

Huntington Community First Aid Squad

Review Training **July 2026**

Fireworks and Burns

By Jake Levinsky

Suggested Time: 2 hours

Overview

July is when the Summertime activities start to pick up and one of the biggest celebrations we have. The 4th of July is one of the biggest celebrations in America, being celebrated by millions of people, and one of the hallmarks of the 4th of July is barbeque and of course firework shows. Most people love to see fireworks but there is an increase of injuries during that time that we as providers need to be prepared for.

Fireworks and the dangers

Fireworks are “pyrotechnic device that burns or explodes to produce brilliant colors, sparks, and loud noises” and can be an amazing spectacle with a huge variation in size and capabilities. With that, they can also be an extremely dangerous “toy”, and many kinds of injuries can occur due to them and an “estimated 9,700 people were treated in U.S. hospital emergency rooms for fireworks injuries”². Fireworks come in many different and broad categories, but the 2 main ones are “ground” and “aerials”.

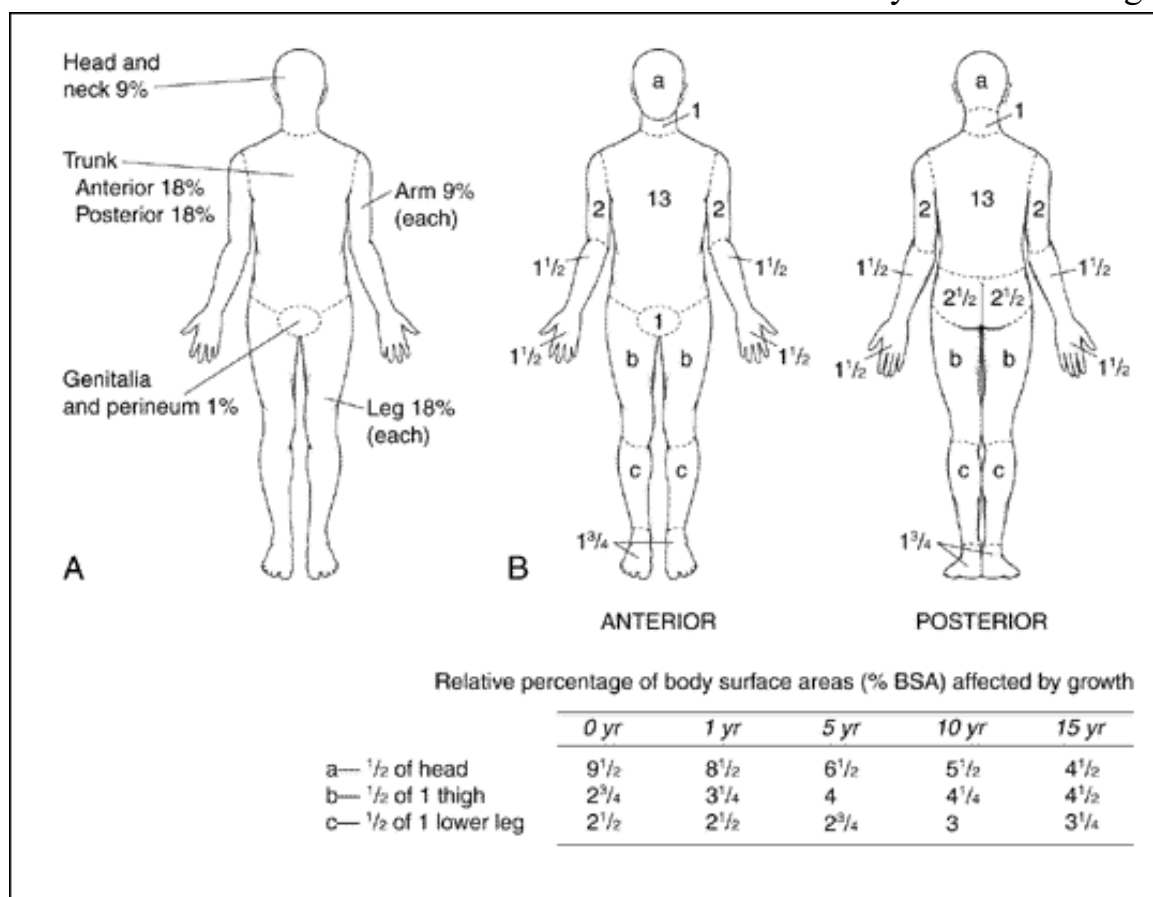
Aerials are fireworks that start on the ground and launch up before exploding and a few different types are mortars, rockets, and roman candles. These types of fireworks can be extremely dangerous since there is a risk of the projectiles hitting people causing major bodily injury. Another risk is from the falling debris, which can be hot as the exploded firework which can reach up to 500°F₂ and the cases and ash can reach up to 150°F₂.

Ground fireworks are also as dangerous or even more dangerous than aerial fireworks. Ground fireworks typically stay on the ground as they burn and a few different kinds are fire crackers, fountains, and sparklers. There is a risk with the use of these, especially with “children under the age of 15 which account for 31% of all related injuries”² and the improper handling of the fireworks. Firecrackers account for approximately 800 ER visits and, even though it’s been viewed safe for kids, sparklers account for 700 ER visits². Even though sparklers are regarded as safe, especially for children, they can reach temperatures as high as 2,000°F₃ which can cause extreme damage.

