2024 Guidelines for First Aid: Implications for Training Heartsaver® Students

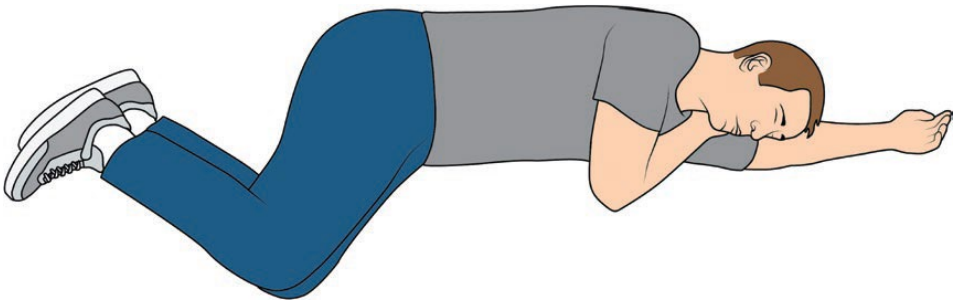
CPR & Emergency Cardiovascular Care

The "2024 American Heart Association and American Red Cross Guidelines for First Aid" contains updated and new recommendations. Recommendations most applicable to Heartsaver First Aid are listed below. The complete updates can be reviewed in the full 2024 Guidelines for First Aid and the *Highlights of the 2024 American Heart Association and American Red Cross Guidelines for First Aid*.

American Heart Association Heartsaver Instructors may need to be prepared to explain these new recommendations. No modifications to the course or course materials are required at this time. The American Heart Association is reviewing how these recommendations will be incorporated into future American Heart Association products and training.

Positioning of the Ill or Injured Person for First Aid (Updated)

- If a person requires CPR or rescue breathing (ie, is unresponsive with absent or abnormal breathing), the first aid provider should position the person supine and follow the CPR guidelines.
- A first aid provider who is assisting a person with a potentially serious illness or injury should immediately activate the emergency response system.
- A first aid provider who is assisting a person with a potentially serious illness or injury should remain with the person until trained rescuers arrive as long as it is safe to do so.
- An awake and alert person who is having difficulty breathing should be allowed to assume a position most comfortable for breathing, which will be sitting up in most situations.
- Individuals who are ill or injured should be protected from hyperthermia or hypothermia due to exposure.
- It is reasonable to position a person with decreased alertness of nontraumatic cause who is breathing normally in a recovery (side-lying) position.



Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 2: First Aid Basics: Duties and Key Steps
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 2: First Aid Basics: Duties and Key Steps
- *Heartsaver First Aid CPR AED Instructor Manual*; Part 6: Heartsaver First Aid CPR AED Lesson Plans, Blended Learning (In-Person Classroom) or Part 7: Heartsaver First Aid CPR AED Lesson Plans, Blended Learning (Virtual Classroom); Lesson 9: First Aid
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 6: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Blended Learning (In-Person Classroom) or Part 7: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Blended Learning (Virtual Classroom); Lesson 9: Pediatric First Aid

Use of Pulse Oximetry in First Aid (New)

- A physical examination and history should be the primary assessment methods for first aid providers to evaluate an ill or injured person.
- It is reasonable for first aid providers to use pulse oximetry results in the context of a complete assessment and be aware of the limitations of pulse oximetry before acting on any results.

Limitations of Pulse Oximeters

Patient factors	Device factors	Environmental factors
Chronic respiratory disease	Battery level/charge	Extremes of temperature
Nail thickness and nail paint or polish	Device condition such as being dusty, dirty, or damaged	Movement or vibration such as transportation
Heart rhythm and cardiac output	Size and orientation of light and sensor	Moisture and humidity
Skin thickness, perfusion, pigmentation, and temperature	Device accuracy and calibration (FDA categories): 1. Consumer product 2. Home-use medical devices 3. Medical device	Interference from direct external light sources, including sunlight

FDA indicates US Food and Drug Administration.

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 2: First Aid Basics: Duties and Key Steps
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 2: First Aid Basics: Duties and Key Steps
- *Heartsaver First Aid CPR AED Instructor Manual*; Part 6: Heartsaver First Aid CPR AED Lesson

Plans, Blended Learning (In-Person Classroom) or Part 7: Heartsaver First Aid CPR AED Lesson Plans, Blended Learning (Virtual Classroom); Lesson 9: First Aid

- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 6: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Blended Learning (In-Person Classroom) or Part 7: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Blended Learning (Virtual Classroom); Lesson 9: Pediatric First Aid

Use of Bronchodilators in Asthma (Updated)

- It is reasonable to use either an inhaler with a spacer or a nebulizer when assisting a person with asthma to use their own inhaled bronchodilator medication, in preference to using an inhaler alone.
- If a commercially available spacer is not available, it is reasonable to use an improvised spacer when assisting a person who is having an asthma attack to use their own inhaled bronchodilator medication.

