# Assessment and Initial Care of Burn Patients

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Prepared in conjunction with the American Burn Association

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## 1. Stop Further Injury
- A. Remove victim from source
- B. Extinguish or remove burning clothing
- C. Chemical burns
  1. Continuous, copious water lavage
  2. Prolonged eye irrigation
  3. Remove all contaminated clothing
  4. Avoid self-injury; wear gloves and protective clothing

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## 2. Maintain Ventilation
- A. Administer humidified 100% oxygen by mask to treat possible carbon monoxide poisoning
- B. Examine airway for signs of inhalation injury
  1. Singed vibrissae
  2. Carbonaceous material in upper airway
  3. Edema or inflammatory change in oral pharynx/upper airway

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## 3. CPR if No Pulse or Heart Action Is Detectable
- C. Maintain airway
  1. Endotracheal intubation
    - Associated neck trauma
    - Associated significant chest wall injury (e.g., flail chest)
    - Acute airway edema/severe inhalation injury
  2. Mechanical ventilation if intubated

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## 4. History
- A. Circumstances of injury
- B. Pre-existing illnesses
- C. Medications
- D. Allergies
- E. History of enclosed space fire
- F. History of alcohol/drug use

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## 5. Physical Examination
- A. Check for associated injuries
- B. Estimate extent and depth of burn (Rule of Nines—child's head is disproportionately larger than adult head)
- C. Weigh the patient

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## 6. Intravenous Fluid Therapy
- A. Required by patients with burns greater than 20% of total body surface
- B. Secure a large-bore IV cannula in an adequate vein
- C. Place indwelling urethral catheter and attach to closed drainage system
- D. Estimate fluid needs for first 24 hours postburn
  - Adults: 2-4 mL lactated Ringer's solution/kg body weight percent of burn plus normal maintenance fluid
  - Children less than 3 years old: 4 mL lactated Ringer's solution/kg body weight percent of burn plus normal maintenance fluid
- E. Plan on administering one-half of calculated volume in first 8 hours postburn, but adjust infusion rate to obtain: 1. 30-50 mL of urine per hour in patients weighing more than 30 kg 2. 1 mL urine per hour/kg body weight in patients weighing less than 30 kg

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## 7. Maintenance of Peripheral Circulation in Patients with Circumferential Extremity Burns
- A. Remove rings and bracelets
- B. Clinical signs of impaired circulation include:
  1. Cyanosis
  2. Impaired capillary refill
  3. Progressive neurologic signs (e.g., paresthesias and deep tissue pain)
  4. Doppler determination of peripheral pulses
- C. Escharotomy
  1. No anesthesia needed
  2. Place incision in midlateral and/or midmedial line of limb
  3. Must carry incision across involved joints
  4. Incise only to depth that allows cut edges of eschar to separate
- D. Fasciotomy is usually indicated only when injury involves subfascial tissues (recommended as an operating room procedure)

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## 8. Nasogastric Tube
- A. Place tube and attach to suction if there is nausea, vomiting, or distention, or if burns involve more than 25% of total body surface

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## 9. Analgesic Medication
- A. Give only intravenously and in small doses

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## 10. Tetanus Prophylaxis as Dictated by Patient’s Immunization Status

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## 11. Initial Burn Wound Care
- A. Cleanse and debride loose tissue
- B. Cover burns with dry sterile dressing or cover with a clean sheet
- C. If patient is to be retained, begin topical therapy

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## 12. Burn Size

<table>
<thead>
<tr>
<th>Criteria for Burn Center Referral</th>
<th>Burn Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;20%</td>
<td>Total</td>
</tr>
<tr>
<td>&gt;10</td>
<td>Third degree</td>
</tr>
<tr>
<td>&lt;10</td>
<td>Age</td>
</tr>
<tr>
<td>Present</td>
<td>Airway or inhalation injury</td>
</tr>
<tr>
<td>Present</td>
<td>Electrical/lighthing injury</td>
</tr>
<tr>
<td>Present</td>
<td>Significant associated injury or pre-existing disease</td>
</tr>
<tr>
<td>Present</td>
<td>Deep burns of face, hands, feet, perineum, or major joints</td>
</tr>
<tr>
<td>Present</td>
<td>Suspected child abuse</td>
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<tr>
<td>Present</td>
<td>Chemical burns</td>
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</tbody>
</table>

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## 13. Guidelines, Admission, and Transfer Criteria
- Criteria should be modified according to the judgment, interest, and experience of the attending physician and the burn care resources available at the institution involved

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