



**Notes/Definitions**

- Prioritize life-threatening conditions and initiate appropriate care while preventing hypothermia.
- Assess burn depth, total body surface area (TBSA) involvement, and the presence of inhalation injury or associated trauma. Do not include superficial burns (first-degree) burns when calculating TBSA.

**Base Hospital Contact for Burn Unit Destination if criteria met**

**BLS Interventions**

- Refer to OCEMS BLS Standing Orders SO-B-001.
- Break contact with causative agent.
- Remove jewelry and clothing from the area involved.
- Begin flushing burns with copious amounts of cool running water (target 20 minutes; do not delay transport).
- Keep the patient warm and prevent hypothermia.

Thermal Burns

- For burns <10% BSA, stop burning by flushing with cool running water or saline.
- For burns >10% BSA, in addition to cool running water, cover with dry dressing and keep patient warm.
- Do not allow patient to become hypothermic.

Toxic Inhalation (e.g. CO exposure, smoke, gas)

- Move patient to a safe environment.
- 100% O2 via mask.
- Monitor respiratory status.

Chemical Burns

- Remove contaminated clothing.
- If dry chemicals, brush and flush with copious amounts of cool running water.
- If liquid, flush with copious amounts of cool running water.

Tar Burns

- Do not remove tar.
- Cool with copious amounts of cool running water.

**ALS Interventions**

- Cardiac monitoring.
- 12-lead ECG if applicable.
- Obtain IV / IO (in non-burned area).
- Obtain capnography.
- Consider advanced airway management.
- Treat for respiratory distress, wheezing, bronchospasms, or suspected smoke inhalation:
  - ▶ **Albuterol 6 mL (5 mg)** – continuous nebulization
- Treat for pain choosing one of the following to administer:
  - ▶ **Fentanyl 50 mcg IV / IM** – may repeat once after 3 minutes, hold for SBP < 90
  - ▶ **Fentanyl 100 mcg IN** – may repeat once after 3 minutes, hold for SBP < 90
  - ▶ **Morphine sulfate 5 mg (or 4 mg CARPUJECT™) IV / IM / IO** – may repeat once after 3 minutes, hold for SBP < 90

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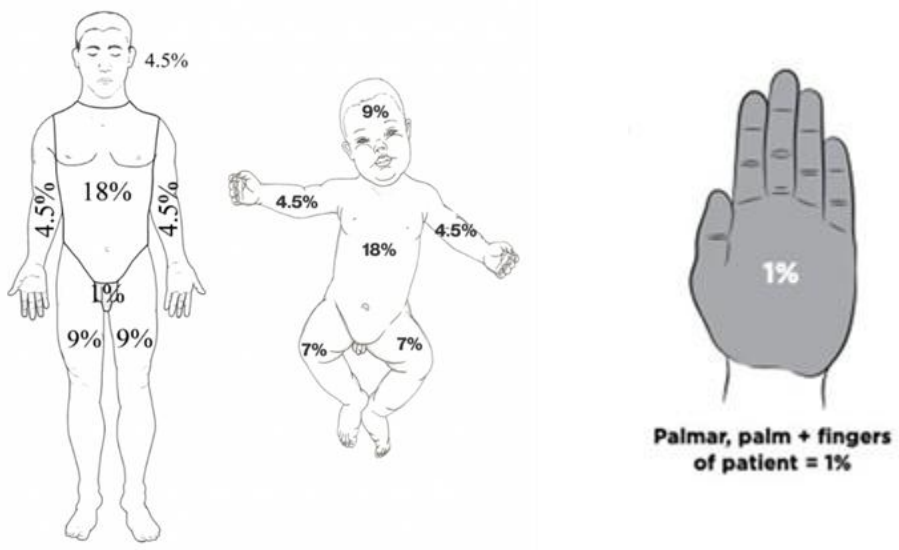
- ▶ **Ketamine 0.1 mg / kg IV** – may repeat once after 15 minutes, max single dose 10 mg
- ▶ **Ketamine 0.5 mg / kg IM** – may repeat once after 15 minutes, max single dose 50 mg
- ▶ **Ketamine 1 mg / kg IN** – once, max dose 100 mg
- ▶ **Ketorolac 15 mg IV / IO / IM** – once
- Treat for hypotension (Systolic BP  $\leq$  90) or signs of shock:
  - ▶ **Normal Saline 250 ml IV / IO bolus** – may repeat up to 1 liter to maintain adequate perfusion
  - ▶ **Push Dose Epinephrine 1 mL (10 mcg) IV / IO** – every 3 minutes, titrate to SBP  $>$  90

**Transport Consideration**

- **Base Hospital Contact** required if any of the following criteria are met:
  - Suspected inhalation injury
  - Partial-thickness (second-degree) burns  $>$ 10% total body surface area (TBSA)
  - Any full-thickness (third-degree) burns
  - Burns involving the face, hands, feet, genitalia, perineum, or major joints
  - Electrical burns due to high voltage ( $\geq$  1000 volts), including lightning injuries
  - Chemical burns
  - Circumferential burns
  - Burns in patients with significant preexisting medical conditions that may complicate recovery (e.g. diabetes, renal failure, cardiac or pulmonary disease)
  - Burns with associated trauma where the burn injury increases risk of morbidity or mortality
- ALS escort to nearest appropriate ERC or as directed by the Base Hospital.

**Additional Considerations**

- Assessment utilizing the Rules of 9 and Palmar Method (patient's palm), refer to OCEMS PR-003.





**ORANGE COUNTY EMERGENCY MEDICAL SERVICES**

Prehospital Standing Orders / Treatment Guidelines

**BURNS (THERMAL, ELECTRICAL, CHEMICAL)**

**(Adult / Adolescent)**

#: E-005

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- Suspected carbon monoxide toxicity can cause inaccurate O2 saturation readings because the pulse oximeter cannot differentiate between carbon monoxide and oxygen molecules.
- Electrical burns may cause significant internal injury with minimal external findings. Assess for cardiac dysrhythmia and associated trauma.
- Chemical burns, some chemicals can react with water and may worsen the burn or produce hazardous fumes (e.g., sodium, phosphorus, acetyl bromide, aluminum carbide, silicon tetrachloride).
- Patients with burn injuries are at an increased risk of hypothermia. Avoid prolonged cooling and keep the patient covered and warm.
- Circumferential burns of the chest and extremities may impair ventilation or circulation.
- 20CRW (20 minutes of cool running water) within the first three hours prevents worsening injury, reduces pain, lowers risk of infection, and improves long-term outcomes.

**Base Hospital**

- If an airway cannot be secured, consider transport to the nearest ERC.
- Inhalation of smoke generated from burning plastics or petroleum products may produce cyanide toxicity. If cyanide toxicity is known or suspected, consider treatment with:
  - ▶ **Hydroxocobalamin 5 gm in 200 mL normal saline IV - once**

**Cross References:**

SO-B-001 BLS Standing Orders

SO-M-035 Respiratory Distress

SO-M-045 Shock (Symptomatic Hypotension)

PR-003 Estimate of Body Surface Area Burned and Disposition

PR-030 Endotracheal Intubation (including ET/CO2)

PR-070 Ketamine Analgesia

PR-130 Hydroxocobalamin for Cyanide Toxicity

PR-135 Supraglottic Airway Device Placement – Adult/Adolescent

PR-230 Preparation and Dosing of Push Dose Epinephrine – Adult/Adolescent

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