Firework related injuries

Fireworks can cause many kinds of injuries but an “estimated 42% of the emergency department-treated injuries were burns”² and the most common burn injuries were the “hands and fingers; head, face, and ears; arm; and leg regions”². These burns are caused by either the falling debris and the fireworks going off within the vicinity such as the person’s hand or standing next to it. Another injury that can occur is amputation of the fingers while a person is holding the fireworks. The primary type of fireworks that happens to be with firecrackers which are handheld fireworks, can go off right in the person’s hand while they are handling them.

When treating a burn injury, it is important to know much of the area is burned since that will determine whether to use moist or dry sterile dressing.



Burns can quickly turn for the worst for any patient, and it should be transported to the highest and most qualified hospital with a burn unit.

Burns

Applies to adult and pediatric patients

CFR AND ALL PROVIDER LEVELS

- Stop the burning
- ABCs and vital signs
- Airway management and appropriate oxygen therapy
- Remove smoldering clothing that is not adhering to the patient's skin
- Remove rings, bracelets, and constricting objects at or distal to burned area, if possible
- Cover the burn with dry sterile dressings
- Burns to the eye require copious irrigation with normal saline — do not delay irrigation
 - Other neutral fluid may be used, if needed, such as tap water
- Consider the potential for carbon monoxide poisoning and see as necessary “General: Carbon Monoxide Exposure – Suspected”

● CFR STOP

EMT

- Burns should be covered with dry, sterile dressings
 - Moist sterile dressings *may* be used to augment pain management *only* if the burn is $\leq 10\%$ BSA (body surface area)

● EMT STOP

Key Points/Considerations

- Assure scene safety and patient decontamination for chemical burns/HAZMAT exposure
 - For liquid chemical burns, flush with copious amount of water or saline, ideally for a minimum of 20 minutes
 - For dry powder burns, brush powder off before flushing
 - Use caution to avoid the spread of the contaminant to unaffected areas
- Consider other injuries, including cardiac dysrhythmias
- Consider smoke inhalation and airway burns
 - Administer high flow oxygen
 - Oxygen saturation readings may be falsely elevated
- If hazardous material involvement is suspected, immediately notify the destination hospital to allow for decontamination
- The whole area of the patient's hand (palm plus digits) is $\sim 1\%$ BSA (body surface area)
 - When considering the total area of a burn, DO NOT count first degree burns
- Burns $>10\%$ are *only* to be dressed with *dry* simple sterile dressings once the burning process has stopped as hypothermia is a significant concern in these patients

Transportation Considerations

- Burns associated with trauma should go to the closest appropriate trauma center
- Consider direct transport to a burn center in discussion with medical control

Other injuries that can occur are amputations, primarily with the hands. Fireworks can be extremely unpredictable, and it is best to keep as much distance as possible between you and the firework itself. It is also important as providers to secure any fireworks on scene, expended or not, since fireworks could be a dud or still be able to explode.

Amputation

Applies to adult and pediatric patients

CFR AND ALL PROVIDER LEVELS

- See as indicated “Trauma: Bleeding / Hemorrhage Control”
- ABCs and vital signs
- Elevate and wrap the stump with moist sterile dressings and cover with dry bandage
- Consider spinal motion restriction, see “Trauma: Suspected Spinal Injuries”
- Provide or direct care for amputated part:
 - Moisten sterile dressing with sterile saline solution and wrap amputated part
 - Place the severed part in a water-tight container, such as a sealed plastic bag
 - Place this container on ice or cold packs, using caution to avoid freezing the limb

● CFR STOP

EMT

ADVANCED

CC

PARAMEDIC

- If delayed extrication or arrival to definitive care:
 - Moxifloxacin 400 mg PO[‡] as regionally approved (Adults only)
 - Cefazolin 2 g (Adult) or 20 mg/kg (Pediatric) IV[‡]Ⓟ as regionally approved

● EMT, ADVANCED, CC AND PARAMEDIC STOP

Key Points/Considerations

- Transport the amputated part with the patient, if possible, but do not delay transport to search for amputated part
- Distal amputations (those distal to wrist or ankle) do not typically require a trauma center
- Consider medical control consultation if there is uncertainty regarding appropriate destination facility

Real World Scenarios

These are real scenarios that had occurred and what these training scenarios are based off of (all from the Fireworks Annual Report²). It is important to see these scenarios, as rare as they can be, and recognize the best and fastest course of treatment for them

Scenario One:

You arrive to find a 43-year-old male with a towel wrapped around his hand that is covered in blood. Patient stated that he was coming from home when he found a firecracker on the ground and decided to light it. The firecracker exploded almost immediately causing amputations to his right-hand thumb and index finger.

When treating a patient with these types of injuries, it is important to first stop all bleeding by first wrapping the injury and if needed, tourniquet. If the patient's amputated fingers can be found, wrap them and secure them so that it might be possible to reattach.

Scenario Two:

You arrive on scene to find a 9 year old female, covering her face and eyes. The patient was outside watching the fireworks when some debris entered the victim's left eye.

In this scenario, the first step should be to flush the patient's eye and then to cover both of their eyes to prevent movement of left over debris. Examining the eye to see if there was further damage such as scratches is also important to note.

References

1. NYS Collaborative Advanced Life Support Adult and Pediatric Patient Care Protocols https://www.suffolkremSCO.com/clientuploads/ny_collaborative_protocols_v25.1.pdf
2. United States Consumer Product Safety Commission. *2023 Fireworks Annual Report: Fireworks-Related Deaths, Emergency Department-Treated Injuries, and Enforcement Activities During 2023*. June 2024, [CPSC PDF Report](#).
3. United States Consumer Product Safety Commission. "Fireworks." *U.S. Consumer Product Safety Commission*, <https://www.cpsc.gov/Safety-Education/Safety-Education-Centers/Fireworks>.