

Emergency Burn Care

PRIMARY SURVEY

STOP THE BURNING PROCESS! Remove clothing/jewelry from affected area
Burns >10% TBSA should NOT be cooled - may induce hypothermia

AIRWAY

Is airway at risk?
Consider need for intubation if **any** present:

- Respiratory distress
- Stridor
- Altered mentation
- Hypoxia/hypercarbia
- Deep facial or neck burns
- Upper airway trauma
- Hemodynamic instability
- Burned in enclosed space

Consider need to restrict cervical spine motion

BREATHING

Assess adequacy of breathing and support

Administer O₂ at 15 L/min via non-rebreather mask

Circumferential chest/neck burns may compromise airway/oxygenation

CIRCULATION

Assess HR, BP, temperature, colour

Insert 2 large bore IV catheters, burned areas are acceptable if needed

Insert IO or central line if no peripheral access

Lactated Ringer's (LR) warmed preferred

Elevate involved extremity above heart level

Monitor distal perfusion in circumferential burns

DISABILITY

Assess level of consciousness & pupillary response

Suspect other issues if altered mentation or level of consciousness

EXPOSURE & ENVIRONMENTAL CONTROL

Remove all clothing, shoes, diaper, jewelry, body piercings, and contact lenses

Monitor core temperature for all major burns: maintain normothermia

Actively rewarm major burns: warm IV fluids, warm blankets, Bair Hugger

Cover burn area with sterile or clean dry sheets. **No ointments or creams applied** (see special guidance for asphalt/tar)

Complete baseline trauma bloodwork, Carboxyhemoglobin

INITIAL FLUID RESUSCITATION PRE-HOSPITAL & EARLY EMERGENCY CARE

2nd & 3rd degree ADULTS >20% Total Body Surface Area (TBSA) and PEDIATRICS >15% TBSA

AGE	FLUID RATE
≤ 5 years of age	125 mL LR per hour
6-13 years old	250 mL LR per hour
14 years and older	500 mL LR per hour

