

# BURNS

The initial trauma resuscitation of burns can help to minimize the morbidity and mortality caused by the burn injury.

## Priorities

- ❖ AIRWAY
- ❖ BREATHING
- ❖ CIRCULATION
- ❖ WOUND CARE
- ❖ TRANSFER

# Burn Injury Management

**Burns are No different than any other trauma injury.....ABC's are TOP Priority!!!!**

## Airway

- Inspect face, nose, and mouth for soot, singed hair, or tissue injury (*if present intubate*)
- Assess for hoarseness, dry cough, stridor, or respiratory distress (*if present intubate*)
- Assess for circumferential injury to the neck (*if present intubate*)

## Breathing

- Administer 100% Oxygen at 15L via non-rebreather or ETT

## Circulation

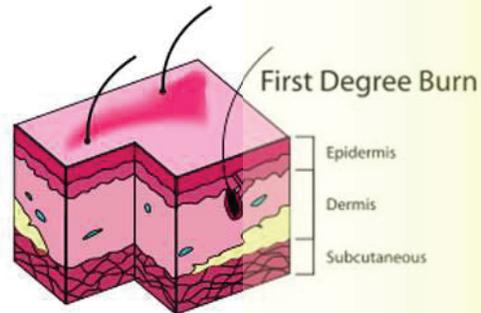
- Assess pulses and capillary refill to affected extremities
- Insert peripheral IV (*it is okay to insert into burned tissue if nothing else is available*)
  - May need to consider Intraosseous/Central Line
- Prevent hypothermia

**TRANSFER ARRANGEMENTS  
SHOULD BE INITIATED!!!!**

# Types of Burns

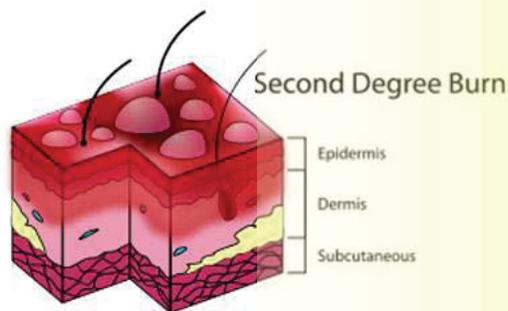
## First Degree Burn

- Characterized by erythema, pain, and absence of blisters.



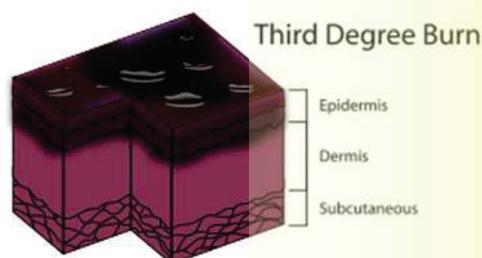
## Second Degree Burn

- Characterized by a red or mottled appearance with swelling and blister formation. The surface may have a wet or weeping appearance and is painfully hypersensitive.



## Third Degree Burn or Full Thickness Burn

- Usually appear dark and leather. Skin may also appear translucent, mottled, or waxy white. The surface is painless, generally dry, and may appear red or does not blanch with pressure.



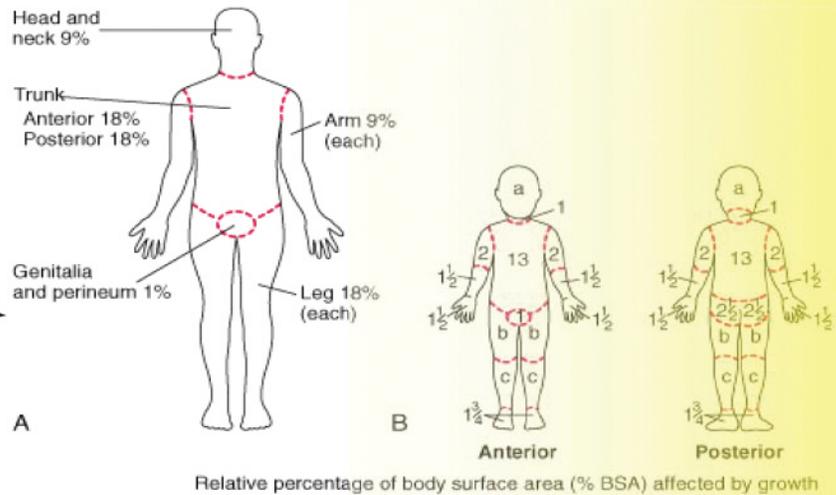
# Fluid Management for Burn Patients

## Step 1

- ✓ Determine the burn percentage of total body surface area.

