



EMERGENCY BURN CARE

INFORMATION

855-863-9595 | burncenters.com



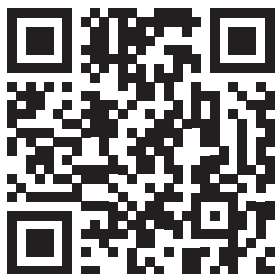
BRCA

BURN AND RECONSTRUCTIVE
CENTERS OF AMERICA

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IMMEDIATE EMERGENCY BURN CARE

1. Treat according to ACLS or ABLIS protocol.
2. Wear personal protective equipment (PPE).
3. Use airway and C-Spine precautions.
4. Stop the burning process.

FIRST AID FOR THE THREE MAJOR CATEGORIES

» THERMAL BURNS

- + Stop the burning process with room-temperature water.
- + Remove all clothing, diapers, jewelry, metal and restrictive garments.
- + Monitor pulses in circumferentially-burned extremities.
- + Keep patient warm to prevent hypothermia.

» ELECTRICAL BURNS

- + Be safe: turn off power source or remove source before rescue.
- + Monitor for cardiac arrhythmias.
- + Start CPR, if needed.
- + Remove all clothing, diapers, jewelry, metal and restrictive garments.
- + Document pulses of affected extremities.
- + Keep patient warm to prevent hypothermia.

» CHEMICAL BURNS

- + If powder is present, brush off as much as possible before using water.
- + If liquid is present, dilute with water. Don't neutralize the chemical.
- + Remove all clothing, diapers, jewelry, metal and restrictive garments to prevent chemical trapping.
- + Flush with low-pressure, room-temperature water for 30 minutes at the scene if no other trauma and the patient's

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 occlusion.
 - + Mental status changes.
3. Secure ETT with ties (not adhesive tape) when patient has facial burns.

FLUID RESUSCITATION

» IN A PRE-HOSPITAL SETTING, SET FLUID (LR) TO:

- < 5 years.....125 mL/hr
- 6-12 years250 mL/hr
- ≥ 13 years.....500 mL/hr

» FOR SECOND- AND THIRD-DEGREE BURNS >20% TBSA, USE THE FOLLOWING FORMULA* TO CALCULATE FLUID

- + 2-4 mL Ringer's Lactate x KG body weight x TBSA / 16 = hourly infusion rate
- + Calculate fluids from time of accident.

A Adult ≥13..... 2 mL
C Child <13..... 3 mL
E Electrical..... 4 mL

For TBSA >20%, consider placing Foley catheter to accurately measure urine output.

**Parkland formula for Burn Fluid Management*

» TITRATE RINGER'S LACTATE BASED ON URINE OUTPUT:

Adult or young adolescent >30kg..... 30-50 mL/hr
Children <30kg..... 1 mL/kg/hr
High-voltage electrical injury..... 75-100 mL/hr
Adjust fluid up or down by 1/3 hourly

*Consult Burn Center if urine is black/brown/red
or <0.5 mL/kg/hr.*

» BURN SITUATIONS THAT REQUIRE SPECIAL FLUID MANAGEMENT ARE:

- + Electrical injuries.
- + Inhalation injuries.
- + Patients in which fluid resuscitation is delayed.
- + Patients burned while intoxicated.
- + Children and infants.

**If you have questions or concerns about fluid resuscitation,
contact the Burn Center at (855) 863-9595.**

PATIENT HISTORY

» OBTAIN THE FOLLOWING PATIENT INFORMATION:

- + How was the 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 medication via IV. Provide morphine sulfate (if not contraindicated) in the following proportions:

- + Adults: 4-8 mg IV every 2-4 hours as needed.
- + Children: Titrate IV by weight (0.05-0.1 mg/kg every 2 hours as needed or consult Burn Center surgeon.
- + Do not use ice, iced normal saline or iced water as a comfort measure.
- + Perform baseline neuro exam prior to giving narcotics.

» 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.

» PREVENTING AND TREATING HYPOTHERMIA

- + Wrap patient in clean or sterile, dry sheet.
- + Place blankets over patient to ensure warmth.
- + Cover head with extra layer.
- + Warm fluids if possible.

CIRCUMFERENTIAL BURNS

Consult the Burn Center concerning circumferential burns of the extremities or thorax. An indicator of decreased blood flow due to circumferential burns is slowing of capillary refill or diminished pulses.

