Ascension Columbia St. Mary's Regional Burn Center

INITIAL BURN ASSESSMENT & TREATMENT

Burn Center Referral Criteria

A burn center may treat adults, children, or both.
Burn injuries that should be refereed to a burn center include:

1. Partial-thickness burns greater than 10% total body surface (TBSA).
2. Burns that involve the face, hands, feet, genitalia, perineum, or major joints.
3. Third-degree burns in any age group.
4. Electrical burns including lightning injury.
5. Chemical burns.
6. Inhalation injury.
7. Burn injury in patients with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality.
8. Any patient with burns and concomitant trauma (such as fractures) in which the burn injury poses the greatest risk of morbidity or mortality. In such cases, if the trauma poses the greater immediate risk, the patient may be initially stabilized in a trauma center before being transferred to a burn unit. Physician judgement will be necessary in such situations and should be in concert with the regional medical control plan and triage protocols.
9. Burned children in hospitals without qualified personnel or equipment for the care of children.
10. Burn injury in patients who will require special social, emotional, or rehabilitative intervention.

Excerpted from guidelines for the Operation of Burn Centers (pp 79-86), Resources for Optimal Care of the Injured Patient 2006 Committee on Trauma, American College of Surgeons.

ASSESSMENT

1. Examine Patient

- **Assess for other trauma**
- Obtain circumstances surrounding burn injury and past medical history
- Burns do not alter LOC. If LOC is altered, look for another cause: smoke inhalation, anoxia, head injury, etc.

2. Determine Degree of Burn

- 1st degree: light to bright red, painful, sunburn-appearing
- 2nd degree (partial thickness: bright red, moist, painful)
- 3rd degree (full thickness): white, brown or black, may appear dry, charred or leathery and no sensation

3. Estimating Extent of Burn: Use rule of 9's for adults

Scattered burns: Patient's hand and fingers = 1% TBSA
Infants/Small Children: Head = 18%, each arm = 9%, each leg = 14%,
Chest = 18% and Back = 18% (Essentially taking 4% from each leg, and 1% from perineum to add to the head)

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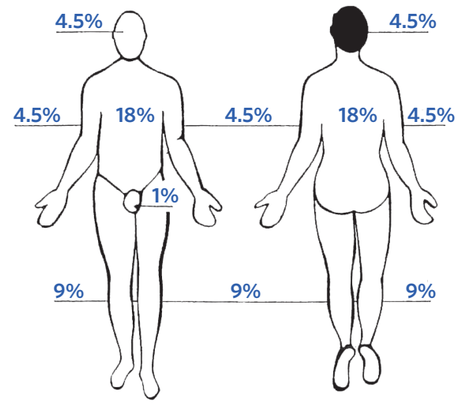
TOTAL BODY SURFACE AREA (TBSA)

RULE OF 9's



TREATMENT

Minor Burns

- Cool for 3-5 minutes with tap water for pain relief if burn is ≤ 5% TBSA
- Gentle cleansing with mild soap and water
- Dressings per institutional protocol
- Follow-up care as needed

Severe Burns

Airway

- Maintain airway and use oxygen as needed
- Assess for inhalation injury

Fluid Resuscitation

- Secure veinway: large bore peripheral IVs
- Small frequent doses of IV narcotics as needed for pain control
- Use Lactated Ringers, PlasmaLyte or Normosol
- IV rates during pre-hospital management and primary survey in the hospital
  - ≤ 5 years 125 mL/hr.
  - 6-13 years 250 mL/hr.
  - ≥ 14 years 500 mL/hr.
- IV rates during secondary survey after TBSA assessment

All burns (excluding electrical)

- Adults & Children ≤ 14 years = 2mL x kg x % TBSA
- Children < 14 years = 3mL x kg x % TBSA
- Infants and Children ≤ 30 kg = 3mL x kg x % TBSA
  Plus D5LR at maintenance rate

Electrical Injury

- All ages = 4mL x kg x % TBSA
- Plus D5LR at maintenance rate for infants and children ≤ 30 kg

Urine Output: Goals

- Adults & children ≤ 14 yrs (> 30 kg.) 0.5 mL/kg/hr. (or 30-50 mL/hr.)
- Children ≤ 30 kg 1 mL/kg/hr.

Increase or decrease fluids by 1/3 to reach goals

Chemical Burns

- Brush dry chemicals off prior to irrigation
- Copious, continuous irrigations with water to the wound
- Call or use resources for specific treatment of chemical involved

Electrical Burns

- Cardiac monitoring
- Examine for electrical contact wounds
- IV rate to maintain urinary output at 1 mL/kg/hr. (75-100 mL/hr. for adults)
- Injury could be responsible for arrhythmias, hypertension, seizures, fractures and renal failure

Inhalation Injury

- Suspect if fire occurred in closed space (e.g. house fire)
- Maintain airway and supply 100% oxygen
- Intubate for evidence of, or risk for airway compromise
- If ET tube < 7.5 consider early exchange to larger tube
- Signs of elevated carboxyhemoglobin levels include: altered mental status or headache
- If inhalation injury is suspected and bicarb is < 16 consider cyanide toxicity and discuss need for treatment with burn surgeon
- **Include ABGs and carbon monoxide level with labs**

General Care

- Pulse, blood pressure and urine output hourly if stable, more frequently if necessary
- Small frequent doses of IV narcotics for pain control as needed
- Limit oral intake to ice chips sparingly
- Immunize against tetanus
- Check peripheral pulses; remove jewelry or other potentially constricting items

Hospital Transfer (Adults)

- Cover burns with clean, dry, sheet or dressing
- **Maintain core body temperature by adding blankets as needed, warm room, etc.**
- May place plastic wrap over wound to keep patient warm and help with pain control
- DO NOT wrap in wet sheets, blankets or apply ice
- DO NOT apply creams or ointments to burns

FOR BURN TRANSFERS CALL

MILWAUKEE METRO AREA (414) 272-BURN (2876)
OUTSIDE METRO AREA (800) 272-BURN (2876)

For additional burn education on care of burns or Advanced Burn Life Support courses (ABLS) call 414-585-1163.

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