

## BURNS

### SIGNS & SYMPTOMS:

1. Reddened skin that blanches with pressure
2. Blistering; edema
3. Broken epidermis; weeping surface
4. Dry, pale, white or charred skin
5. Wheezing, dyspnea, hoarseness, stridor
6. Singed facial hair, sooty sputum or phlegm
7. Burning sensation in upper airway or chest
8. Pain, tingling, hyperesthesia, soothed by cooling; 3rd degree may be painless

### OBTAIN HISTORY OF:

1. PMH/Meds/Allergies
2. Recent illness or trauma
3. Duration and concentration of exposure
4. Type of chemical or toxic exposure
5. Enclosed or open space exposure
6. Electrical contact (AC/DC, amps, volts)
7. Presence of fire, smoke, or distinctive odors

### PRECAUTIONS:

1. Assess scene for safety. Do not allow yourself to become a victim and do not attempt any rescue that you have not been trained in and do not have the proper safety equipment for.
2. Consider the potential for trauma and take spinal precautions in all burn cases, unless it can be ruled-out by mechanism or history. *In essentially all cases, traumatic injuries take priority over burn care.*
3. Consider the potential for inhalation injury in all victims of closed-space injury, or those who have inhaled fumes or steam. Cyanide and carbon monoxide are commonly present in closed-space fires.
4. The presence of carbon monoxide can cause pulse oximetry readings to be artificially high. Interpret with extreme caution.
5. Injuries caused by electricity are usually more severe than the external wounds. Hidden injury to muscle, nerves and the CNS may exist. Vertebral fractures are frequent.
6. Do not break blisters or apply ointments.

### FIRST RESPONDER:

1. Extinguish and/or smother fire. Remove patient from heat source, using non-conductive material for electrical burns.
2. Assess and support ABCs.
3. Begin high flow supplemental oxygen via mask.
4. Assess vital signs (BP, pulse, respirations, O<sub>2</sub> sats) minimally every 10 min; more often if unstable.
5. Remove clothing and jewelry.
6. If burn gel has been applied prior to your arrival, do not remove gel. Do NOT apply more gel.
7. Complete secondary survey for other trauma.
8. Assess burns for type, depth, total body surface area (TBSA) using either the Rule of Nines or the Rule of Palm (patient's palm is approximately 1% of their TBSA).
9. Minor burns (< 9% TBSA) may be treated with wet dressings.
10. Cover major burns with a dry sterile sheet. Do not use wet dressings.
11. Do not allow patient to become chilled.

### BASIC LIFE SUPPORT:

1. If patient is unresponsive and has no gag reflex, secure airway with a Combi-Tube.
2. Initiate ECG monitoring in electrical, inhalation, hydrofluoric acid, fluorine gas, and major burns, and in patients  $\geq 40$  years, or those with chest pain or difficulty breathing.

**BASIC-IV LIFE SUPPORT:**

1. For major burns ( $\geq 9\%$  TBSA), establish IV of NS as follows: (watch for 3<sup>rd</sup> Spacing, if present, stop IV immediately).
  - A) < 12 years: TKO and consult with medical control for higher rate
  - B) 12 - 15 years: run @ 250 cc/hr
  - C) 15 + years: run @ 500 cc/hr

**INTERMEDIATE:**

1. Morphine Sulfate 2 - 4 mg IV every 10 minutes to a maximum of 12 mg.
2. Contact Medical Control for additional doses.
3. Transport rapidly to a Burn Center as appropriate. (Regions and HCMC)

**PARAMEDIC/RN:**

1. Consider Toradol 30 mg IV or 60 mg IM.
2. Consider Dilaudid 0.5 – 2mg IV/IM titrated to response up to 2mg if patient allergic to morphine.
3. Contact medical control about Calcium Chloride in suspected hydrofluoric acid burns.

**SPECIAL BURN CONSIDERATIONS:** *In addition to above and as appropriate:*

1. Chemical burns:
  - A. Wash with copious amounts of water or NS for 20 min.
  - B. If eyes are involved, irrigate with copious amounts of NS until the patient reaches the receiving hospital.
  - C. Dry lime should be brushed away as much as possible before flushing with water.
  - D. Carboic acid (phenol) does not mix w/ water. When available, use alcohol for the initial wash of unbroken skin followed by a steady water flush.
2. Inhalation burns:
  - A. Reassess frequently.
  - B. Consider albuterol neb for bronchospasm and the need for early intubation.
  - C. If airway complications arise or are of concern, stop at the closest hospital. (Ex: Pt may benefit from early RSI)
3. Tar burns:
  - A. Cool with water until burning is stopped.
  - B. DO NOT attempt to remove tar from skin.

**PEDIATRIC CONSIDERATIONS:**

1. Consider transporting burned children to the closest most appropriate facility with the capability of treating burn children. (Regions and HCMC)
2. Consider IV therapy in critically burned patients < 12 years only if transport time to the most appropriate medical facility is > 10 minutes.

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