



## CRUSH INJURY SYNDROME

**Effective:** January 1, 2025  
**Replaces:** January 1, 2021

### 1. Patient Care Goals

- 1.1. Recognizing traumatic crush injury mechanism
- 1.2. Minimize systemic effects such as rhabdomyolysis, hyperkalemia, acute kidney injury

### 2. BLS Treatment

- 2.1. Routine Medical Care – Adult **(700-S04)**
  - 2.1.1. **Oxygen – High Flow**, assist with ventilations as appropriate
- 2.2. Treat for signs and symptoms of shock as appropriate **(700-A10)**
- 2.3. Control bleeding as appropriate
- 2.4. Spinal Motion Restriction as appropriate **(700-M11)**
- 2.5. If pulseless, treat for cardiac arrest as appropriate **(700-A07)**

### 3. ALS Treatment

- 3.1. **Vascular Access (IV) or Vascular Access (IO)**, per procedure **(700-M13)**
  - 3.1.1. If accessible, establish a second vascular access
  - 3.1.2. **1,000ml Fluid bolus**
- 3.2. If chest is accessible, obtain **12 Lead ECG** (monitor for signs of hyperkalemia)
- 3.3. Pain management according to Routine Medical Care – Adult **(700-S04)**

### 4. Suspected hyperkalemia (peaked T-waves, absent P-waves, or widened QRS)

- 4.1. **Albuterol 5mg in 6ml normal saline** via nebulizer
- 4.2. **Sodium Bicarbonate 1mEq/kg IV**, delivered over sixty (60) seconds
- 4.3. **Calcium Chloride 1gm IV**
- 4.4. Flush the IV tubing well between injections when administering Calcium Chloride and Sodium Bicarbonate in sequence. When these drugs are mixed, a milky precipitate (calcium carbonate) may result

### 5. Special Considerations

- 5.1. Extensive areas of involvement such as lower extremities and pelvis
- 5.2. Crush syndrome may develop in one hour in a severe crush situation, usually requires compression from four (4) to six (6) hours
- 5.3. If a physician is needed at the scene for surgical extrication see **(Policy 616)**

### 6. Pertinent Assessment Findings

- 6.1. Mental Status/ GCS
- 6.2. Evaluation for fractures and potential compartment syndrome development (neurovascular status of injured extremity)
- 6.3. Examination of Spine
- 6.4. Evidence of additional trauma, potentially masked by with other painful injuries

### 7. Key Documentation Elements

- 7.1. Time of tourniquet application, if applied
- 7.2. Neurovascular status of any crushed extremity
- 7.3. EKG findings consistent with hyperkalemia
- 7.4. Amount of IV fluid administered