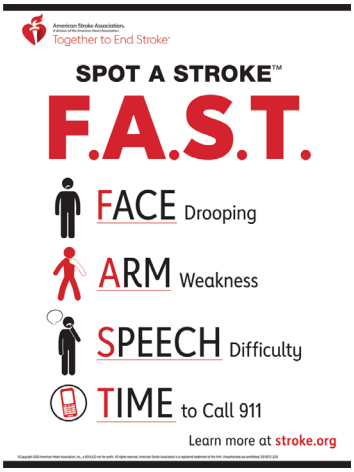
Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 4: Medical Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 4: Medical Emergencies

Recognition of Stroke in Adults (New)

- If stroke is suspected, the EMS system should be activated immediately.
- The use of a stroke recognition scale, such as the Face, Arms, Speech, Time (FAST) or Cincinnati Prehospital Stroke Scale, is recommended to aid in the recognition of acute stroke in adults.

The FAST (Face, Arms, Speech, Time) Stroke Recognition Tool



Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 4: Medical Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 4: Medical Emergencies

Recognition of Stroke in Children (New)

- If pediatric stroke is suspected, EMS should be activated, and the person should be transported to an emergency department.
- It is reasonable to consider stroke when common pediatric symptoms are present in association with other neurological signs and symptoms.
- Adult stroke scores are not validated in the pediatric population and should not solely be used to identify the broad presentation of stroke in children.

Common Signs and Symptoms of Stroke in Children

Focal signs and symptoms
Hemiparesis
Limb weakness
Facial droop
Altered sensation
Visual disturbance
Speech disturbance
General signs and symptoms
Altered mental status
Seizure
Headache
Ataxia
Vertigo/dizziness
Nausea/vomiting

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 4: Medical Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 4: Medical Emergencies

First Aid for Adults Experiencing Chest Pain (Updated)

- In adults with acute chest pain, the emergency response system should be activated to initiate transport to the closest ED by EMS.
- While awaiting the arrival of EMS, first aid providers may encourage alert adults experiencing nontraumatic chest pain to chew and swallow aspirin (162-325 mg), unless the person experiencing pain has a known aspirin allergy or has been advised by a health care professional not to take aspirin.
- If there is any uncertainty that aspirin should be taken, it is reasonable to wait for EMS arrival without administration of aspirin.

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 4: Medical Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 4: Medical Emergencies

First Aid for Anaphylaxis (Updated)

- If a person experiences anaphylaxis and an epinephrine autoinjector is available, the person should self-administer the autoinjector.
- A first aid provider should assist a person experiencing anaphylaxis to use their autoinjector if assistance is required.
- If a person experiences anaphylaxis, the emergency response system should be activated.

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 4: Medical Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 4: Medical Emergencies
- *Heartsaver First Aid CPR AED Instructor Manual*; Part 6: Heartsaver First Aid CPR AED Lesson Plans, Blended Learning (In-Person Classroom) or Part 7: Heartsaver First Aid CPR AED Lesson Plans, Blended Learning (Virtual Classroom); Lesson 9: First Aid
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 6: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Blended Learning (In-Person Classroom) or Part 7: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Blended Learning (Virtual Classroom); Lesson 9: Pediatric First Aid

Seizures (Updated)

- First aid providers should activate emergency medical services for individuals with first-time seizure; seizures lasting more than 5 minutes; more than 1 seizure that occurs without the person returning to baseline mental status in between; seizures occurring in the water; seizures with traumatic injuries, difficulty breathing, or choking; seizure in an infant younger than 6 months of age; seizure in pregnant individuals; or if the individual does not return to baseline within 5 to 10 minutes once seizure activity has stopped.

Reasons to Activate the Emergency Response System for Seizures

First-time seizure
Seizure in an infant <6 mo of age
Seizure lasting >5 min
Seizure in a person who is pregnant
>1 Seizure that occurs without return to baseline mental status in between
Person does not return to baseline within 5–10 min after seizure has stopped
Seizure with traumatic injuries
Seizure with choking
Seizure with difficulty breathing
Seizure occurring in the water

- First aid providers should minimize the risk of injury to the individual who is having a seizure by helping the person to the ground, placing the person on their side in the recovery position, and clearing the area around them.
- First aid providers should stay with the person having a seizure.
- For children who have experienced a febrile seizure, administration of antipyretics such as acetaminophen, ibuprofen, or paracetamol is not effective for stopping a seizure or preventing a subsequent febrile seizure.
- The person having the seizure should not be restrained.
- Nothing should be put in the mouth and no food, liquids, or oral medicines should be given to a person who is experiencing a seizure or who has decreased responsiveness after a seizure.

