



# EMERGENCY BURN CARE

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INFORMATION

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

AT



**Swedish**  
Medical Center



# BURN CARE

# IMMEDIATE EMERGENCY BURN CARE

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

## FIRST AID FOR THE THREE MAJOR CATEGORIES

### » *THERMAL BURNS*

- + Stop the burning process with water
- + Remove all clothing and jewelry
- + Monitor pulses in circumferentially burned extremity
- + Keep patient warm to avoid hypothermia

### » *ELECTRICAL BURNS*

- + BE SAFE: Turn off power source or remove source before rescue
- + Monitor for cardiac arrhythmias
- + Start CPR if needed
- + Remove clothing/shoes/jewelry
- + Document pulses of affected extremities
- + Keep patient warm to avoid hypothermia

### » *CHEMICAL BURNS*

- + Remove all clothing/shoes/jewelry (these can trap chemicals)
- + Flush for one hour at the scene if no other trauma and the patient's vital signs are stable
- + Brush powder off before flushing with water; flush with copious water by shower or hose for an additional hour at the local emergency room
- + Keep patient warm to avoid hypothermia



## AIRWAY MANAGEMENT

1. Administer high flow 100% oxygen to all burn patients. Be prepared to suction and support ventilation necessary.
2. If you suspect an inhalation injury, consider intubation. An inhalation injury may be present if you observe the following:
  - + Burned in an enclosed space
  - + Dark or reddened oral and/or nasal mucosa
  - + Burns to the face, lips, nares, singed eye brows, 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

## FLUID RESUSCITATION

### » IN A PRE-HOSPITAL SETTING, SET FLUID TO:

- < 5 years - 125cc/hr
- 6-13 years - 250cc/hr
- > 13 years - 500cc/hr

### » ONCE THE PATIENT IS IN THE EMERGENCY DEPARTMENT, USE THE PARKLAND FORMULA TO CALCULATE FLUIDS:

*2-4cc Ringers Lactate x Kg body weight x percent burn. Give the first half over the first 8 hours and the remainder over the next 16 hours.*

2cc for 14 years or older  
3cc for children < 14 years  
4cc for electrical burns injuries

Place foley to accurately measure urine. Urine output is an indication of the progression and treatment of hypovolemic shock, or burn shock.

» **TITRATE RINGERS LACTATE BASED ON URINE OUTPUT:**

Adult or young adolescent: 30 to 50 cc/hr

High voltage electrical injury: 75-100 cc/hr

Children under 30 Kg: 1cc/Kg/hour

If there is no urine output, increase the rate of fluids by 1/3. If there is only a scant amount of dark or concentrated urine, pigments, myoglobin, and/or hemoglobin may be blocking the kidney—especially in a high voltage electrical burn. If urine output and pigment clearing do not respond to increased fluid administration, promptly consult Burn Center Surgeon.

For burn injuries > 30% TBSA, consider high dose vitamin C therapy. Contact the burn center at **855-863-9595** for instructions.

» **BURN SITUATIONS THAT REQUIRE SPECIAL FLUID MANAGEMENT ARE:**

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

Monitor lung sounds during fluid resuscitation for overload. Elevate head 30 degrees and burned extremities 45 degrees as soon as possible.



## PATIENT HISTORY

### Obtain the following patient information:

- + How was the patient burned?
- + Rule out associated trauma
- + Medical history
- + Current medications
- + Allergies
- + Last meal
- + Drug and/or alcohol history

### Provide Tetanus Toxioid prophylaxis as indicated.

#### » PAIN MANAGEMENT

Give all pain medication via IV. Provide Morphine Sulfate (if not contraindicated) in the following proportions:

- + Adults: 3-5 mg IV q 10 minutes or prn
- + Children: titrate IV Morphine Sulfate by weight (0.1 mg/Kg/dose) or consult Burn Center surgeon
- + Do not use ice or iced normal saline as a comfort measure

#### » NASOGASTRIC (NG) TUBE PLACEMENT

Place Ng tube and decompress stomach if nausea and vomiting are present, if patient is intubated or TBSA greater than 20%. Keep patient NPO.



