



Burns

Trauma

Austin County
EMS Protocol & Guideline

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Burns can be generally categorized as three types: Chemical, Electrical, and Thermal. Each offers a similar pathophysiology of tissue damage; however the medical consequences can be dramatically different. The eyes are extremely vulnerable to chemical burns. Electrical burns are mostly internal, focusing on the heart. Voltage below 400 volts focuses damage on the heart, while higher voltage causes internal burns. Thermal burns can be internal (inhalation) and external. The focus in all burns should be provider safety, cooling the burn, while protecting body heat. Shock in the early stages of a burn is not generally due to a burn, look for other causes.

EMT

- Airway/Oxygen appropriate for condition
- Stop the burning process.
- Dress wounds.
- 2nd or 3rd degree <10% BSA use wet sterile dressing.
- 2nd or 3rd degree >10% BSA use dry sterile dressing.
- Identify potential entry and exit wounds
- Remove any items that constrict with swelling. (Rings). Do not remove items that have bonded with skin. Cut from around these areas.
- Mark for swelling
- Brush off dry chemical and flush with copious amounts of water.
- Flush other chemicals with copious amounts of water.
- Eyes should be flushed for a minimum of 20 minutes.
- Maintain body heat – Wrap with burn sheet or blanket

Critical Burns

- 2° > 30% BSA
- 3° > 10% BSA
- Respiratory injury, facial burn
- Associated injuries, electrical or deep chemical burns, underlying PMH (cardiac, DM), age < 10 or > 50 yrs.

AEMT

- Establish IV of Normal Saline
- Early intubation if airway compromise develops or is expected to develop.
- Suspect respiratory compromise if facial burns, sooty sputum and/or singed facial hair is present

Paramedic

- Pain Management: **Morphine Preferred**
- **Morphine** 2 to 10 mg IVP, may repeat to a total dose of 20 mg as long as BP remains above 100 systolic.
- May administer **Midazolam** 2 mg – 4 mg IVP, may repeat to a total dose of 10 mg as needed.
- **Ketamine** 0.1-0.25 mg/kg IV/IO **OR** 0.5 -1 mg/kg IM: may repeat every 10 minutes as needed – **For severe pain**
- **RSI Procedure (If needed)**

Pearls

- First-degree burns (Superficial)—affect only the outer layer of the skin (epidermis), causing pain and redness
- Second-degree burns (Partial Thickness)—extend to the layer below the epidermis (the dermis), causing pain, redness, and blisters that may ooze
- Third-degree burns (Full Thickness)—involve all layers of the skin and may also damage the underlying bones, muscles, and tendons. The burn site appears pale, charred, or leathery and there is generally no sensation in the area because the nerve endings are destroyed.
- Infection is the most common complication of burns and is the major cause of death in burn victims. More than 10,000 Americans die every year from infections caused by burns.
- Compromised immune system, functional or cosmetic damage (reconstructive surgery may be necessary), increased risk of developing cancer at the burn site, carbon monoxide poisoning (in the case of a fire), cardiopulmonary arrest are just a few factors facing the burn patient.
- First-degree burns generally heal on their own in 10 to 20 days if no infection develops.
- In rare cases, first-degree burns spread more deeply to become second degree (this spread is caused by infection).