### Rule of palm for small burns

Use the size of patient's palm, including digits by counting all areas the size of the palm as 1%



Body Part	Age				
	0 yr	1 yr	5 yr	10 yr	15 yr
a = 1/2 of head	9 1/2	8 1/2	6 1/2	5 1/2	4 1/2
b = 1/2 of 1 thigh	2 3/4	3 1/4	4	4 1/4	4 1/2
c = 1/2 of 1 lower leg	2 1/2	2 1/2	2 3/4	3	3 1/4

## Step 2

- ✓ Calculate the amount of fluid needed based on TBSA.  
*(Fluids should be calculated from the time injury occurred)*

**Lactated Ringers: fluid of choice for resuscitation**

### Adults and Children > 20kg

- ❖ TBSA X 4ml X weight in kg over the 1<sup>st</sup> 24 hours
  - Take the above number and give 1/2 of the fluid over the first 8 hours, and the second 1/2 over the next 16 hours.

### Children < 20kg

- ❖ TBSA X 3ml X weight in kg over the 1<sup>st</sup> 24 hours
  - Take the above number and give 1/2 of the fluid over the first 8 hours, and the second 1/2 over the next 16 hours.
  - Add a maintenance IV of D5LR in addition to LR



**Keep urine output at 100 ml/hr for adults and 1-2 ml/Kg/hr for children**

## Wound Care

- ✓ **REMOVE ALL** clothing, jewelry, and contact lenses.
- ✓ For chemical burns immediately remove all clothing, dust of powders, and begin irrigating with water for at least 30 minutes.
- ✓ **Dress burns loosely with clean dry sterile dressings**  
*(DO NOT APPLY CREAMS OR TOPICAL SOLUTIONS PRIOR TO TRANSFER)*
- ✓ **KEEP** patient **WARM** 
- ✓ If time permits and does not delay transfer, cleanse wounds with saline and antiseptic such as chlorhexidine gluconate or mild soap.

### Other Things to Consider

- Insert foley catheter
- IV pain medications **(BE GENEROUS!!!)**
- Cardiac Monitor
- Tetanus Prophylaxis
- Nasogastric tube

# Electrical Burn Treatment

**Electrical burns are frequently more serious than they appear on the body surface.**

***Significant volumes of tissue beneath the surface may be injured and result in acute renal failure and other complications.***

- ✓ Monitor blood gases and serum bicarbonate levels.
- ✓ Infuse IV fluids initially at a rate to maintain urinary output of 100ml/hr in adults.
- ✓ Observe the urine color for presence of myoglobin (dark, pink, or red)
  - If myoglobin present consider administering Sodium Bicarbonate or Mannitol to promote diuresis and excretion.
- ✓ Monitor cardiac rate and rhythm
- ✓ Monitor for signs and symptoms of compartment syndrome

# Burn Transfer Guidelines



## Transfer Indicated When There Is:

- Partial thickness and full-thickness burns of greater than 10% of the BSA in patients less than 10 years or over 50 years of age.
- Partial-thickness and full-thickness burns on greater than 20% of the BSA in other age groups.
- Partial-thickness and full-thickness burns involving the face, eyes, ears, hands, feet, genitalia, and perineum, and those that involve skin overlying major joints.
- Full-thickness burns on greater than 5% of the BSA in any age group.
- Chemical or electrical burns or inhalation injuries
- Patients with preexisting illnesses that could complicate treatment, prolong recovery, or affect mortality.
- Evidence of pulmonary injury or respiratory distress
- Brassy or sooty cough or singed nasal hairs
- Carbon Monoxide > 10%
- *Patients who have sustained other trauma injuries in addition to burns or if fixed wing accommodations are not available at your facility, may be transferred to a level II trauma center for stabilization before being transferred to a burn center.*



**Always consult with a Level II Trauma Center before transferring directly to a Burn Center**