## CIRCUMFERENTIAL BURNS

Consult a Burn Center Surgeon 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. Palpate pulses, if not palpable, then use a Doppler ultrasound device. If unable to discern pulses, consult a Burn Center surgeon.

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

### » **PREVENTING AND TREATING HYPOTHERMIA**

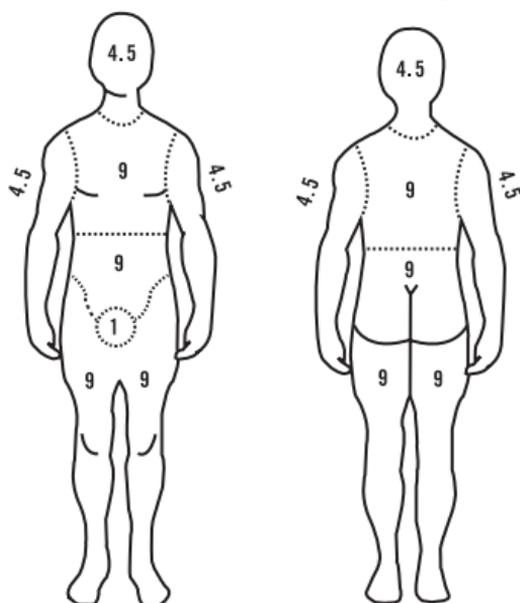
- + Wrap patient in clean or sterile dry sheet
- + Place blankets over patient to ensure warmth
- + Cover head with extra layer
- + Warm fluids if possible

### » **AMERICAN BURN ASSOCIATION CRITERIA FOR INJURIES REQUIRING REFERRAL TO A BURN CENTER**

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. Any third-degree burn

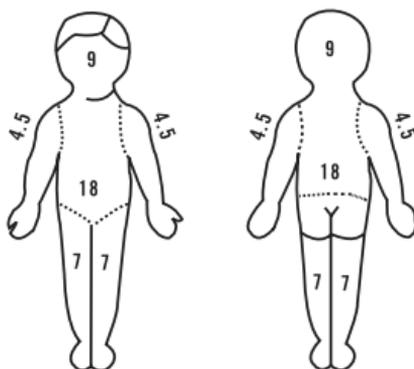
4. Electrical burns, including lightning injury
5. Chemical burns
6. Inhalation injury
7. Burn injury in patients with pre-existing medical disorders that could complicate management, prolong recovery, or affect mortality
8. Any patients with burns and concomitant trauma (such as fractures) in which the burn injury poses the greatest risk of morbidity or mortality. In such cases, if trauma poses the greater immediate risk, the patient should be initially stabilized in a trauma center before being transferred to a burn center. 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 long-term rehabilitation

