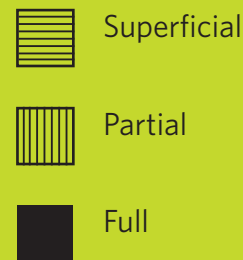


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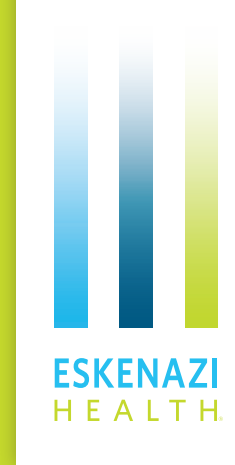


Classify the burn as one of the following based on indicated characteristics:

| Superficial | Full Thickness | Partial Thickness |
|-------------|----------------|-------------------|
| Red         | Dry, Leathery  | Moist             |
| Dry         | Insensate      | Blisters          |
| Painful     | Color Variable | Painful           |

Depth of burn will evolve over the next 12-18 hours.

| AREA            | 0 - 1 Year | 1 - 4 Years | 5 - 9 Years | 10 - 15 Years | Adult | Partial % | Full Thickness % | % Total |
|-----------------|------------|-------------|-------------|---------------|-------|-----------|------------------|---------|
| Head            | 19         | 17          | 13          | 10            | 7     |           |                  |         |
| Neck            | 2          | 2           | 2           | 2             | 2     |           |                  |         |
| Ant. Trunk      | 13         | 13          | 13          | 13            | 13    |           |                  |         |
| Post. Trunk     | 13         | 13          | 13          | 13            | 13    |           |                  |         |
| Right Buttock   | 2 1/2      | 2 1/2       | 2 1/2       | 2 1/2         | 2 1/2 |           |                  |         |
| Left Buttock    | 2 1/2      | 2 1/2       | 2 1/2       | 2 1/2         | 2 1/2 |           |                  |         |
| Genitalia       | 1          | 1           | 1           | 1             | 1     |           |                  |         |
| Right Upper Arm | 4          | 4           | 4           | 4             | 4     |           |                  |         |
| Left Upper Arm  | 4          | 4           | 4           | 4             | 4     |           |                  |         |
| Right Lower Arm | 3          | 3           | 3           | 3             | 3     |           |                  |         |
| Left Lower Arm  | 3          | 3           | 3           | 3             | 3     |           |                  |         |
| Right Hand      | 2 1/2      | 2 1/2       | 2 1/2       | 2 1/2         | 2 1/2 |           |                  |         |
| Left Hand       | 2 1/2      | 2 1/2       | 2 1/2       | 2 1/2         | 2 1/2 |           |                  |         |
| Right Thigh     | 5 1/2      | 6 1/2       | 8 1/2       | 8 1/2         | 9 1/2 |           |                  |         |
| Left Thigh      | 5 1/2      | 6 1/2       | 8 1/2       | 8 1/2         | 9 1/2 |           |                  |         |
| Right Leg       | 5          | 5           | 5 1/2       | 6             | 7     |           |                  |         |
| Left Leg        | 5          | 5           | 5 1/2       | 6             | 7     |           |                  |         |
| Right Foot      | 3 1/2      | 3 1/2       | 3 1/2       | 3 1/2         | 3 1/2 |           |                  |         |
| Left Foot       | 3 1/2      | 3 1/2       | 3 1/2       | 3 1/2         | 3 1/2 |           |                  |         |
| <b>TOTAL</b>    |            |             |             |               |       |           |                  |         |



## Richard M. Fairbanks Burn Center at Eskenazi Health BURN STABILIZATION PROTOCOL

1.800.4.TRAUMA

*For patient transfers or to talk with a burn or trauma surgeon 24 hours a day*

### American Burn Association Burn Center Referral Criteria

**Burn injuries that should be referred to a burn center include:**

- Partial thickness burns greater than 10 percent of total body surface area (TBSA)
- Burns that involve the face, hands, feet, genitalia, perineum or major joints
- Third degree burns in any age group
- Electrical burns, including lightning injury
- Chemical burns
- Inhalation injury
- Burn injury in patients with pre-existing medical disorders that could complicate management, prolong recovery or affect mortality
- 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 judgment will be necessary in such situations and should be in concert with the regional medical control plan and triage protocols.)
- Burned children in hospitals without qualified personnel or equipment for the care of children
- Burn injury patients who will require special social, emotional or rehabilitative intervention



ESKENAZI  
 HEALTH  
 RICHARD M. FAIRBANKS  
 BURN CENTER

# Treatment Protocol

## 1. Remove any sources of heat.

- Cool any burns that are warm to the touch with tepid water and then dry patient.
- Cover patient with a clean, dry sheet or blanket to prevent hypothermia.

## 2. Assess airway/breathing.

- Carbon monoxide may present as restlessness, headache, nausea, poor coordination, memory impairment, disorientation or coma. Administer highest level of O<sup>2</sup> possible via non-rebreathing face mask.
  - **Useful lab:** Blood gases, carboxyhemoglobin level
- Intubation is generally only necessary for unconscious patients, hypoxic patients with severe smoke inhalation or patients with flame or flash burns involving the face and neck. Indications include pharyngeal burns, air hunger and carbonaceous sputum with hoarseness.
- If breathing seems to be compromised by tight circumferential trunk burns, consult with burn center surgeons immediately.

## 3. Estimate the percent of the total body surface area burned (TBSA).

- Use the Rule of Nines initially. See the back of this folder for a chart to aid in accurate assessment.
- **Reminder:** Remove as much soot as possible for a more accurate assessment. First degree burns are not included in estimation.

