Burns

**History**
- Type of exposure (heat, gas or chemical)
- Inhalation injury
- Time of injury
- Other trauma
- Past medical history
- Medications

**Signs and Symptoms**
- Burns, pain, or swelling
- Dizziness
- Loss of consciousness
- Hypotension/shock
- Airway compromise or distress could be presented as hoarseness or wheezing

**Differential**
- Superficial – red and painful (do not include in TBSA)
- Partial thickness – blistering
- Full thickness – painless with charred or leathery skin
- Chemical injury
- Thermal injury
- Radiation injury
- Blast injury

**Assess burn injury severity**

- **Minor**
  - < 20% TBSA partial or full thickness burns
  - No inhalation injury
  - GCS > 13
  - Remove rings, bracelets, and constricting items
  - Apply clean dressing to burn area
  - Consider, IV
  - Cardiac monitor
  - Normal Saline bolus
    - ≤ 5 years – 125ml
    - 6-13 years – 250ml
    - ≥ 14 years – 500ml
  - For pain consider, Fentanyl
  - Trauma Triage if indicated
  - Transport to facility of choice. Consider transporting to Burn Center for burns to the face, hands, perineum, or feet and circumferential burns
  - Notify receiving facility. Contact Base Hospital for medical direction

- **Major**
  - ≥ 20% TBSA partial or full thickness burns, burns with suspected inhalation injury or high voltage electrical burns
  - Remove rings, bracelets, and constricting items
  - Apply clean dressing to burn area
  - Maintain airway
  - Establish IV/IO
  - Consider, one large bore IV in each AC
  - Cardiac monitor
  - EtCO₂ monitoring
  - Normal Saline bolus
    - ≤ 5 years – 125ml
    - 6-13 years – 250ml
    - ≥ 14 years – 500ml
  - For pain consider, Fentanyl
  - Trauma Triage if indicated
  - Transport to appropriate facility
  - Burns with trauma to Trauma Center
  - Burns only to Burn Center

**Approved Burn Receiving Centers**
- St. Francis – San Francisco
- UC Davis – Sacramento

**Effective April 2024**

**Normal Saline bolus**
- ≤ 5 years – 125ml
- 6-13 years – 250ml
- ≥ 14 years – 500ml

**For pain consider**
- Fentanyl
Pearls

- Airway burns may lead to rapid compromise of the airway and can be identified by soot around the nares or mouth or visible burns or edematous mucosa in the mouth.
- Early intubation is required when the patient experiences significant inhalation injuries. If the patient requires advanced airway management that cannot be quickly achieved in the field, transport to the nearest facility for stabilization prior to transfer to the Burn Center. Do not wait for a helicopter if airway patency is a critical concern.
- Contact Burn Center prior to transport to confirm bed availability.
- For major burns, do not apply wet dressings, liquids or gels to burns unless it is to remove whatever caused the burn (i.e. dry chemical agent, etc.). Cooling large burns may lead to hypothermia.
- Burn patients are often trauma patients. If burns are evident in the presence of trauma, follow trauma triage guidelines and transport to trauma center if activation criteria is met.
- Circumferential burns to extremities are dangerous due to potential vascular compromise secondary to soft tissue swelling.
- Never administer IM pain medication into a burned area.
- IV/IOs may be placed through burns as a last resort.

Rule of Nines

- Seldom will you find a complete isolated body part that is injured as described in the Rule of Nines. More likely, it will be portions of one area, portions of another, and an approximation will be needed.
- For the purpose of determining the extent of serious injury, differentiate the area with minimal (superficial) burn from those of partial or full thickness burns.
- When calculating TBSA of burns, include only partial and full thickness burns; do not include superficial burns in the calculation.

Burn Assessment Terminology

<table>
<thead>
<tr>
<th>Approved Terminology</th>
<th>Old Terminology</th>
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<tbody>
<tr>
<td>Superficial</td>
<td>1st degree</td>
</tr>
<tr>
<td>Partial thickness</td>
<td>2nd degree</td>
</tr>
<tr>
<td>Full thickness</td>
<td>3rd degree</td>
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</tbody>
</table>

Burn assessment should be documented and reported using only approved terminology.