

SYMPTOMS: Patients sustaining thermal burns.

AIRWAY BURNS: **Activate ALS!**

Assessment, Treatment and Interventions

ALL LEVELS

1. Assure scene safety.
2. Consider the event.
 - a. Trauma in addition to burns
 - b. Inhalation exposures (CO, cyanide)
 - c. Pediatric or elder abuse.
3. Assess ABCs.
4. Stop the burning:
 - a. Remove wet clothing (if not stuck to the patient).
 - b. Remove jewelry
 - c. Leave blisters intact.
5. Minimize burn wound contamination:
 - a. Cover burns with dry dressing or clean sheet.
 - b. Do not apply gels or ointments.
6. Assess airway burns. (Can rapidly lead to upper airway obstruction and respiratory failure.)
Patient may present with:
 - a. Stridor, hoarse voice
 - b. Redness, blister, soot, singed hairs around mouth and nose
 - c. Rapid, shallow breathing; wheezes, cracklingIf evidence of airway burns, activate ALS early.
7. Prevent systemic heat loss and keep the patient warm.
8. Estimate the Total Burn Surface Area (TBSA) using the rule of nines based on second- and third-degree burns. (Chart/Rule of Nines next pages.)
 - a. Estimate the depth of burns
 - b. Evaluate distal circulation in burned extremities.
9. Consider SpCO (carbon monoxide) monitoring, if available.

EMR-O; EMT-R

10. Assess vital signs including pain scale.
11. Monitor SpO₂ and ETCO₂.
12. Administer oxygen as appropriate for dyspnea or distress with a target of achieving greater than 93% saturation for most acutely ill patients.
 - a. Administer high-flow oxygen for all burn patients rescued from an enclosed space.
 - b. Assist respirations as needed.

EMT-O

13. Apply cardiac monitor.

AEMT-R

14. Establish IV access. Avoid placement through burned skin.
15. Initiate fluid resuscitation using normal saline per the [Shock guideline \[M-13\]](#).

AEMT-O

16. Consider fluid resuscitation using lactated Ringer's as appropriate.

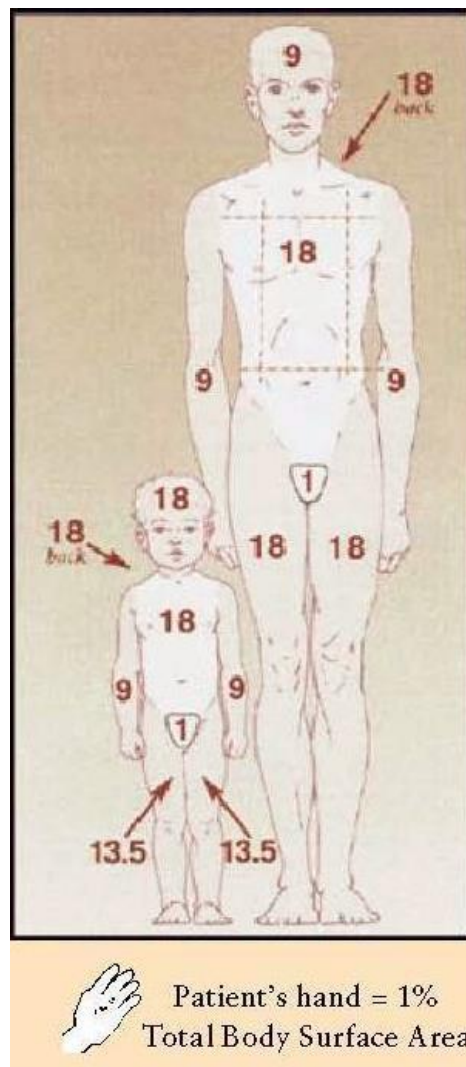
INT-R

17. Interpret ECG and ETCO₂

Special Treatment Considerations

- Consider cyanide poisoning in a patient with depressed GCS, respiratory difficulty and cardiovascular collapse in the setting of an enclosed space fire.
- Carbon monoxide toxicity particularly in enclosed space fires, may affect the accuracy of pulse oximetry. (See [Carbon Monoxide/Smoke Inhalation guideline \[EE-2\]](#).)
- For specific chemical exposures (cyanide, hydrofluoric acid, other acids and alkali) see [Topical Chemical Burn guideline \[EC-7\]](#).
- Consider decontamination and notification of receiving facility of potentially contaminated patient (e.g, methamphetamine [meth] lab incident).

Burn Size Chart 1



Source: Used with permission, University of Utah Burn Center

Percentage of Total Body Surface Area by Age, Anatomic Structure, and Body Habitus

<i>Adult</i>	
Anatomic Structure	Surface Area
Anterior head	4.5%
Posterior head	4.5%
Anterior torso	18%
Posterior torso	18%
Anterior leg, each	9%
Posterior leg, each	9%
Anterior arm, each	4.5%
Posterior arm, each	4.5%
Genitalia, perineum	1%

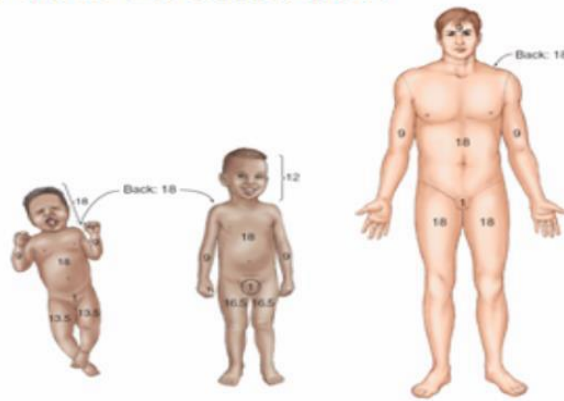
<i>Child</i>	
Anatomic Structure	Surface Area
Anterior head	9%
Posterior head	9%
Anterior torso	18%
Posterior torso	18%
Anterior leg, each	6.75%
Posterior leg, each	6.75%
Anterior arm, each	4.5%
Posterior arm, each	4.5%
Genitalia, perineum	1%

<i>Adult – Obese 80 kg</i>	
Anatomic Structure	Surface Area
Head and neck	2%
Anterior torso	25%
Posterior torso	25%
Leg, each	20%
Arm, each	5%
Genitalia, perineum	0%

<i>Infant 10 kg</i>	
Anatomic Structure	Surface Area
Head and neck	20%
Anterior torso	16%
Posterior torso	16%
Leg, each	16%
Arm, each	8%
Genitalia, perineum	1%

Burn Size Estimation

- Rule of 9's for adults
- Palmar surface (including fingers) equals 1% of child's body surface.



Burn Size Chart 2

Source: American Heart Association, *Pediatric Advanced Life Support Textbook*, 2013