



SPINAL MOTION RESTRICTION (SMR) – ADULT/ADOLESCENT

DEFINITION:

Spinal motion restriction (SMR) is stabilization of the head, neck, torso, and pelvis of injury or trauma victims so that the spinal cord is protected from movement of potentially fractured or unstable bony elements of the spine.

INDICATIONS:

Victims with injuries sustained by blunt or penetrating trauma, or mechanical stress of the cervical, thoracic, or lumbar regions. Specific spinal motion restriction indications include, but are not limited to the following:

Physical:

- Reported numbness, tingling, weakness, or paralysis of an upper or lower extremity
- Neck or lower spine pain (voluntarily stated by patient or on questioning)
- Spinal tenderness over the bony spine upon palpation by EMS personnel
- Injury with altered mental status (including intoxication) such that physical assessment is unreliable
- Painful injury of chest, abdomen-pelvis, arms or legs such that physical assessment for potential spinal injury may not be reliable due to victim focusing on pain or injury

Mechanism of Injury:

- Accidents in which the head strikes an obstacle and the cervical spine is stressed by motion or mechanical force (such as occurs with diving, surfing, football, fall, and automobile accidents).
- Hyperextension neck injuries (forceful bowing of the neck from the head being pushed or thrown back)
- Victims surviving attempted hanging.
- Victims of electric shock with reported or suspected muscle convulsive activity or loss of consciousness.

Judgment:

- Spinal motion restriction should be placed if EMT or Paramedic suspects spinal injury (maintain high suspicion for spinal injury in victims 65-years and older)

RAPID EXTRICATION EXCEPTIONS:

In the following situations, patients should be moved (while limiting motion of the spine as much as possible) to an appropriate perimeter or location before placing SMR:

- ▶ Unsafe scene that poses an imminent danger to the patient or providers
- ▶ Patient with a life-threatening condition that requires immediate intervention
- ▶ Patient must be moved so that providers can access other patients(s) with potential serious conditions

CONTRAINDICATIONS:

1. Facial/oral bleeding or uncontrolled vomiting such that the airway cannot be controlled
2. Uncontrolled bleeding that cannot be controlled with spinal motion restriction in place.

EQUIPMENT:

- Personal protective equipment (PPE) as conditions require
- Adjustable rigid cervical collar
- Soft supports for placement on both sides of the head and padding of the body space voids
- Short, rigid extrication device
- X-Ray Translucent long back board for extrication
- Gurney with appropriate straps for stabilization of patient

Approved:

TxGuide2015:
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PROCEDURE:

1. Assess airway and monitor during all time motion restriction is in place.
2. Avoid unnecessary patient movement.
3. Manually restrict motion of the patient's head maintaining an in-line neutral position.
4. Assess motor, sensory and circulatory function in each extremity and document findings.
5. Place rigid cervical collar and appropriately adjust size
6. If ambulatory or can self-extricate:
 - Escort and assist getting onto gurney.
- If not ambulatory or extrication required:
 - Use extrication device as needed to move patient to gurney.
 - Remove extrication device by log roll and supporting head and cervical spine against rotation.
7. Secure patient with gurney straps in supine position (or position of comfort if supine position not tolerated).
8. If wearing helmet:
 - Helmeted athletes laying supine and wearing shoulder pads (football, ice hockey, and lacrosse) should be motion restricted and transported with helmet and pads left in place; with face guard or shield removed to allow assessment of and access to the airway.
 - If not wearing shoulder pads, remove helmet with second responder maintaining manual stabilization of the head and neck in neutral position.
9. If obviously pregnant, secure in left lateral position and maintain spinal motion restriction with pillows or blankets.
10. Use secured rolled towels or similar padding or head block device to limit motion of head and neck.
11. Document post- motion restriction assessment of motor, sensory, and circulation findings.
12. Remove cervical collar if device impairs airway or breathing or cannot be tolerated and document reason.

NOTES:

1. The responder maintaining manual stabilization of the head and neck should not put unnecessary pressure or traction on the neck.
2. Use towels or other padding as necessary to effect spinal motion restriction for patients with chronic spinal deformity.