## 4. Obtain IV access.

- Burns of less than 15 percent TBSA can be resuscitated orally, unless the patient has an electrical injury or associated trauma.
- For burns of 15-40 percent TBSA, secure one large bore IV line in upper extremity. Add a second line if the transport will be longer than 45 minutes.
- Burns of more than 40 percent TBSA require two large bore IV lines in unburned skin in upper extremities if possible.
- **Reminder:** IVs may be placed through a burn if necessary (suture to secure). Avoid saphenous vein if at all possible. Avoid cut-downs through unburned skin if possible.

## 5. Initiate fluid resuscitation.

- **Adults:** 4ml ringers lactate x (kg of body weight) x (% TBSA burn) = ml in first 24 hours, with half of this total given in the first eight hours post-injury.
- **Children younger than age 14:** 3ml ringers lactate x (kg of body weight) x (% TBSA burn)
- **Electrical:** 4ml ringers lactate x (kg of body weight) x (% TBSA burn)
- Children weighing less than 40kg should be given daily maintenance fluids in addition to fluid resuscitation, including dextrose.
  - **Example** – Patient weighing 70kg with a burn of 50 percent TBSA: 4ml x 70kg x 50% = 7,000ml needed in the first 24 hours, with 3,500ml needed in the first eight hours. IVs are initially started at 450 ml/hour. Round to the nearest ml.
- **Reminders:**
  - Fluids are rarely needed to be given faster than 1.5 times the above rate.
  - Do not give dextrose solutions – they may cause an osmotic diuresis and confuse adequacy of resuscitation assessment.
  - Children under 40kg require a dextrose containing maintenance solution in addition to fluid resuscitation.

## 6. Assess urine output: Urine output target = 0.3 – 0.5 ml/kg/hour

- **Reminder:** Lasix and other diuretics are never given to improve urine output. Fluid rates are adjusted to increase urine output.
- Observe urine for burgundy color, which is often seen with massive injuries or electrical burns. There is a high incidence of renal failure associated with these injuries, requiring prompt and aggressive intervention. Increase urine output to 100 ml/hour by increasing IV fluid.
- **Reminder:** If unable to stimulate high urine flow or clear pigments with increased fluid administration, consult a burn center.

## 7. Insert nasogastric tube.

- Insert nasogastric tube on intubated patients, burns >20% TBSA and unresponsive patients.
- Initiate antacid therapy if patient will not be transported within 12 hours.
- Keep NPO for stabilization and transport.

## 8. Prepare for escharotomy.

- Assess for circumferential full-thickness burns of extremities or trunk. Elevate burned extremities on pillows above the level of the heart. If transfer will be delayed beyond 12 hours, check distal pulses hourly and call a burn center if pulses disappear.
- Call the burn center prior to performing escharotomy.

## 9. Administer medication.

- Give tetanus immunization.
- After fluid resuscitation has been started, pain medication may be given in appropriately titrated doses. Blood pressure, pulse, respiratory rate and state of consciousness should be assessed after each increment of IV morphine.
  - **Guideline:** In an adult patient, give doses of 3-5mg IV morphine repeated in 5-10-minute intervals until pain appears to be under control.
  - **Reminder:** Even small degrees of hypovolemia may grossly exaggerate effects of all medications. If blood pressure or respiratory rate falls or pulse rises by more than 20 percent of baseline, do not give additional morphine without consulting a burn center.
- Consult a burn center before giving any antibiotics.

## 10. Give wound care.

- If transfer of patient will be completed within 12 hours, debridement and application of topical antimicrobials is unnecessary. Transport patient wrapped in a dry sheet and blanket.
- If it will be longer than 12 hours before transfer is completed, debride all loose tissue and gently cleanse the wounds of all debris with mild soap and water. This should be done with opiate analgesia but not general anesthesia. Consult burn center for topical therapy.
- **Reminders:**
  - Warm the treatment area as much as possible.
  - Work efficiently.
  - Monitor patient temperature.
  - Place dressings as quickly as possible.
- Remember these general items when transferring a burn patient.
  - A history, including details of the accident and pre-existing disease or allergies should be recorded and sent with the patient.
  - Copies of all medical records, including all fluids and medications given, urine outputs, and vital signs must accompany the patient. Specific details may be recorded on the transfer sheet included in this folder.
  - The Richard M. Fairbanks Burn Center can assist in transport when requested.
  - Record the following:
    1. Mechanism of injury
    2. Past medical history
    3. Tetanus immunization status
    4. Medications
    5. Allergies
    6. Head-to-toe survey
    7. Time of last meal
- Make special considerations for electrical burns and consult with a burn center.
- Brush powdered chemicals off wound if necessary. Then, flush chemical burns for a minimum of 20-30 minutes with running water.
  - **Reminder:** Never neutralize an acid with a base or vice versa.
- Irrigate burned eyes with a gentle stream of saline, flushing both the injured eye and the conjunctiva. Follow with an ophthalmology consult if transport is not imminent.
  - **Reminder:** Always irrigate eyes with the inside canthus out to avoid washing chemicals down the tear ducts.
- Determine what chemical and what concentration of the chemical caused the injury.
- Make special considerations for electrical burns and consult with a burn center.
  - Attach cardiac monitor. Treat life-threatening dysrhythmias as needed.
  - Assess for associated trauma. Assess central and peripheral neurologic function.
  - Administer ringers lactate. Titrate fluids to maintain adequate urine output or to flush pigments through the urinary tract (see instructions for urine output in 6).
    - **Useful lab:** ABG with acid/base balance
  - Elevate burned extremities above the level of the heart with pillows. Monitor distal pulses (escharotomy or fasciotomy may ultimately be required).
  - If transfer will be delayed beyond 12 hours, check distal pulses hourly. Consider arranging for a general surgeon to perform fasciotomy if pulses disappear. Consult a burn center if assistance is needed.