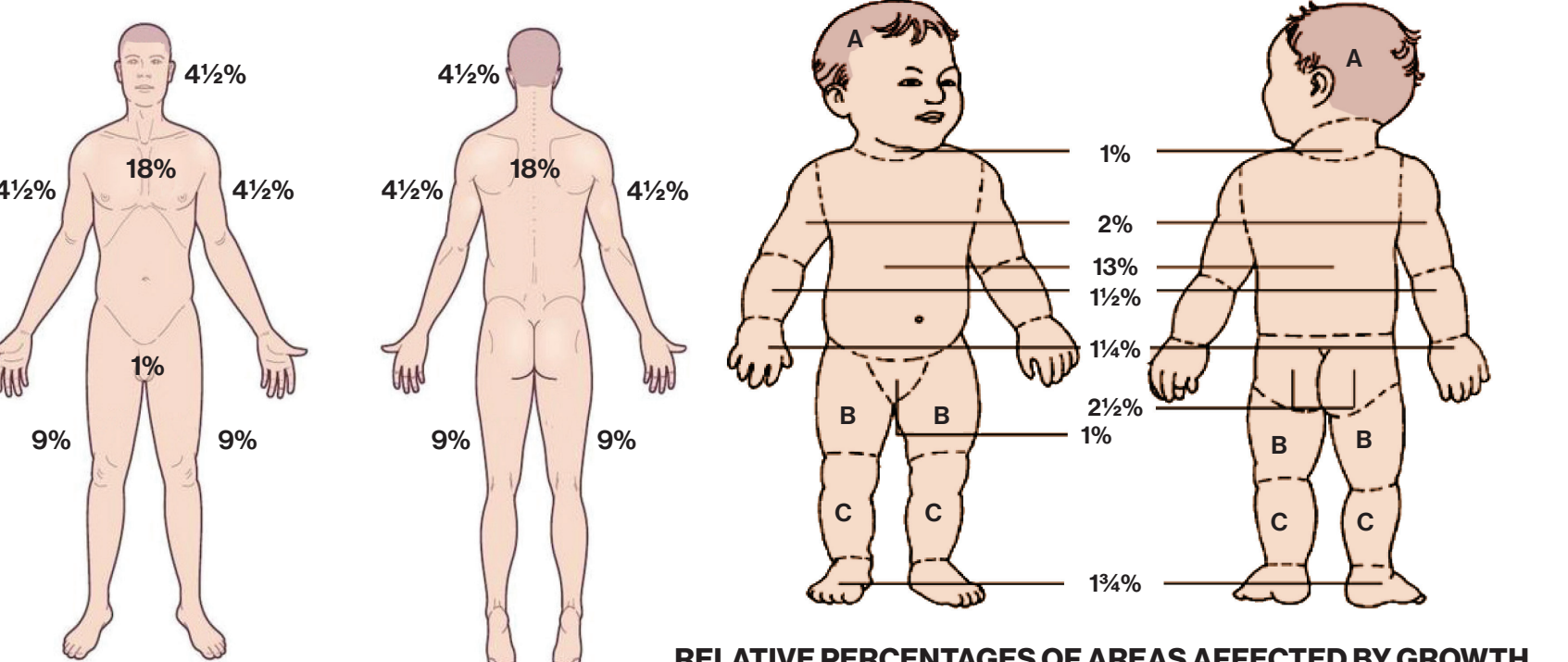
SECONDARY SURVEY

CONFIRM WEIGHT IN KG AND CALCULATE TBSA BURNED

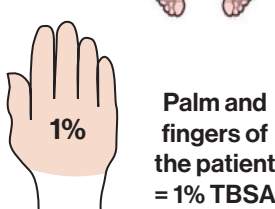
Only 2nd & 3rd degree burns are calculated

Adults – Use Rule of Nines:

Pediatrics – Use Lund & Browder:



Scattered/patchy burns



Palm and fingers of the patient = 1% TBSA

	AT BIRTH	0 TO 1 YR	1 TO 4 YR	5 TO 9 YR	10 TO 15 YR	ADULT
A: Half of head	9½%	8½%	6½%	5½%	4½%	3½%
B: Half of thigh	2½%	3½%	4%	4½%	4½%	4¼%
C: Half of leg	2½%	2½%	2¾%	3%	3¼%	3¼%

BURN DEPTH CLASSIFICATION



ADJUSTED FLUID RATE

Based on weight and TBSA burned

Adult:
2 mL LR × kg × % TBSA

Pediatric:
3 mL LR × kg × % TBSA

Electrical injury:
Adult & Pediatric
4 mL LR × kg × % TBSA

Give ½ of this fluid in first 8 hours from time of injury

Insert foley catheter & titrate fluid resuscitation to urine output

Adjust volume of fluid according to urinary output & clinical response

Hourly urine output goal:

Pediatrics ≤ 30kg = 1 ml/kg/hr
Adult & children > 30kg = 30-50ml/hr

Electrical injury with myoglobinuria:
Adult: 75-100mL/hr
Children: ≤30kg at 1-1.5mL/kg/hr
Until urine clears

UNIQUE BURN INJURIES

Electrical

Wounds/Burns: may appear minor but damage can extend deep into tissues

Consider voltage, duration of contact, LOC, concurrent injuries

Risk for cardiac arrhythmias:

- 12 Lead ECG
- 24 hour cardiac monitoring in high voltage or ectopy

Monitor for:

- Compartment syndrome
- Dark urine: Risk for rhabdomyolysis! Monitor CK & urine myoglobin
- Follow increased fluid & urine output guidelines at left

Chemical

Don Personal Protective Equipment
Remove clothing, footwear and jewelry
Brush off all dry agents (dry brush, towel) from skin

Initiate continuous irrigation with copious amounts of warm water
Consult Poison Control Centre 1-902-470-8161 and WHMIS

Asphalt or Tar

Burn to tissues may be deep!

Irrigate with cool water until product completely cooled

After cooling: Emulsify tar with petrolatum based ointment: Vaseline or Polysporin

Do not peel tar

Emulsification for tar removal may take several days

Cold Injuries

Remove damp clothing and apply warm blankets
Provide hot fluids by mouth if patient alert, able to drink and no contraindications to oral fluids

Affected limbs are rewarmed by immersion in gently circulating water at a constant 40-42°C for 15-30 minutes:

- Hands/arms: in clean large basin/bowl with warm running water
- Feet/legs: if patient able and accompanied, use a shower stall with warm running water
- Do not rub or massage areas

Excessive dry heat can cause a burn injury during rewarming

The extremity should be elevated once rewarmed

Rewarming can be very painful: assess and provide adequate analgesia

Call Toll Free Trauma Referral System

1-877-872-6247

Call early for consult with Trauma Control Physician and specialists, including timely transfer when required.

CONSULTATION CRITERIA:

- 2nd degree burns > 10% TBSA
- 3rd degree burns, any age group
- Pediatric patient with any significant burn
- Burns to face, hands, feet, genitalia, perineum or major joints
- Inhalation injury
- Electrical including lightning injury
- Chemical burns
- Burns with co-morbidities that could complicate management or affect mortality
- Burns and concomitant trauma

REMEMBER!

- ✓ Do not over or under-resuscitate
- ✓ Patients being transferred for definitive care should not have any ointments or creams applied
- ✓ Prevent hypothermia
- ✓ Monitor glucose levels in children ≤ 30kg
- ✓ Assess & manage pain
- ✓ Confirm tetanus status
- ✓ Psychological support for patient & family
- ✓ Does your team need debriefing?