

POLICY: 554.82  
TITLE: Trauma and Traumatic Shock

EFFECTIVE: 07/01/2024  
REVIEW: 07/2027  
SUPERCEDES:

APPROVAL SIGNATURES ON FILE IN EMS OFFICE

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## TRAUMA AND TRAUMATIC SHOCK

- I. AUTHORITY  
Health and Safety Code, Division 2.5, California Code of Regulations, Title 22, Division 9
- II. PURPOSE  
To serve as a patient treatment standard for EMRs, EMTs, and Paramedics within their scope of practice.
- III. PROTOCOL

**Provider Key: F = First Responder/EMR      E = EMT      O = EMT Local Optional SOP**  
**P = Paramedic                                      D = Base Hospital Physician Order Required**

	F	E	O	P	D
<b>ASSESSMENT</b>	X	X	X	X	
<b>CONTROL OBVIOUS BLEEDING</b>	X	X	X	X	
<b>BLS AIRWAY:</b> okay if airway patent. Support ventilations with appropriate airway adjuncts.	X	X	X	X	
<b>ADVANCED AIRWAY:</b> if GCS is < 8 and not rapidly improving, consider: - SGA - or ETI			X	X X	
<b>PULSE OXIMETRY:</b> apply and monitor.		X	X	X	
<b>CAPNOGRAPHY:</b> apply and monitor.				X	
<b>OXYGEN:</b> if pulse oximetry < 94% signs of respiratory distress or hypoperfusion. High flow oxygen for traumatic shock and/or traumatic brain injury.	X	X	X	X	
<b>SPINAL MOTION RESTRICTION:</b> if indicated. <b><u>NOT</u></b> indicated for penetrating spinal trauma.	X	X	X	X	
<b>POSITION:</b> if patient is > 6 months pregnant, place patient in left lateral decubitus position. If long spine board is indicated, tilt spine board 30° left lateral.				X	
<b>WARM PATIENT:</b> trauma patients are very susceptible to hypothermia, even in a warm environment.	X	X	X	X	
<b>DRESS &amp; SPLINT:</b> as indicated.	X	X	X	X	
<b>ECG MONITOR:</b> lead placement may be delegated. Treat as indicated.				X	
<b>VASCULAR ACCESS:</b> IV/IO, 2 large bore IVs. Rate as indicated.				X	
<b>FLUID BOLUS:</b> administer NS boluses as indicated to a SBP range of ≥ 100. Use warm IV fluid if available. Reassess the patient after each bolus.				X	
<b>*TRANEXAMIC ACID:</b> 1 gm in 100 mL of NS infused over 10 minutes.				X	

<b>TEST FOR GLUCOSE</b>		X	X	X	
	F	E	O	P	D
<b>ORAL GLUCOSE:</b> consider administering oral glucose to patients who are awake and have an intact gag reflex.		X	X	X	
<b>D10:</b> infuse 100 mL IV/IO if blood glucose < 70 mg/dL. Recheck blood glucose 10 minutes post infusion. If blood glucose < 70 mg/dL infuse remaining 150 mL.				X	
<b>GLUCAGON:</b> If no IV/IO access and unable to tolerate oral glucose, give 1 mg IM if blood glucose < 70 mg/dL. Recheck blood glucose 10 minutes post injection. If blood glucose remains < 70 mg/dL, repeat 1 mg IM.				X	
<b>PAIN MANAGEMENT:</b> Refer to 554.44 PAIN MANAGEMENT				X	
<b>TRANSPORT:</b> per trauma triage protocol.	X	X	X	X	
<b>NEUROGENIC SHOCK</b>					
<b>PUSH DOSE EPINEPHRINE:</b> for hypotension – titrate to SBP ≥ 100 <ul style="list-style-type: none"> <li>Mix 1 mL of Epi 1:10,000 (0.1mg/mL) with 9 mL of NS = concentration of 1:100,000 (0.01 mg/mL)</li> <li>Label syringe “epinephrine 10 mcg/mL”</li> <li>0.5 – 1 mL (5 – 10 mcg) IVP every 1 – 5 minutes</li> </ul> If SBP does not stabilize ≥ 100 after two doses, consider epinephrine drip. Refer to 554.88 RX GUIDELINES.				X	
<b>HEAD – NECK – FACIAL TRAUMA</b>					
<b>POSITION:</b> place head injured patients in reverse Trendelenburg (elevate the head 15-20°) if patient exhibits no signs of shock. If patient is > six months pregnant, see positioning above.	X	X	X	X	
<b>CHEST TRAUMA</b>					
<b>NEEDLE THORACOSTOMY:</b> for tension pneumothorax, on affected side(s) between 2 <sup>nd</sup> & 3 <sup>rd</sup> intercostal space midclavicular line <b>OR</b> between 4 <sup>th</sup> & 5 <sup>th</sup> intercostal space midaxillary line. Place catheter just above the rib to avoid intercostal artery. Repeat if suspected catheter occlusion. Perform on both sides if unable to isolate affected side.				X	
<b>EXTREMITY TRAUMA</b>					
<b>HEMOSTATIC GAUZE:</b> if hemorrhage is not controlled by basic intervention.		X	X	X	
<b>TOURNIQUET:</b> if hemorrhage is not controlled by basic intervention.	X	X	X	X	
<b>DRESS &amp; SPLINT</b> <ul style="list-style-type: none"> <li>Splint dislocations in position found.</li> <li>Return injured extremities (non-dislocations) to anatomic position as resistance and pain allows.</li> <li>Check neurovascular status prior to &amp; after each extremity manipulation.</li> <li>Cover exposed bone with saline soaked gauze. Do not reduce exposed bone back into wound.</li> <li>Grossly angulated long bone fractures may be reduced with gentle unidirectional traction for splinting.</li> </ul>	X	X	X	X	
<b>TRACTION SPLINT:</b> for mid-shaft femur fracture. Check neurovascular status prior to and after each extremity manipulation.		X	X	X	
<b>ALL TRAUMA PATIENTS</b>					
<b>TRANSPORT:</b> per trauma triage protocol.	X	X	X	X	

