

## BURNS

### PATIENT CARE GOALS

- Treat burns and other associated injuries while ensuring adequate oxygenation, ventilation, and perfusion.
- Protect burned areas from contamination and infection.
- Provide relief of pain and anxiety.
- Maintain body temperature and prevent hypothermia.

### EMT

1. Assess the patient and provide initial care, including oxygen and vascular access, as per **Guideline A.2 General Assessment and Care**.
2. If necessary, stop the burning process by rinsing the burned areas with copious amounts of cool sterile water <sup>1</sup>.
  - Water-Jel may be applied immediately instead of cooling burn with water.
  - Remove clothing and jewelry from the injured areas unless stuck to the skin.
  - Avoid the use of cool water when > 25% BSA burn.
3. If facial burns are present or if smoke or products of combustion were involved, administer high flow oxygen via NRB and evaluate for inhalation injury or contamination. Be prepared to aggressively manage the airway.
4. Determine the extent of body surface area (BSA) involved and the degree and type of burn (thermal, electrical, chemical, friction, or radiation).<sup>2</sup> Check for associated injuries (consider the need for spinal immobilization).
5. If IV fluids are needed to maintain perfusion, infuse warmed normal saline if available.
6. Provide additional treatments specific to the type and location of the burn.

#### Thermal Burns

- If involved BSA is less than 25% partial thickness or less than 2% full thickness burns, cool the burned areas with Water-Jel.
- If involved BSA is greater than 25% partial thickness or great than 2% full thickness burns, cover no more than 25% of burn with Water-Jel and protect the remaining areas with a dry, clean burn sheet. Do not apply Kerlex<sup>®</sup>, gauze, or other dressing to wounds.
- Carefully monitor distal circulation in burned extremities.

#### Chemical Burns

- If chemical is a liquid flush contaminated skin with copious amounts of water. If skin is contaminated with a dry chemical, brush off the contaminant before flushing.

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MEDICAL TRANSPORTATION  
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Burns

- If a chemical is in the eyes, treat as per **Guideline I.3 Eye Injuries**.  
If involved BSA is less than 25% cover with Water-Jel.
- If involved BSA is greater than 25% partial thickness or great than 2% full thickness burns, cover no more than 25% of burn with Water-Jel and protect the remaining areas with a dry, clean burn sheet. Do not apply Kerlex<sup>®</sup>, gauze, or other dressing to wounds.
- Contact Medical Control for treatment directions when the burn agent is also listed as a regulated hazardous material.
- Record any antidotes used prior to arrival.

**Tar Burns**

- Flush skin with copious amounts of water.
- If involved BSA is less than 25% cover with Water-Jel.
- If involved BSA is greater than 25% partial thickness or great than 2% full thickness burns, cover no more than 25% of burn with Water-Jel and protect the remaining areas with a dry, clean burn sheet. Do not apply Kerlex<sup>®</sup>, gauze, or other dressing to wounds.
- Do not attempt to remove tar.

7. Consider transport to a burn center if available and if burn center criteria are met (a trauma center may be the destination of choice for unstable patients). Consult Medical Control as needed for direction.<sup>3</sup>

**PARAMEDIC**

ADULT	PEDIATRIC (less than 50 kg)
8. Treat pain as outlined in <b>Guideline A.3 Pain, Sedation, and Nausea Management</b> . 9. Provide a 20-40 mL/kg IV fluid bolus. 10. Consider early endotracheal intubation for patients with evidence of actual or impending airway compromise. <sup>5</sup>	8. Treat pain as outlined in <b>Guideline A.3 Pain, Sedation, and Nausea Management</b> . 9. Provide an IV fluid bolus as per the <b>Handtevy Pediatric Guidelines</b> . <sup>4</sup> 10. Consider early endotracheal intubation for patients with evidence of actual or impending airway compromise. <sup>5</sup>

**DOCUMENTATION KEY POINTS**

- Mechanism(s) of injury, including type of heat or other mechanisms causing the burns, duration of exposure, and confined space involvement.
- Extent of body surface area involved and degree of burns.
- Clinical findings indicated associated injuries
- Fluids infused.
- Pain medication administered.

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**NOTES**

<sup>1</sup> **Cooling water:** 15-20 degrees Celsius (59-68 degrees Fahrenheit). It is acceptable to apply Water-Jel instead of cooling burn with water.

<sup>2</sup> **Body surface area (BSA)** may be calculated using the “Rule of Nines”. Also, the palm of the patient’s hand equals approximately 1% of total body surface area.

<sup>3</sup> **American Burn Center Criteria** for recommended admission to a burn center are:

- 2nd/3rd-degree burns greater than 10% of TBSA in patients less than 10 or greater than 50 years of age.
- 2nd/3rd-degree burns greater than 20% of TBSA in patients 10 to 50 years of age. Any patient with burns over more than 20% of TBSA needs circulatory volume support.
- 3rd-degree burns greater than 5% of TBSA in patients of any age.
- All 2nd/3rd-degree burns with threat of functional or cosmetic impairment to face, hands, feet, genitalia, perineum, and major joints.
- Electrical burns, including lightning.
- Burns involving inhalation injury.
- Circumferential burns of the extremities or chest.
- Burns involving concomitant trauma in which the burn injury poses the greatest risk of morbidity or mortality.
- Burns in patients with pre-existing medical conditions that may complicate management or prolong recovery (e.g., diabetes, chronic obstructive pulmonary disease, coronary artery disease).

<sup>4</sup> **Handtevy pediatric fluid bolus guidelines:**

- **Patients up to 4 months old:** Administer a 10 ml/kg normal saline bolus.
- **Patients 4 months to 11 years old:** Administer a 20 ml/kg normal saline bolus.
- **Patients greater than 11 years old:** Administer a 1 Liter normal saline bolus.

<sup>5</sup> Clinical indications of possible **inhalation injury** include:

- Facial burns.
- Carbonaceous sputum.
- Hoarse voice, frequent cough, inflammation and/or carbonaceous deposits in the oropharynx.
- History of impaired mentation, exposure to smoke and/or fire in a confined space, or explosion.

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