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 4: Medical Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 4: Medical Emergencies

First Aid for Hypoglycemia[Low Blood Sugar] (Updated)

- For a person with suspected hypoglycemia who is awake and able to swallow, the first aid provider should encourage the person to swallow oral glucose.
- EMS should be activated for a person with hypoglycemia who is unable to swallow, has a seizure, or does not improve within 10 minutes of oral glucose administration.
- If they are available, it is reasonable to use oral glucose tablets in preference to gel or dietary sources of glucose to treat hypoglycemia.

- It is reasonable to use simple dietary sugars as an alternative if glucose tablets or gel are not available to treat hypoglycemia.
- For children with suspected hypoglycemia who are awake but unwilling or unable to swallow glucose, it may be reasonable to apply a slurry of granulated sugar and water under the tongue.
- Oral glucose should not be administered to people who are not awake or not able to swallow.

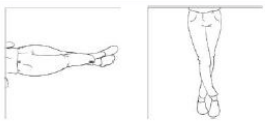
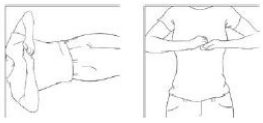
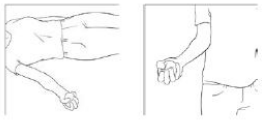
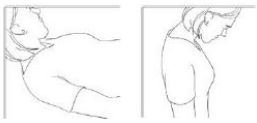
Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 4: Medical Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 4: Medical Emergencies

First Aid for Presyncope

- If a person experiences signs or symptoms of presyncope (including pallor, sweating, lightheadedness, visual changes, and weakness) of vasovagal or orthostatic origin, that person should maintain or assume a safe position such as assisted sitting or lying down.
- Once the person with presyncope is in a safe position, it can be beneficial for that person to use physical PCMs [physical counterpressure maneuvers] to avoid syncope.
- Lower-body PCMs may be preferable to upper-body and abdominal PCMs in first aid for presyncope.
- If no improvement occurs within 1 to 2 minutes, if syncope occurs, or if symptoms worsen or reoccur, the first aid provider should activate emergency services.
- The use of PCMs is not recommended when symptoms of a heart attack or stroke accompany presyncope.

Physical Counterpressure Maneuvers

Method	Description	Illustration
Lower-body PCMs		
Leg crossing with muscle tensing	Leg crossing with tensing of the leg, abdominal, and buttock muscles while lying down or, if necessary, while standing	
Squatting	Lowering the body into a squatting position. Adjunctive lower-body and abdomen muscle tensing can be done during the squat and then on standing once symptoms have resolved.	
Upper-body PCMs		
Arm tensing	Gripping opposing hands with fingers and pulling with arms in opposing directions with maximum force	
Isometric handgrip	Clenching fist at maximum contraction with or without an item in the hand	
Neck flexion	Touching the chin to the chest and tightening the neck musculature	

PCM indicates physical counterpressure maneuver.

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 4: Medical Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 4: Medical Emergencies

Bee and Wasp Stings (New)

- If a person experiences anaphylaxis due to a bee, wasp, or hornet sting and an epinephrine autoinjector is available, the person should self-administer the autoinjector.
- A first aid provider should assist a person experiencing anaphylaxis to use the auto-injector if assistance is required.
- If a person experiences anaphylaxis due to a bee, wasp, or hornet sting, the emergency response system should be activated.
- Stings to the eye should be evaluated by a trained medical professional.
- Removal of a stinger remaining in the skin, as soon as possible, by plucking or scraping, can be beneficial.
- Over-the-counter oral antihistamines can be used to alleviate local itching.
- Topical corticosteroids can be used to alleviate local itching.
- It is reasonable to wash the area of a bee, wasp, or hornet sting with soap and water.
- Administration of over-the-counter acetaminophen and nonsteroidal anti-inflammatory agents may be considered to alleviate local pain.

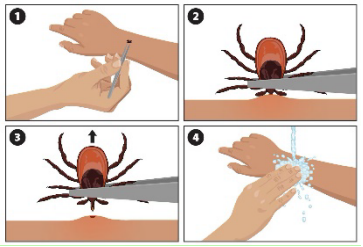
- Administration of ice or cold packs may be considered for local pain relief.

