

BURN STABILIZATION PROTOCOL

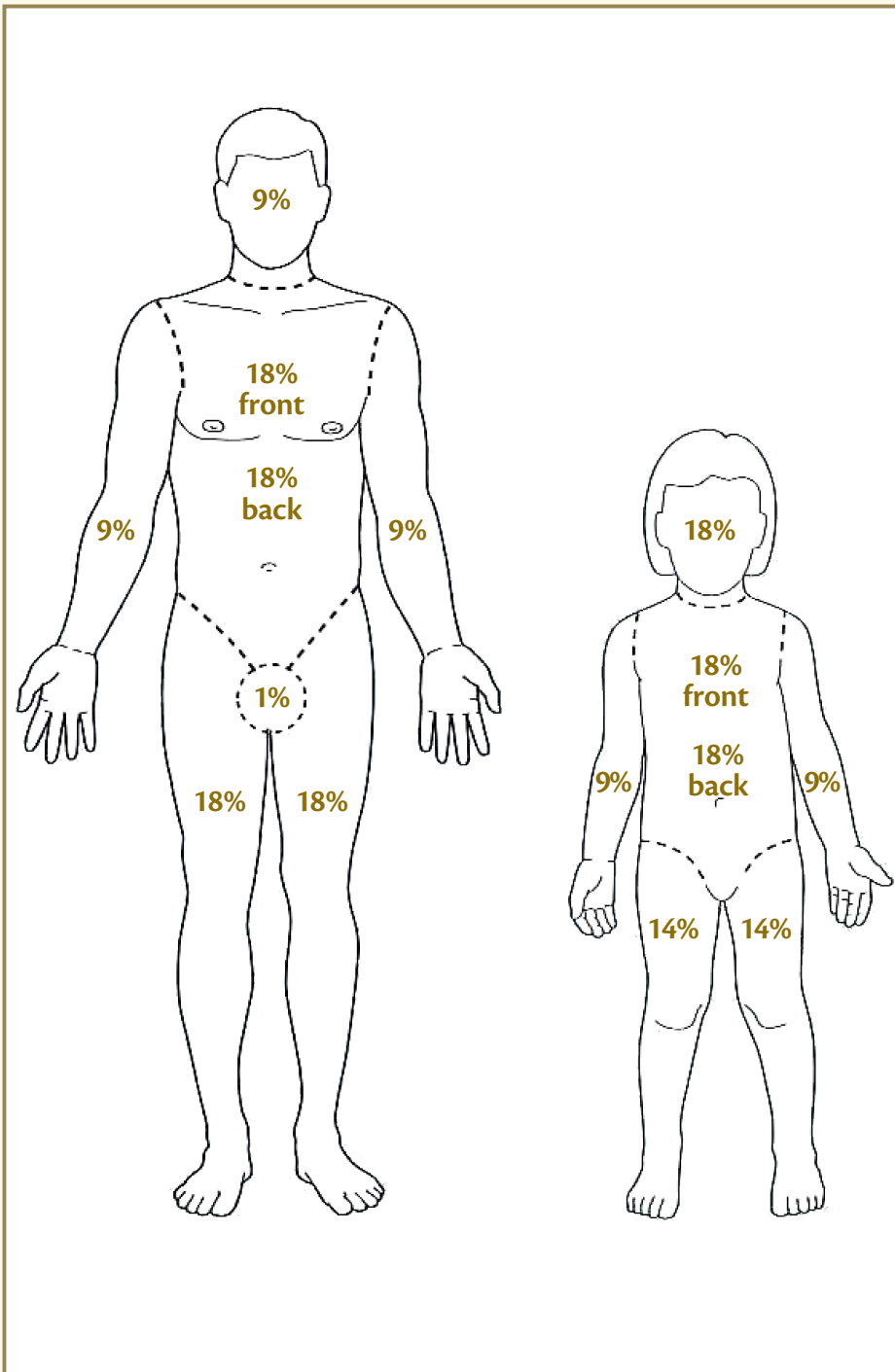
Burn Physicians are available to consult 24 hours a day via the Transfer Center at Phone 1.888.731.4791

BURN INJURIES THAT SHOULD BE REFERRED TO A BURN CENTER INCLUDE:

- Partial thickness burns greater than 10% 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 a patient with preexisting medical disorders
- Any patient with burns and concomitant trauma
- Burned children in hospitals without qualified personnel or equipment for the care of children
- Burn injury in patients who will require special social, emotional or rehabilitative interventions

BURN SEVERITY DETERMINATION

- First Degree (Superficial Partial Thickness)
 - Red, dry, painful. **(Does not count in % TBSA calculation)**
- Second Degree (Partial Thickness)
 - Red, blistered, weepy, swollen, painful
- Third Degree (Full Thickness)
 - Whitish, brown, charred, no pin prick sensation in burned area



RULE OF NINES

1. RESPONDER SAFETY IS THE NUMBER ONE PRIORITY.

- Remove any source of heat including any clothing or jewelry in an area that may be burned, covered with chemicals or are constricting.
- If concerned about a haz mat situation, flush wounds with tepid water, avoiding hypothermia.
- Cover patient with 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 100% O₂ as needed.

