PURPOSE

This presentation will provide an overview of care of the burn patient, including determining level of care required for the injury and how to begin resuscitation protocols.

OBJECTIVES

At the end of the session, the attendee will be able to:

- Discuss initial care of the burn patient
- Classify depth of injury & assess total body surface area (TBSA) affected
- Implement fluid resuscitation formulas
- Apply American Burn Association (ABA) guidelines to determine appropriate placement of the burn patient

SKIN

- Largest organ
- Functions
- Anatomy
- Epidermis
- Dermis

BURN PATHOPYSIOLOGY

- Tissue damage
- Inflammation cascade
- Increased vascular permeability
- Increased SVR
- Decreased cardiac output
- Hypermetabolic state
- Catabolic
TYPE OF BURN INJURIES

- Thermal
- Scald - water/grease
- Flame - fire/flash
- Contact
- Electrical
- Chemical
- Inhalation

SCALD BURN

Line of demarcation

FLAME BURN

CONTACT BURN

ELECTRICAL INJURY

CHEMICAL BURN
ASSESSING WOUND DEPTH

SUPERFICIAL (1ST DEGREE)
- Superficial: epidermis only
- Pink, painful, no blisters or open areas
- Do not count in TBSA

PARTIAL THICKNESS (2ND DEGREE)
- Partial: epidermis and dermis
- Pink, moist, blistered/open
- Superficial to deep – blanching?

FULL THICKNESS (3RD AND 4TH DEGREE)
- Full: beyond dermis
- White/black/dry

ASSESSING % TBSA
- Add up affected area (not including superficial burns)
- Rule of 9’s
- Lund & Browder
- Palmar Method

ASSESSING % TBSA
- Rule of 9’s: adult and pediatric

Image retrieved from: www.gpianatomicals.com
**FLUID RESUSCITATION**
- Use lactated ringers
- Greater than 15%, dehydrated, intoxicated, inhalation, electrical
- Consensus formula
- \( 2-4 \text{ml} \times \text{TBSA} \times \text{weight in kilograms} = 24 \text{ hour total fluid goal} \)
- 1st half given over 8 hours (from time of injury), 2nd half over next 16 hours
- Urine output guides fluid titration
  - Adult: 0.5ml/kg/hour
  - Pediatric: 1ml/kg/hour

**When a burn patient rolls in…**

*Remember*
Burns can be visually intimidating…
Don’t get caught up in the burn –
Think ABC’s first

**PRIMARY SURVEY**
- A: Airway & c-spine
- Intubate? Swelling peaks in 12 hours
- B: Breathing
- C: Circulation
- D: Disability
- E: Expose

**SECONDARY SURVEY**
- F: Focused adjuncts
- G: Give comfort
- IV pain medications
- H: Head to toe assessment & History
- I: Inspect posterior
DECISION TIME: TRANSFER, KEEP, OR DISCHARGE?

AMERICAN BURN ASSOCIATION (ABA) BURN REFERRAL CRITERIA

- Partial thickness > 10% TBSA
- Full thickness burns
- Burns of face, hands, feet, genitals, perineum, major joints, circumferential
- Electrical, chemical, inhalational injury
- Patients with co-morbidities, psychosocial, rehab issues that could affect treatment
- Burns/trauma where patients where burn injury is most concerning – stabilize first
- Pediatric patients in a non-pediatric setting

TRANSFER TO NEAREST BURN CENTER

- List of ABA verified burn centers by state is available at: www.ameriburn.org
- Contact burn center with following info:
  - Patient name, age, DOB
  - Past medical/surgical history, allergies, home medications, tetanus status
  - Date, time, location, cause of injury
  - Estimated TBSA, weight, which areas are burned
  - Current condition, including vital signs
  - Lines, access
  - Treatments (home, EMS, ED)
  - Amount & type of IVF given
- REMEMBER:
  - CLEAN, DRY DRESSINGS (GAUZE, LINEN) do not wash, debride, or apply any medication to the wounds
  - IV pain meds
  - Start fluid resuscitation

 POTENTIAL BURN COMPLICATIONS

- Neuro
- Cardiac
- Pulmonary
- GI/GU

BURN CENTER TREATMENT PRACTICES

- Shave any hair in the wound
- Debride dead tissue/blisters except for palms/soles (aspirate)
- Take photos
- Dressing changes twice a day
- Silvadene: open areas, not for sulfa allergy or pregnant patients
- Sulfamylon: full thickness, cartilage
- Bactracin/polysporin: lips

WOUND DEBRIDEMENT

- [YouTube Video: https://www.youtube.com/watch?v=YoWklyZmz3Y](https://www.youtube.com/watch?v=YoWklyZmz3Y)

SURGICAL INTERVENTIONS

- Biobrane
**Treatment Modalities for Burn Patients**

### Autograft
- Mesh graft
- Sheet graft

### Donor site

### Allograft

### Escharotomy/Fasciotomy

**QUESTIONS?**

Christa.Woodley@uchospitals.edu