Burns

NOTE: When calculating Total Body Surface Area (TBSA) do not include superficial burns (erythematous tissue) in the TBSA

BURN SEVERITY DETERMINATION/DEFINITIONS
SUPERFICIAL - NOT counted in TBSA
Dry, red, easily blanching, sometimes painful (i.e., sunburn)
SUPERFICIAL PARTIAL THICKNESS – counted in TBSA
Moist, red, blanching, blisters, very painful
DEEP PARTIAL THICKNESS – counted in TBSA
Drier, more pale, less blanching, less pain
FULL THICKNESS – counted in TBSA
Dry, leathery texture, variable color (white, brown, black), loss of pin prick sensation

GENERAL TREATMENT:

1. Follow **General Pre-Hospital Care-Treatment Protocol**.
2. Pediatric patients (≤ 14 years of age) utilize MI MEDIC cards for appropriate medication dosage. When unavailable utilize pediatric dosing listed within protocol
3. If evidence of possible airway burn, consider proactive airway management per **Airway Management-Procedure Protocol.**
4. Administer 100% oxygen to all patients rescued from a confined space fire (i.e., building, automobile) regardless of pulse oximetry reading.
5. Determine burn extent & severity (rule of nines, or palm = 1%).
6. Keep patient warm and avoid hypothermia.
7. Assess and treat for associated injuries.
8. If burns are associated with unconsciousness or respiratory burns, or cyanide poisoning, refer to **Cyanide Exposure-Special Operations Protocol.**

THERMAL BURNS:

1. Stop the burning process. Remove smoldering and non-adherent clothing.
2. Consider potential for secondary contamination .
3. Assess and treat associated trauma.
4. Remove any constricting items.
5. Cover burns with dry clean dressings to prevent hypothermia.

CHEMICAL BURNS:

1. Protect personnel from contamination.
    a. Identify chemical agent when possible.
2. Remove all clothing and constricting items.
3. Decontaminate patient prior to transport, brushing off dry chemicals prior to irrigation refer to **Hazard Contaminate Patient-Special Operations**.
4. Evaluate for systemic symptoms, which might be caused by chemical contamination.
5. Notify receiving hospital of possible chemical contamination.
6. Cover burned area in clean, dry dressing for transport.

ELECTRICAL INJURY:

1. Protect rescuers from live electric wires.

2. When energy source is removed, remove patient from electrical source.
3. Treat associated injuries, provide spinal precautions per **Spinal Injury Assessment-Treatment Protocol** when indicated.
4. Assess and treat contact wound(s).
5. Monitor patient ECG for possible arrhythmias. Treat as per specific arrhythmia protocol.

FOR ALL TYPES OF BURNS:

1. Obtain vascular access if indicated for pain management or fluid therapy per **Vascular Access and IV Fluid Therapy-Procedure Protocol**.
2. For patients with hypotension administer **LR** (**NS** if **LR** not available) IV/IO fluid bolus
   a. Adults: up to 1 liter
   b. Pediatrics: up to 20 ml/kg
3. If patient remains hypotensive consider other underlying causes for hypotension and contact Medical Control prior to further fluid resuscitation.
4. For non-superficial burns without hypotension and BSA > 10% deep partial thickness (second degree) or any full thickness (third degree) administer fluids according to age
   a. <1 year Contact Medical Control
   b. 1-5 years old: 125 mL/hour
   c. 6-13 years old: 250 mL/hour
   d. ≥14 years: 500 mL/hour
5. Administer analgesic medication. Refer to **Pain Management-Procedure Protocol**.

TRANSPORT:

1. Follow local MCA Transport Protocol.
2. Special Transport Considerations
   a. If severe airway/breathing compromise that cannot be managed transport to the closest facility.
   b. Burn patients that also meet the field trauma triage criteria (refer to **Adult/Pediatric Trauma Triage-Treatment Protocol**) should be transported to the closest appropriate trauma facility per MCA Transport Protocol.
   c. Consider transport directly to burn center if:
      i. Full thickness burns
      ii. Partial thickness ≥10% TBSA
      iii. Any deep partial or full thickness burns involving the face, hands, genitalia, feet, perineum, or over any joints
      iv. All patients with suspected inhalation injury
      v. Circumferential burns
      vi. All chemical injuries
      vii. All high voltage (≥1,000V) electrical injuries
      viii. Lightning injury
   d. Consider air ambulance transportation for long transport times, pain control requiring deep sedation, and airway concerns that might necessitate advanced airway management.

Protocol Source/References: National Association of State EMS Officials (2016); American Burn Association (2022) Guidelines for Burn Patient Referral.