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 8: Environmental Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

Tick Bites (New)

- Tick bites occurring in regions with high prevalence of Lyme disease should receive prompt consultation with a health care professional within 72 hours after removal of an engorged tick.
- We recommend removal of a tick as soon as possible.
- To remove a tick, we recommend grasping the head of the tick as close to the skin as possible with tweezers or a commercial tick removal device and pulling upward with steady, even pressure.



Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 8: Environmental Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

Poison Ivy, Poison Oak, and Poison Sumac (New)

- As soon as exposure to poison ivy, oak, or sumac is recognized, the exposed area should be washed with soap and water or a commercially available decontamination product.
- Cool compresses may be considered for relief of local symptoms from exposure to poison ivy, oak, or sumac.
- Oatmeal baths may be considered for relief of local symptoms from exposure to poison ivy, oak, or sumac.
- The usefulness of over-the-counter topical steroids to alleviate local symptoms from poison ivy, oak, or sumac is uncertain.
- The usefulness of over-the-counter antihistamines to alleviate local symptoms from poison ivy, oak, or sumac is uncertain.

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson

Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 8: Environmental Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

Snake Bite (Updated)

- Emergency services should be activated for any person bitten by a venomous or possibly venomous snake.

Location	EMS	Poison center
United States	911	1-800-222-1222
Canada	911	1-844-764-7669 (1-844-POISON-X)

- It is reasonable to rest and immobilize the bitten extremity and minimize exertion by the person who was bitten if it does not delay access to emergency medical care.
- It is reasonable to remove rings and other constricting objects from the bitten extremity.
- Application of ice to a snakebite wound is of unproven benefit and may be harmful in some situations.
- The use of suction to treat snake bites is potentially harmful.
- The application of electric shock to treat snake bites is potentially harmful.
- The use of tourniquets to treat snake bites is potentially harmful.
- The use of pressure immobilization bandaging to treat snake bites is potentially harmful.

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 8: Environmental Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

Jellyfish Stings (Updated)

- A first aid provider should observe a person with a jellyfish sting for systemic reaction and call emergency services for difficulty breathing, signs of shock, or severe pain.
- It is reasonable to remove any remaining tentacles by lifting or pulling while avoiding manual contact. Rinsing the affected area with seawater to remove the tentacle is a reasonable alternative if mechanical removal is not available.
- After removal of tentacles, it is reasonable to use nonscalding hot water immersion/irrigation or to apply a heat source to relieve pain.
- Topical lidocaine cream or gel may be reasonable for pain control if hot water is not available.

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 8: Environmental Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

Spider Bites and Scorpion Stings (New)

- Emergency services should be called if a person bitten by a spider or stung by a scorpion develops symptoms throughout the body, such as difficulty breathing, muscle rigidity, dizziness, or confusion.
- A person bitten by a spider or stung by a scorpion should seek medical care if pain extends beyond the site of the bite/sting, becomes severe, and is not controlled by over-the-counter pain medications; if an open wound develops; or if the person experiences symptoms throughout the body.
- Over-the-counter acetaminophen and nonsteroidal anti-inflammatory agents can be used to alleviate local pain from scorpion stings.
- If the skin is intact, topical lidocaine can be useful to relieve local pain from scorpion stings.
- Ice can be useful for local pain relief from scorpion stings.

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 8: Environmental Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

Hypothermia (Updated)

- A person with signs and symptoms of hypothermia should be protected from further heat loss by moving from the cold environment to a warm one, having saturated clothing removed, being allowed to passively rewarm with blankets, and being actively rewarmed if resources are available.
- If a person with hypothermia cannot be immediately moved from a cold environment to a warm one, they should be protected from further heat loss by insulation from the ground, covering of head and neck, and shielding from heat loss by wind using a plastic or foil layer in addition to a dry insulating layer.
- When using rewarming devices of any kind, the first aid provider should follow the manufacturer's instructions for the device used, place insulation between the heat source and skin, and frequently monitor for burns and pressure injury.
- If a person with hypothermia has a decreased level of responsiveness such as unresponsiveness, inability to remain awake, mumbling speech, confusion, the inability to participate in removal of clothing or has pallor, cyanosis, or frozen skin, the emergency response system should be activated while the person is rewarmed by any available method.
- For patients experiencing cold stress or mild hypothermia who are alert and can safely consume oral food or fluids, it is recommended to provide high-calorie foods or drinks.
- If a hypothermic person with a decreased level of responsiveness is wearing damp (not saturated) clothing such as polyester fleece and cannot be immediately moved into a warm environment, active rewarming through the damp clothing is reasonable to initiate with the hypothermia wrap technique, using chemical heat blankets, plastic or foil layers, and insulative blankets.

