

JTS BURN RESUSCITATION WORKSHEET

Initiate AFTER completion of trauma assessment and interventions

Adults only: Refer to Burn CPG for pediatric specific recommendations

1. Contact USAISR Burn Center (DSN 312-429-2876) or email: burntrauma.consult.army@health.mil

Date/Time contact: _____ POC: _____ by: _____

2. Estimated Pre-burn Weight (wt): _____ kg (Average Service Members are 82 ± 15 kg)

3. Estimate Total Burn Surface Area (TBSA) using Rule of Nines (refine with Lund-Browder after wounds are cleansed)

Partial thickness (2nd) _____% + Full thickness (3rd) _____% = **TBSA** _____%

IF TBSA >40%: intubate (use ETT ≥ 7.5 fr to facilitate bronchoscopy)

IF TBSA <15%: formal resuscitation may not be required, provide maintenance and/or oral fluids

4. Standard Burn Resuscitation Fluid: Lactated Ringers (LR) or Plasmalyte

5. Calculate INITIAL Fluid Rate using Rule of 10 (adults):

- IF wt < 40kg: $2\text{ml} \times \%TBSA \times \text{wt}(\text{kg}) \div 16 =$ _____ ml/hr
- IF wt ≥ 40 kg: $\%TBSA \times 10 =$ _____ ml/hr
 - IF wt > 80kg: add 100ml/hr to initial rate for every 10 kg > 80: adjusted initial fluid rate = _____ ml/hr
 - (Example: 100kg patient with 50% TBSA burn = $50\% \times 10 = 500$ ml + 200 ml = 700 ml for first hour)

6. If Inhalation Injury Present: administer aerosolized heparin in albuterol (5,000 units Q4 hours)

7. Titrate Resuscitation Fluid: maintain target **UOP 30-50ml/hr** (Q 1 hour)

- If rhabdomyolysis present: use target UOP 75-100 ml/hr (Contact USAISR Burn Center DSN 312-429-2876)
- Goals: UOP >30 but <50ml/hr; adequate tissue perfusion (normalized lactate/base deficit), MAP >55 mmHg
- Minimum fluid rate 125mL/hr LR
- * Avoid fluid boluses
- ** Too much fluid as dangerous as too little

High risk for over resuscitation/abdominal compartment syndrome:

- If hourly rate >1500mL/hr x 2 hrs OR
- If total 24 hr volume exceeds: $\text{wt}(\text{kg}) \times 250\text{ml} =$ _____ ml (includes all infused fluids)
 - Contact USAISR Burn Center (DSN 312-429-2876)
 - Consider adjuncts (below)
 - Check bladder pressures Q4hrs (>20 mmHg notify physician)
 - Avoid surgical decompression (significant mortality risk in burns)

Adjuncts:

1. Colloids: 5% albumin/FFP (Hextend only if others unavailable)
 - * Colloids not preferred until hour 8-12; can consider earlier in difficult resuscitation
 - Infuse at ml/hr according to chart below based on adult patient weight and burn size
2. Vasopressors: Contact USAISR Burn Center (DSN 312-429-2876)

| 5% Albumin Infusion (ml/hr) | 30-49%TBSA | 50-69% TBSA | 70-100% TBSA |
|-----------------------------|------------|-------------|--------------|
| <70 kg | 30 | 70 | 110 |
| 70-90 kg | 40 | 80 | 140 |
| >90 kg | 50 | 90 | 160 |

Ensure adequate volume (CVP trend 6-8 cm H₂O); maintain MAP > 55 mmHg

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- Maintain ionized Ca >1.1 mmol/L
- Start with vasopressin 0.04mg/min. **DO NOT TITRATE**
- Second line pressor: norepinephrine 2-20mcg/min
- Refractory shock: consider epinephrine or phenylephrine infusion
- Refractory shock: consider adrenal insufficiency, give hydrocortisone 100mg IV Q8 hrs
- Manage acidemia (pH<7.2): use ventilator interventions first, then bicarbonate or THAM infusion
- Renal replacement therapy if available (Contact USAISR Burn Center DSN 312-429-2876)

Assessment/Interventions:

- Complete full secondary trauma exam
- Ensure thermoregulation; administer warmed fluids; cover with space blanket; elevate burned extremities
- Superficial burn (1st degree): Sunburn, no blister, blanch readily; NOT included in TBSA
- Partial thickness (2nd degree): Blanch, moist, blisters, sensate
- Full thickness (3rd degree): Leathery, white, non-blanching, dry, insensate, thrombosed vessels
- Protect eyes with moisture shields if corneas exposed or blink reflex slow; apply ophthalmic erythromycin ointment at least Q2hrs.
- **Prompt intubation for facial burns, suspected inhalation injury, TBSA >40%**
 - Anticipate induction-associated hypotension
 - Secure ETT with cloth tie, not adhesive tape
 - Reassess ETT position at teeth Q1 hr as edema develops and resolves
 - Intubated patients require oro/naso-gastric tube for decompression
 - Administer IV proton-pump inhibitor
- Monitor bladder pressure at least Q4hrs for large burns or high volume resuscitations
 - Abdominal compartment syndrome: decreased UOP, increased pulmonary pressures, difficulty ventilating, bladder pressure remains > 20 mmHg
 - Avoid decompressive laparotomy; consider percutaneous peritoneal drainage
 - Reduce crystalloid volume using colloid or vasopressors
- Monitor pulses hourly: palmar arch, dorsalis pedis, posterior tibial with Doppler
 - Consider escharotomy if signal diminished; refer to Burn CPG for technique (Call USAISR Burn Center DSN 312-429-2876)
- Monitor extremity compartment pressures as clinically indicated
 - Elevate burned extremities at all times
 - Extremity compartment syndrome: pain, paresthesia, pallor, paralysis, pulselessness (late sign)
 - Fasciotomy may be required
- Wound care
 - Thoroughly cleanse burn wounds, preferably in Operating Room
 - Select topical antimicrobial in consultation with Burn Surgeon (Call USAISR Burn Center DSN 312-429-2876) based on product availability, expected transport time, etc
 - Acceptable to cover burns with dry sheets or clean dressings for first 48 hours
- All definitive burn surgery done at USAISR Burn Center for US Service Members (DSN 312-429-2876)