to simple rear end collision
- No neck pain on scene
- No midline cervical tenderness
- Ambulatory on scene at any time

May be transported without the use of a cervical collar or any other means to restrict spinal motion.

Low risk characteristics have not been studied in pediatric patients are should not be used alone to determine need for SMR.

Spinal Motion Restriction Protocol

Education/Pearls

Spinal Motion Restriction (SMR) aims to reduce movement in a patient's spine, thereby preventing injury to a potentially unstable spine or injury to the spinal cord. SMR is defined as placement of a cervical collar and its accompanying stabilizing maneuvers. These include securing the patient FLAT to stretcher unless anatomy prevents, minimizing movement and transfers, and maintainin in-line spine stabilization during any necessary movement and transfers.

- SMR cannot be safely performed with a patient in a sitting position.
- Patients who meet any high-risk criteria require SMR but do NOT require the use of a long spine board.
  - SMR may be achieved by use of a scoop stretcher, vacuum splint, or ambulance stretcher with the patient safely secured.
  - LSB should be reserved for extrication. Effort should be mae to remove the patient form this form of rigid device as soon as possible.
  - These patients should not be transported in the sitting position.
- If elevation of the head is required, maintain alignment of the neck and torso while elevating the head. Consider Reverse Trendelenburg, if stretcher allows.

Pediatrics:

- Low risk characteristics have not been studied in pediatric patients and should not be used alone to determine need for SMR.
- Children may require additional padding under the shoulders to avoid excessive cervical spine flexion with SMR.