

# Southern Illinois Regional EMS System

## DD-8 CRUSH INJURY/SYNDROME

### ALS/ILS

#### Definitions:

Crush Injury Syndrome is the name given to the systemic manifestations of muscle crush injury and cell death. Crush injury syndrome should be suspected in patients with an extensive area of involvement such as the lower extremity and/or pelvis. It requires more involvement than just one hand or foot. Also, the crushing force must be present for some time before crush injury syndrome occurs. The syndrome can occur in as little as one hour for a severe crush injury, but usually takes **4-6 hours** of compression for the processes that cause crush injury syndrome to take place.

#### Management:

- Pre-extrication:
  - Patient Assessment and Initial Care protocol
  - Oxygen therapy as appropriate
    - 1-6 LPM by cannula: minimal distress.
    - 12-15 LPM by NRB mask: moderate/severe distress with signs of hypoxia.
    - 15 LPM by BVM: inadequate rate/effort, severe distress, unstable.
  - Maintain SpO<sub>2</sub> > 94%
  - Initiate IV/IO of NS at 20cc/hr. (TKO)
  - Contact Medical Control
- ALS:
  - Immediately prior to extrication:
    - Ensure IV fluids are prepared for possibility of bolus infusion.
    - Consult with Medical Control on extent and duration of involvement.
    - Medical Control can consider **Sodium Bicarbonate**:
      - Adult – **1mEq/kg of 8.4% solution** up to 100 mEq slow IVP:
      - Pediatrics – **1 mEq/kg of 4.2% solution** slow IVP.
  - Post-extrication:
    - Infuse IV fluids to maintain systolic BP between 90 mm/Hg –100 mm/Hg.
    - Suspect hyperkalemia if the patients presents with peaked T waves or prolonged QRS.
    - If QRS widens (>0.12 seconds) and hypotension develops:
      - Consider **Calcium Chloride 1 gram** slowly (over 5 minutes) if dysrhythmia continues.
    - If dysrhythmia continues, administer **Albuterol 2.5 mg** via nebulizer.