

EMERGENCY TREATMENT

OF BURNS

855-863-9595



B U R N
AND
**RECONSTRUCTIVE
CENTERS OF AMERICA**

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IMMEDIATE EMERGENCY BURN CARE

1. Treat according to ACLS or ABLIS protocol.
2. Use airway and C-Spine precautions.
3. Stop the burning process.

AIRWAY MANAGEMENT

1. Administer high-flow 100% oxygen to all burn patients. Be prepared to suction and support ventilation as necessary.
2. If an inhalation injury is suspected, consider intubation. Burns sustained in an enclosed space are more likely to result in an inhalation injury. Other indications of an inhalation injury include:
 - + Dark or reddened oral and/or nasal mucosa.
 - + Burns to the face, lips or nares; singed eyebrows; and/or singed nasal hairs.
 - + Carbon or soot on teeth, tongue or oral pharynx.
 - + Raspy, hoarse voice or cough.
 - + Stridor or inability to clear secretions may indicate impending airway closure.
 - + Mental status changes.

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FLUID RESUSCITATION

» FLUID RESUSCITATION FIRST 24 HOURS

- + Pre-hospital setting:
 - < 5 years 125 mL/hr
 - 6-13 years 250 mL/hr
 - ≥ 14 years 500 mL/hr
- + In the Emergency Department:
 - 2-4 mL Ringer's Lactate x kg body weight x percent burn.
 - Give half over first eight hours and remainder over next 16 hours.
 - Calculate fluids from time of accident.

A Adult ≥14..... 2 mL
C Child <14 3 mL
E Electrical..... 4 mL

For TBSA >20%, consider placing Foley catheter to accurately measure urine output. Consult Burn Center if urine is black/brown/red or <1 mL/kg/hr.

» PERCENT AND DEPTH OF BURN

- + **First-degree burns:**
 - Are marked by red, pink or darkened skin.
 - Are painful and warm to touch.
 - No blisters or skin sloughing present.
 - Not included in TBSA calculation.
- + **Second-degree burns:**
 - Are moist, reddened, blistered and painful to touch.
 - Blanch to touch.
 - Are at risk of developing into a third-degree burn. Regularly reassess second-degree burns to ensure the injury has not converted to a third-degree burn.
- + **Third-degree burns:**
 - Are dry/tight/leathery, brown/tan/waxy or pearly white.
 - Are devoid of blanching or capillary refill.
 - Are relatively pain-free, lacking blisters and may initially appear as second-degree.
 - Need skin grafting to heal.
- + **Fourth-degree burns:**
 - Have a charred appearance.
 - Extend below the dermis and subcutaneous fat into the muscle, bone or tendon.

TRAUMA WORK-UP PER ATLS PROTOCOL

» OBTAIN PATIENT HISTORY

- + How was patient burned? Enclosed space? Any deaths at scene?
- + When did it happen?
- + Are there concomitant injuries? Rule out associated trauma.
- + Are there chemical burns — What was the agent? Concentration? Obtain Material Safety Data Sheets.
- + PMH/PSH? Allergies? Medications? Last Tetanus? Drug/alcohol history?
- + When was the patient's last meal?

» PAIN MANAGEMENT

Give all pain medications via IV. Provide morphine sulfate (if not contraindicated) in the following proportions:

- + **Adults:** 3-5 mg IV every 10 minutes or PRN.
- + **Children:** titrate IV by weight (0.1 mg/kg/dose) or consult Burn Center surgeon.
- + Do not use ice, iced normal saline or iced water as a comfort measure.

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» WOUND CARE MEASURES

- + Remove all clothing, diapers, jewelry, metal and restrictive garments.
- + Consult the Burn Center concerning circumferential burns of the extremities or thorax. Escharotomies are occasionally necessary at the referring facility.
- + Assess the 5 Ps (pain, pallor, paralysis, paresthesia and pulselessness).
- + Elevate HOB and burned extremities to decrease swelling.
- + Wound debridement usually not necessary.
- + Apply sterile, dry dressings for transport.
- + Do not apply ice, ointments or creams.
- + Maintain body heat — wrap in blankets, prevent unnecessary exposure.

» OTHER INTERVENTIONS

- + Labs: CBC, PT, PTT, fibrinogen, ABG with CK, lactic acid, carboxyhemoglobin, myoglobinuria and electrolytes.
- + X-ray: CXR and areas of suspected trauma.
- + Insert NG tube and decompress stomach if nausea and vomiting are present, patient is intubated, TBSA >20% and/or transport by air.
- + Keep patient NPO.
- + Monitor patient's vital signs and peripheral pulses every 15 minutes.

» AMERICAN BURN ASSOCIATION BURN CENTER REFERRAL CRITERIA

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

1. Partial-thickness burns greater than 10% total body surface area (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 injuries.
5. Chemical burns.
6. Inhalation injuries.
7. Burn injuries in patients with pre-existing 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 or 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 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 injuries in patients who will require special social, emotional or rehabilitative intervention.

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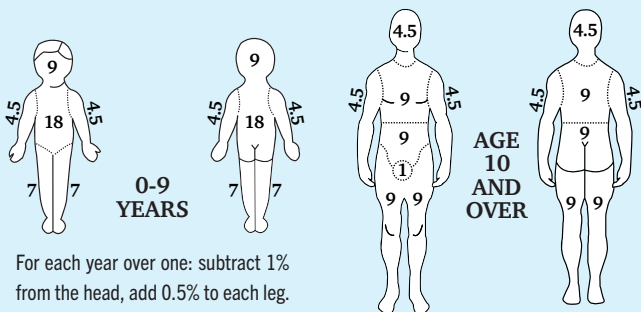
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TOTAL BODY SURFACE AREA (PERCENT PER AGE)

AREA	0-1 YEAR	1-4 YEARS	5-9 YEARS	10-14 YEARS	15 YEARS	ADULT
HEAD	19	17	13	11	9	7
NECK	2	2	2	2	2	2
ANTERIOR TRUNK	13	13	13	13	13	13
POSTERIOR TRUNK	13	13	13	13	13	13
LEFT BUTTOCK	2.5	2.5	2.5	2.5	2.5	2.5
RIGHT BUTTOCK	2.5	2.5	2.5	2.5	2.5	2.5
GENITALIA	1	1	1	1	1	1
RIGHT UPPER ARM	4	4	4	4	4	4
LEFT UPPER ARM	4	4	4	4	4	4
RIGHT LOWER ARM	3	3	3	3	3	3
LEFT LOWER ARM	3	3	3	3	3	3
RIGHT HAND	2.5	2.5	2.5	2.5	2.5	2.5
LEFT HAND	2.5	2.5	2.5	2.5	2.5	2.5
RIGHT THIGH	5.5	6.5	8	8.5	9	9.5
LEFT THIGH	5.5	6.5	8	8.5	9	9.5
RIGHT LOWER LEG	5	5	5.5	6	6.5	7
LEFT LOWER LEG	5	5	5.5	6	6.5	7
RIGHT FOOT	3.5	3.5	3.5	3.5	3.5	3.5
LEFT FOOT	3.5	3.5	3.5	3.5	3.5	3.5

Only second, third and fourth-degree burns are included in TBSA.

TOTAL BODY SURFACE AREA BY PERCENTAGE



For each year over one: subtract 1% from the head, add 0.5% to each leg.

ESTIMATE SPOTTY AREAS BY USING THE PATIENT'S PALM AS 1%.

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