

Subject: Treatment Guidelines – BLS Personnel  
**Assessment of Spinal Injury**

Associated Policies:

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- I. Indications
  - A. Injury suggesting possible spinal compromise.
- II. Therapeutic effects
  - A. Provides a method to differentiate between patients needing spinal immobilization and those who may not.
- III. Contraindications
  - A. Absolute:
    1. None.
  - B. Relative:
    1. Non-traumatic patients.
- IV. Adverse effects
  - A. None.
- V. Equipment
  - A. None.
- VI. Procedure
  - A. Determine Mechanism of Injury:
    1. Examples of positive mechanisms (indicating need for spinal immobilization):
      - a. High velocity motor vehicle accident.
      - b. Fall greater than twenty (20) feet.
      - c. Gunshot wound or stabbing near the spine.
    2. Example of negative mechanisms (indicating no reasonable involvement of the spine):
      - a. Isolated trauma to an extremity.
    3. Uncertain mechanisms (requires further assessment):
    4. Falls from a standing position.
      - a. Falls less than five (5) feet.
      - b. Low speed motor vehicle accident with minimal-to-no vehicle damage.
  - B. Assessment of Spine for Pain and Tenderness:
    1. Ask the patient if there is pain to his/her spine.
      - a. If yes, immobilize.
      - b. If no, continue spinal assessment.
    2. Palpate the spine for tenderness, crepetus or deformity.
      - a. If yes, immobilize.

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- b. If no, continue spinal assessment.
- C. Assess Neurological Function through Motor Exam:
  - 1. Upper extremity motor assessment:
    - a. Finger abduction/adduction:
      - 1) Have patient spread fingers apart on both hands.
      - 2) Lightly squeeze index and ring fingers together while patient holds apart.
      - 3) Tension should be equal on both hands.
    - b. Finger/hand extension:
      - 1) Have patient hold hand out, fingers together.
      - 2) Support the arm at the wrist and apply downward pressure to the fingers while patient keeps hands outstretched.
      - 3) Tension should be equal on both sides.
  - 2. Lower extremity motor assessment:
    - a. Foot plantar flexion:
      - 1) Have the patient push down against your hands, like “pushing on a gas pedal.”
      - 2) Tension should be equal on both sides.
    - b. Foot/great toe dorsiflexion:
      - 1) Have the patient pull his/her toes/feet back against your hands.
      - 2) Tension should be equal on both sides.
- D. Assess Neurological Function through Sensory Exam:
  - 1. Ask if the patient feels weakness, numbness, tingling, etc.
    - a. Any abnormal sensations indicate the need for spinal immobilization.
  - 2. Upper extremity sensory assessment:
    - a. Test with sharp versus dull sensation to both upper extremities.
      - 1) Both sides should feel the same sensation.
  - 3. Lower extremity sensor assessment:
    - a. Test with sharp versus dull sensation to both lower extremities.
      - 1) Both sides should feel the same sensation.
- E. Determine Patients Reliability:
  - 1. Examples of reliable patient criteria:
    - a. Calm.
    - b. Cooperative.
    - c. Sober.
    - d. Alert.

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2. Examples of unreliable patient criteria:
  - a. Suffering from acute stress reaction.
  - b. Brain injury.
  - c. Intoxication.
  - d. Abnormal mental status.
  - e. Other distracting injuries.
  - f. Communications problems.