\* TXA should be administered to trauma patients who meet the following criteria, unless otherwise indicated:

1. Systolic BP of < 100 mmHg.
2. Uncontrolled bleeding.
3. Time of injury < 3 hours.

## CONSIDERATIONS:

### NEUROGENIC SHOCK:

- Consider neurogenic shock when hypotensive, bradycardic, after possible spinal cord injury or TBI.

### HEAD – NECK – FACE:

- **Avulsed Tooth** - replace tooth in socket (if adult tooth and patient is conscious and alert) or place tooth in milk, normal saline, saline soaked gauze, or a commercially available "tooth saver."
- **Eye Injuries** - Stabilize or dress both eyes in place with saline soaked gauze or use cup or eye shield. Avoid applying direct pressure to eye and do not attempt to replace partially torn globe.
- **Impaled Object** - Immobilize and leave in place. Remove object only upon Base Physician order or if it interferes with CPR or if the object is impaled in the face, cheek, or neck and is compromising ventilation.

### CHEST

- **Impaled Object:** Immobilize object and leave in place. Remove object only upon Base Physician order or if object interferes with CPR.
- **Flail Chest:** Stabilize chest. Observe for tension pneumothorax. Consider assisted ventilation.
- **Open Chest Wound:** Cover wound with occlusive dressing. If patient is being artificially ventilated, dress wound loosely (do not seal). Continuously reevaluate patient to watch for the development of a tension pneumothorax.
- **Cardiac Tamponade:** If the patient has a systolic BP < 100, administer 250 mL fluid boluses as indicated. Reassess the patient after each bolus.
- **Cardiac Contusion:** Monitor for dysrhythmia. Refer to Cardiac GUIDELINES.

### ABDOMINAL

- **Impaled Object** - Immobilize and leave in place. Remove object only upon Base Physician order or if object interferes with CPR.
- **Eviscerating Trauma** - Cover eviscerated bowels and organ with saline soaked gauze. Do not attempt to replace bowels or organs into the abdominal cavity.
- **Genital Injuries** - Cover genitalia with saline soaked gauze. If necessary, apply direct pressure to control bleeding.
  - Treat genital amputation the same as extremity amputation, refer to Extremity

### EXTREMITY

- **Amputations:** If partial amputation, splint in anatomic position and elevate the extremity. Wrap completely amputated parts in saline soaked gauze, place in container or bag. Place container or bag in ice, if possible. **Do not place amputated part directly on ice.**
- **Tourniquet application:**
  - The tourniquet should be applied onto bare skin to prevent slipping.
  - Place the tourniquet as low on the limb as possible, above the wound and above the joint.
  - A 2<sup>nd</sup> tourniquet may be placed just above the first if bleeding is not controlled with a single tourniquet. If an extremity amputation, the 2nd tourniquet can be placed just above the wound.
  - The tourniquet is tightened with the aim of stopping a distal pulse.
  - The tourniquet is clearly marked including time and date of application.