

# WEST MICHIGAN REGIONAL PROTOCOL

## SOFT TISSUE AND ORTHOPEDIC INJURIES PROTOCOL

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**Purpose:** To provide the process for assessment and management of the patient with potential soft tissue and/or orthopedic injuries.

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### I. Assessment Information

#### A. History:

1. Past Medical History: medications, previous injury, and previous circulatory or neuro deficit.
2. Current History: mechanism of injury, weapon used, direction of force, treatment prior to arrival, any movement of patient.

#### B. Specific Objective Findings:

1. Area of pain or limited movement, obvious injury or deformity
2. Open wounds, lacerations, abrasions, avulsions, amputations, bleeding, bone fragments, air moving in/out of wound, etc.  
(Note estimated blood loss)
3. Closed injury, contusions, swelling, discoloration, pain
4. Obvious fracture, dislocation, crepitus, grating or deformity, muscle spasm, pain
5. Distal pulse, sensation, motor function

### II. Management

#### A. Utilize universal precautions.

#### B. If appropriate, stabilize cervical spine and immobilize patient.

#### C. Evaluate and maintain airway, provide for oxygenation and support ventilation as needed.

##### 1. Control bleeding that may obstruct airway.

#### D. Evaluate neck and chest for open wounds. If found:

##### 1. Cover wound with occlusive dressing.

##### 2. Patient with open neck wound should be placed in left lateral recumbent position with legs elevated 15 degrees.

##### 3. Patient with open chest wound must be monitored closely for occurrence of pneumothorax, tension pneumothorax, hemothorax and cardiac injury.

###### a) Monitor vital signs closely.

###### b) Frequent breath sounds evaluation.

###### c) Watch for JVD, tracheal deviation.

##### 4. If tension pneumothorax develops, perform pleural decompression per procedure.

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##### 5. Patient with open neck or chest wound requires aggressive airway management.

#### E. Assess and maintain adequacy of perfusion.

##### 1. Central and peripheral pulse checks to evaluate peripheral perfusion

##### 2. Monitor level of consciousness.

##### 3. Control all bleeding.

###### a. Utilize direct pressure.

###### b. Use dressing and bandaging as needed.

###### c. Elevate and immobilize for additional control.

###### d. Utilize pressure points only if direct pressure fails to control hemorrhage.

###### e. The use of tourniquet should only be considered as an absolute last resort to control hemorrhage.

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###### 1) When all other methods of control have been attempted and have failed.

###### 2) Tourniquet is placed as close to injured tissue as possible realizing all distal tissue will become severely ischemic.

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- 3) Wide band material is used and tightened until no bleeding is present distally.
  - 4) Record the time the tourniquet was applied.
  - 5) Medical Control is informed of tourniquet placement.
  - 6) Tourniquet is left in place until removal is directed by medical control.
4. Monitor vital signs for presence of hypotension (e.g.: hypovolemia).
  5. All avulsed or amputated tissue should be brought to hospital as soon as possible.
- F. **If patient is unstable**, immobilize major orthopedic injuries with stabilization on long backboard.
1. In cases with unstable pelvic fracture(s), a bed sheet may be folded to form a wide "belt" and tied around the pelvis to provide support; PASG [or a commercial pelvic support belt] may be used if available.
  2. In cases with bilateral femur fractures, or isolated femur fracture with an unstable pelvic fracture, apply PASG if available. If PASG are not available, stabilize the pelvis with a bed sheet tied in a wide belt around the pelvis (or a commercial pelvic belt) and draw traction to the end of the long backboard to stabilize the femur fractures. Do not use a traction splint if the patient has an unstable pelvis.
  3. Transport
  4. Obtain vascular access.
    - a. Administer 300ml fluid bolus (20ml/kg in peds) with repeat as needed, titrating to signs of adequate perfusion.
  5. For analgesia, refer to Pain Management Procedure
- G. **Possible orders post radio contact:**
1. Additional IV fluids
- H. **If patient is stable**, immobilize orthopedic injuries:
1. Evaluate neurovascular status.
  2. Apply dressing to open wounds.
  3. Pad splints for natural/functional positioning.
  4. Splint device should immobilize joints above and below injury.
  5. Manually immobilize injury in position that it is found, unless neurovascular status is compromised (see 7.).
  6. Secure splint device and evaluate distal neuro-vascular status.
    - a. Elevate and apply ice if time allows.
  7. If an angulated injury presents with absent distal circulation:
    - a. Apply gentle traction and move extremity towards a neutral position, moving only until circulatory status is improved.
    - b. Movement generally is not attempted when injury involves a joint unless directed by Medical Control.
    - c. If open injury with bone ends protruding, do not move, but splint in angulated position and cover with sterile dressing.
  8. Fracture of a femur may present with muscle spasm, bleeding, and angulation.
    - a. Manually immobilize with traction (except for isolated hip fracture), return limb to neutral position for use of traction splint.
  9. Secure immobilized patient to long backboard, if indicated.
  10. If suspected hip fracture,
    - a. If the patient is stable and there is no concern for other associated injuries (e.g. pelvis, spine or head) based on history or physical

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examination, the patient may be immobilized as appropriate to immobilize the hip and pelvis.

- b. If the patient is unstable and/or there is concern for other associated injuries (e.g. pelvis, spine or head) based on history or physical examination, the patient should receive complete spinal and lower extremity immobilization.

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- 11. Transport
- 12. Obtain vascular access, in patients with major injury or per Medical Control.
- 13. For analgesia, refer to Pain Management Procedure.

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- I. Possible orders post radio contact:**
  - 1. Additional IV fluids

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### **IV. Special Considerations**

- A. The patient with multiple injuries may not be able to localize all injuries. Evaluate full spine and extremities for injury.
- B. Do not allow a severe extremity injury to distract you from properly assessing patient for all life-threatening injuries.
- C. Contact Medical Control early for pain management procedures when appropriate.

5/25/98  
3/01  
4/10/2007

