# Crush Syndrome

## Injury

### CRITERIA

Consider crush syndrome if the patient has a trapped extremity or torso with compression and compromise of vascular supply that has lasted more than 60 minutes.

### PROTOCOL

<table>
<thead>
<tr>
<th>EMR</th>
<th>Follow <em>General – Universal Patient Care/Initial Patient Contact protocol.</em></th>
<th>EMR</th>
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</thead>
</table>
| A   | Prior to extrication administer **20 mL/kg 0.9% Normal Saline IV/IO up to 1000mL Bolus**  
For prolonged extrication continue with **0.9% Normal Saline 10 mL/kg/hour IV/IO** | A |
| [I] | To the above IV/IO fluid, add **Sodium Bicarbonate 1 mEq/kg up to 50 mEq to 0.9% Normal Saline fluid bolus to first liter only** | [I] |
| [I] | For patient having any of the following ECG changes:  
- Peaked T waves  
- Wide QRS complex  
- Short QT interval  
- Absent P waves  
Administer in a second IV/IO line:  
- **Calcium Chloride 1 g slow IV/IO over 10-15 minutes** followed by **40 ml 0.9% Normal Saline flush**  
- **Sodium Bicarbonate 1 mEq/kg** and repeat in 10 minutes if no change and medications are available.  
- **Continuous Albuterol Sulfate (Proventil) (3 mL 0.083% Solution) via nebulizer or BVM** | [I] |
| MC  | **Contact medical control for persistent ECG abnormalities** | MC |
| EMT | Remove patient from entrapment and begin transport per *Administrative Policy – Trauma Field Triage.* | EMT |
| A   | Continue to administer **0.9% Normal Saline 5 mL/kg/hour IV** | A |

### PEARLS

- ✱ Initiate protocol treatment prior to removal of compression mechanism
- ✱ Consider any ECG change to be a sign of instability: any ECG change warrants immediate treatment with calcium chloride.
- ✱ Prioritize life over limb
- ✱ Albuterol in this case is only for ECG changes and for this reason is an I/P skill only for this indication