

## ***Spinal Immobilization***

### **MFR/EMT/SPECIALIST/PARAMEDIC**

#### **Indications**

1. Mechanism of injury with one or more
  - a. Specific Objective Findings:
    - i. Altered Mental Status (Patient not oriented to person, place and time, history of confusion, memory deficits or loss of consciousness)
    - ii. Use of Intoxicants or Illicit drugs (Use of drugs or intoxicants by history, smell of potential intoxicants, behavior may indicate intoxication)
    - iii. Motor and/or sensory deficits present (Patient unable to appropriately move all extremities, numbness, tingling or shooting pains, decrease or loss of sensation in extremities)
    - iv. Patient complaint of spinal column pain or tenderness
    - v. Painful distracting injury
    - vi. Long bone fracture proximal to wrist or ankle
    - vii. Priapism
    - viii. Spinal Shock

#### **Specific Techniques**

1. Cervical Immobilization Devices
  - a. Cervical collar should be placed on patient prior to patient movement, unless absolutely impossible.
  - b. If no collar can be made to fit patient, towel or blanket rolls may be used to support neutral head alignment.
2. Extrinsication Device/Short Backboard Procedure
  - a. May be indicated when patient condition is stable, and patient is in more of a sitting position than horizontal position.
  - b. Patient's head and cervical spine should be manually immobilized from an anterior or posterior location.
  - c. Rescuers place patient in stable, neutral position where space is created to place extrication device/backboard behind patient.
  - d. While patient is supported, extrication device/backboard is placed behind patient, and patient moved back into secure position if necessary.
  - e. Extrinsication device/short backboard device is secured to patient, with torso straps applied before head immobilization.
    - i. Head immobilization material is used without compromising movement of lower jaw (to assure possible airway management especially after patient placed in supine position).
  - f. Patient is moved to supine position on long backboard.
  - g. Patient is further immobilized on Long backboard.

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3. Emergency Patient Removal
  - a. Indicated when scene poses an imminent life -threatening danger to patient and/or rescuers, (i.e.; vehicle or structure fire).
  - b. Patient is pulled from danger while best attempt is made to immobilize c-spine.
  - c. Rapid Extrication removal without short spinal immobilization indicated when patient condition is unstable (ie: airway-breathing compromise, shock, unconsciousness).
4. Long Backboard Immobilization
  - a. Indicated when patient requires spinal immobilization.
  - b. Cervical immobilization device should be in place.
  - c. Patient is log rolled, maintaining neutral alignment of spine and extremities, to the long backboard (Log roll is preferred method).
    - i. If log roll is not possible, patient should be moved to board while maintaining neutral alignment.
  - d. Patient is strapped to the board in a manner to prevent lateral or axial slide.
  - e. Head immobilization materials such as foam pads, blanket rolls may be used to prevent lateral, flexion or extension movements.

**Special Considerations**

1. Hypoventilation is likely to occur with spinal cord
  - a. Injury above the diaphragm. Quality of ventilation should be monitored closely with support offered early.
  - b. Spinal/neurogenic shock may Result from high spinal cord injury. Monitor patient for bradycardia and hypotension. The typical sympathetic nervous system response to trauma can not occur because of interruption of nerve impulses.
  - c. Neurologic impairment will complicate assessment of abdomen and extremities (pain, guarding, etc., may not be present)
  - d. Immobilization of the patient wearing a helmet should be according to the Helmet Removal Procedure.
  - e. Manual ("hands-on") immobilization must be initiated and continue until additional immobilization equipment is in place.
    - i. During patient movement or during rough transport, manual immobilization may need to be added again to stabilize patient.
    - ii. Manual immobilization must be used during any procedure that risks head or neck movement, such as endotracheal intubation.
    - iii. Be suspicious of a spinal injury with patient's who are unconscious.
    - iv. Documentation must include: Mechanism of Injury, Patients level of consciousness, Neurological deficits, Spinal column pain or tenderness, suspicion of use of drugs or intoxicants, painful distracting injuries, or any other specific objective findings.
    - v. The use of sandbags to assist with head stabilization is NOT acceptable.

**Note:** *Mechanism of Injury is defined as violent impact forces that are clearly capable of damaging the spinal column. Examples include: high velocity crashes, a fall from >20 feet, a gunshot wound to the torso or neck.*