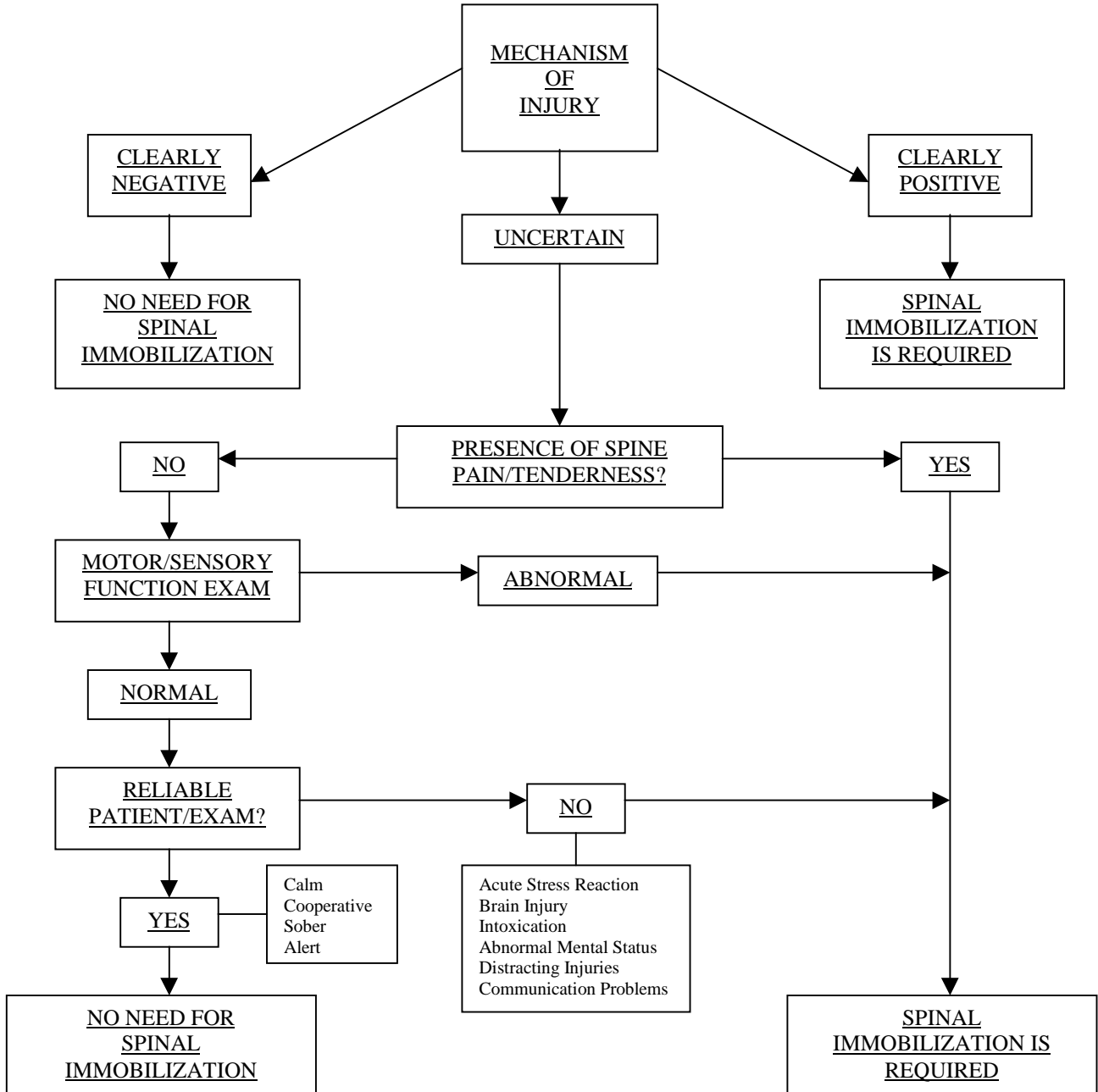
VII. Special Information

- A. Any positive mechanism or abnormal finding indicates the need for complete spinal immobilization. The use of clinical criteria for spine injury assessment requires knowledge, judgement, common sense and careful attention on the part of the examiner.

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**APPENDIX**

**SPINAL IMMOBILIZATION ASSESSMENT ALGORITHM**



Approved: \_\_\_\_\_ Date: \_\_\_\_\_

Approved as to Form: \_\_\_\_\_ Date: \_\_\_\_\_