BURN PEARL: Consider obtaining a blood gas with carboxyhemoglobin level.

- Intubation is generally only necessary for unconscious patients, hypoxic patients with smoke inhalation, or patients with flame or flash burns involving face and neck. Indications include: pharyngeal burns, air hunger or carbonaceous sputum with hoarseness. Insert OG if patient is intubated.
- If breathing seems to be compromised by tight circumferential trunk burns, consult with the Burn Physicians.

3. ESTIMATE PERCENT TOTAL BODY SURFACE AREA BURNED (% TBSA)

- Use Rule of Nines to estimate % TBSA for adults and pediatric patients. See diagram on the back.

BURN PEARL: Remove as much soot as possible for a more accurate assessment; 1st degree burns are not included in TBSA estimation.

4. OBTAIN IV ACCESS

- Burns < 15% TBSA: can usually be resuscitated orally (unless the patient has an electrical injury, associated trauma or pediatric patients).
- Burns 15 - 40 % TBSA: secure one large bore IV line in upper extremity; add a second if the transport will be longer than 1 hour.
- Burns > 40 % TBSA: usually requires two large bore IV lines in upper extremities.

BURN PEARL: IVs may be placed through burn if necessary (suture to secure). Avoid saphenous vein and cut-downs through unburned skin.

5. INITIATE FLUID RESUSCITATION

- Consensus formula: $2.4 \text{ mL Ringers Lactate} \times \text{weight in kg} \times \% \text{ TBSA} = \text{mLs in first 24 hours}$. Give half of this total in the first 8 hours post burn.

BURN PEARL: Adults use 2 mL; Pediatrics use 3 mL; Electrical injuries use 4mL.

Do not give dextrose solutions (except for maintenance fluids in children) –it may cause an osmotic diuresis and confuse adequacy of resuscitation assessment.

- Children < 30 kg should have maintenance fluids that include dextrose (D5 LR or D5 1/2 NS) in addition to the Consensus formula.

Adult Example: Patient weighing 70 kg with a 50 % TBSA burn: $2 \text{ mL} \times 70 \times 50 = 7000 \text{ mLs needed in 24 hours}$. 3500 mLs are needed in the first 8 hours so IV fluids are initially started at 437 mL/hour.

6. ASSESS URINE OUTPUT

- Insert foley catheter in patients with burns >15% TBSA. Adequate urine output for adults is 30 mL/hr and children <30 kg it should be 1 mL /kg/hr.
- Observe urine for burgundy color (seen with massive injuries or electrical burns). There is a high incidence of renal failure associated with these injuries, requiring prompt and aggressive intervention.

BURN PEARL: Lasix, other diuretics and fluid boluses are never given to improve urine output; slowly adjust fluid rates up to increase urine output.

7. MEDICATIONS

- Assess for current immunization status and give tetanus immunization as needed.
- After fluid resuscitation has been started, pain medication (IV Morphine) may be titrated in small doses. Blood pressure, pulse, respiratory rate and level of consciousness should be assessed after each increment of IV medication. Consider sedation medication.
- Antibiotics are not indicated.

BURN PEARL: 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% of baseline, do not give additional narcotics without consulting a Burn Physician.

8. CIRCUMFERENTIAL BURNS

- Assess for circumferential burns of extremities or trunk.
- Elevate burned extremities on pillows above level of the heart.
- If transfer will be delayed, check distal pulses hourly and call Burn Physicians if pulses weaken, disappear or patient complains of numbness or tingling.

9. WOUND CARE

- Debridement and application of topical antimicrobials is usually unnecessary if transport is less than 12 hours. Cover patient with a dry sheet or blanket, keeping patient warm.
- If transport is delayed, consider applying a thin layer of Silver Sulfadiazine to open areas covering the wounds with sterile dressings. Do not delay transport to do wound care.

10. SPECIAL CONSIDERATION WITH CHEMICAL BURNS

- Protect yourself.
- Remove ALL clothing and jewelry.
- Brush powdered chemicals off skin; then flush with running tepid water being careful to keep patient warm.
- Irrigate eyes with a gentle stream of saline.
- Determine what chemical and what concentration caused the injury.

BURN PEARL: Never neutralize an acid with a base or vice versa.

11. SPECIAL CONSIDERATIONS WITH ELECTRICAL INJURIES

- Treat life-threatening dysrhythmias.
- Assess for associated trauma; assess central and peripheral neurologic function.
- Titrate fluids to maintain adequate urine output or to flush pigments through the urinary tract.
- Elevate burned extremities above the level of the heart on pillows. Monitor distal pulses.

12. GENERAL ITEMS

- A history including details of the accident and pre-existing disease/allergies should be sent with the patient.
- Include copies of medical records, including all fluids and medications given, urine outputs and vital signs.
- The Transfer Center can arrange transport with Airlift Northwest, as needed.