## » Adult Body Surface Area: Age 15 and over in percent



- + Estimate spotty areas by using the size of the patient's palm as 1%

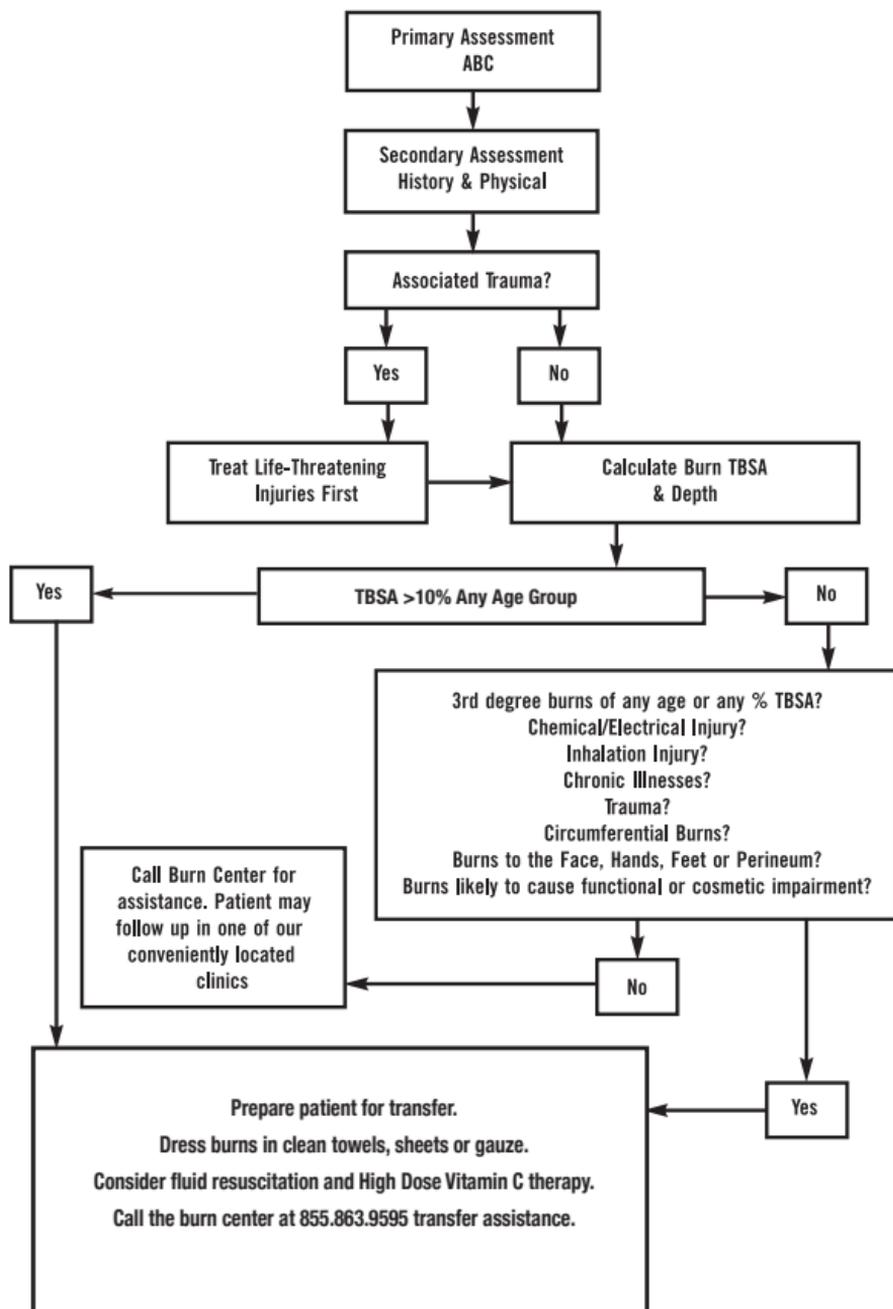
## » Child Body Surface Area: Age 0-14 in percent



- + for every year over age one, subtract 1% from the head
- + for every year over age one, add 1/2% to each leg



## » Emergency Burn Care Decision Tree



## HALLMARKS OF CHILD ABUSE

### » *WHAT MAKES BURNS SUSPICIOUS FOR ABUSE*

- + Unexplained burn
- + Implausible history
- + Inconsistent history
- + Delay in seeking medical care
- + Frequent injuries, illnesses
- + Child accuses an adult
- + One parent accuses the other
- + Alleged self-inflicted
- + Alleged sibling-inflicted
- + Pattern of burn
- + Immersion burns
- + Rigid contact burns
- + Other signs of abuse/neglect
- + Prior Child Protective Services involvement

» *If child abuse/neglect is suspected, please contact the local county Child Protective Services Office as soon as possible.*

**PATIENT TRANSPORT**

IF YOU ARE INTERESTED IN LEARNING MORE ABOUT HOW TO PROPERLY PREPARE A BURN PATIENT FOR TRANSFER, CALL BURN AND RECONSTRUCTIVE CENTERS OF COLORADO, INC. OUR BURN SURGEONS WILL GUIDE YOU STEP-BY-STEP THROUGH THE PROCESS.

**REFERRALS:**

**toll free**

**855-863-9595**

***coburncare.com***



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