Deep circumferential burns of the chest may impair or prevent mechanical ventilation of the burn victim. Escharotomies are occasionally necessary at the referring facility. Consult the Burn Center.

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 (PARTIAL THICKNESS) 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 (FULL THICKNESS) 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.

» BURN CENTER REFERRAL CRITERIA*

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

1. Partial-thickness burns greater than or equal to 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. Atypical burns such as electrical (including lightning), chemical, radiation and frostbite.
5. Inhalation injuries.
6. Burn injuries in patients with pre-existing medical disorders that could complicate management, prolong recovery or affect mortality.
7. 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 and should be in concert with the regional medical control plan and triage protocols.
8. Burned children in hospitals without qualified personnel or equipment for the care of children.
9. Burn injuries in patients who will require special social, emotional or rehabilitative intervention.

** American Burn Association*

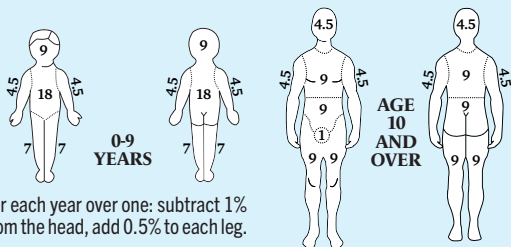
Only second, third and fourth degree burns are included in TBSA.

TOTAL BODY SURFACE AREA (PERCENT PER AGE)¹

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

Lund CC, Browder NC. The estimation of areas of burns. *Surg Gynecol Obstet.* 1944;79:352-8.

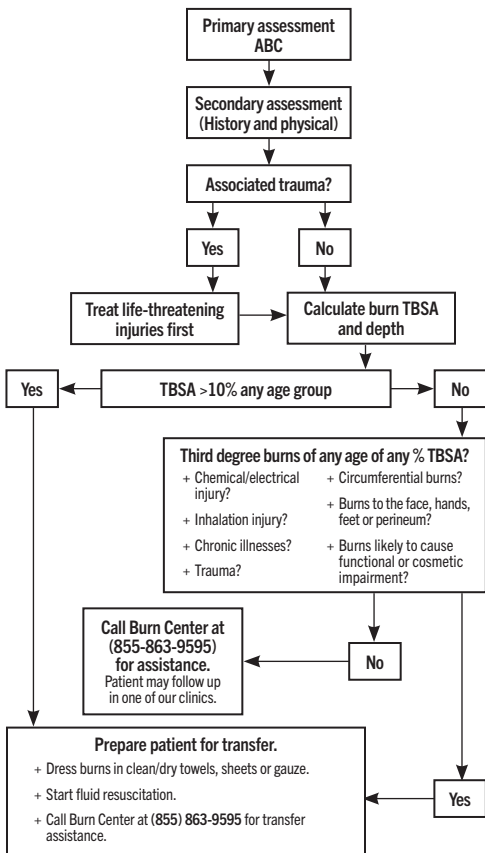
TOTAL BODY SURFACE AREA BY PERCENTAGE



ESTIMATE SPOTTY AREAS BY USING THE PATIENT'S PALM AS 1%
(MEASURE FROM BASE OF PALM TO TIPS OF FINGERS)

Illustration based on data from the Wallace Rule of Nines. Wallace AB. The exposure treatment of burns. *Lancet.* 1951 Mar 03;1(6653):501-4.

» EMERGENCY BURN CARE DECISION TREE



SIGNS OF CHILD ABUSE

» WHAT MAKES BURNS SUSPICIOUS FOR ABUSE

- + Unexplained burn
- + Implausible history
- + Inconsistent history
- + Delay in seeking medical care
- + Frequent injuries and/or illnesses
- + Child accuses an adult
- + One parent accuses the other parent
- + Alleged self-inflicted
- + Alleged sibling-inflicted
- + Pattern of burn
- + Immersion of burns
- + Rigid contact burns
- + Caregiver absent at time of injury
- + Other signs of abuse and/or neglect
- + Prior involvement of local authorities

**IF CHILD ABUSE/NEGLECT IS SUSPECTED,
contact the case manager, social worker and
local authorities as soon as possible.**

OUR PROVIDERS ARE AVAILABLE 24/7 FOR CONSULTATIONS,
REFERRALS AND TRANSFERS BY CALLING:

(855) 863-9595



FREE DIGITAL PROVIDER
RESOURCES AVAILABLE AT:

www.burneducation.com/resources



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