- It is not beneficial to use body-to-body rewarming for active rewarming over other active rewarming techniques such as chemical heat packs or forced air systems.
- It is not effective to treat a person with hypothermia by using small glove or boot insert chemical heat packs as the sole or primary means of rewarming.
- Heat sources, rubbing, and massage should not be applied to the extremities of a person with hypothermia.
- It is potentially harmful to use a warm shower or warm water immersion for rewarming a hypothermic person with a decreased level of responsiveness (moderate to severe hypothermia) due to the risk of core temperature after drop, hypotension, falls, and drowning.

Hypothermia Signs, Symptoms, and Potential Rewarming Strategies

Hypothermia level, °C	Signs and symptoms	Rewarming strategies
Cold stress, 35–37	Alert Possibly shivering	Remove from cold environment; protect from further heat loss. Passive rewarming is often adequate in healthy people.
Mild hypothermia, 32–35	Altered level of responsiveness Shivering	Protect from harm such as falls. Passive and active rewarming methods may be used in tandem. Seek additional care.
Moderate hypothermia, 28–32	Decreased level of responsiveness ±Shivering ±Low heart rate Pale, nonblanching exposed skin Associated with frozen tissue/frostbite	Hypothermia with decreased responsiveness, such as responding only to loud voice or pain, is a medical emergency. Use all available passive and active rewarming methods, handle the patient gently, and activate the emergency response system.
Severe hypothermia, <28 Profound hypothermia, <24	Unresponsive, may appear lifeless Cessation of shivering Slow heart rate and breathing High risk for irregular heart rhythm and cardiac arrest	

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 8: Environmental Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

First Aid for Frostbite (Updated)

- The preferred method for warming frostbitten tissue is clean lukewarm water immersion at 37 to 40°C (99-104°F).
- Frostbitten tissue should be rewarmed at the earliest opportunity, as long as there is no risk of refreezing.
- If clean lukewarm water immersion is not feasible, frostbitten tissue should be allowed to rewarm spontaneously in warm room air or next to the person's own warm skin.
- A person with frostbite should seek prompt medical attention.
- Jewelry or other constricting materials should be removed from a frostbitten extremity as soon as possible.
- A person with moderate to severe hypothermia should receive core rewarming before frostbite is treated.

- If possible, a person should protect frostbitten tissue from further injury and avoid walking on frozen feet and toes.
- For frozen and thawed tissue and between the toes and fingers, bulky, clean, dry gauze or sterile cotton dressings should be applied. Circumferential dressings should be wrapped loosely to allow for swelling without placing pressure on the underlying tissue.
- It may be reasonable to give ibuprofen to a person with frostbite to prevent further tissue damage and to treat pain.
- It is not recommended for first aid providers to debride blisters associated with frostbite.

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 8: Environmental Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

First Aid for Exertional Hyperthermia and Heatstroke (New)

- For people with exertional hyperthermia or heatstroke, first aid providers should move the individual from the hot environment, remove excess clothing, limit exertion, and provide cool liquids if the person is able to swallow.
- For people with heatstroke (heat illness with altered mental status), first aid providers should activate emergency services.
- For adults with heatstroke, it is reasonable to initiate immediate active cooling by using whole-body (neck-down) cool- to cold-water immersion for 15 minutes or until neurological symptoms resolve (whichever occurs first).
- For adults with heatstroke, it is reasonable to initiate other forms of active cooling, including commercial ice packs, cold showers, ice sheets and towels, cooling vests and jackets, and evaporative, fanning, or a combination of techniques when water immersion is not available.
- For children with heatstroke, it is reasonable to initiate immediate active cooling by using whole-body (neck-down) cool- to cold-water immersion for 15 minutes or until neurological symptoms resolve (whichever occurs first).
- For children with heatstroke, it is reasonable to initiate other forms of active cooling, including commercial ice packs, cold showers, ice sheets and towels, cooling vests and jackets, and evaporative, fanning, or a combination of techniques when water immersion is not available.
- It may be reasonable for first aid providers, who are trained and willing, to measure core temperature during active cooling for heatstroke. The target core temperature to cool until is 39°C (102.2°F).

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 8: Environmental Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

Oral Rehydration of Exertional Dehydration (Updated)

- In the absence of shock, confusion, or inability to swallow, first aid providers should assist or encourage individuals with exertional dehydration to orally rehydrate with any available rehydration drink or potable water.
- It is reasonable to choose 4% to 9% carbohydrate-electrolyte drink over potable water, 0% to 3.9% carbohydrate-electrolyte drinks, coconut water, or low-fat cow's milk, if each is readily available.

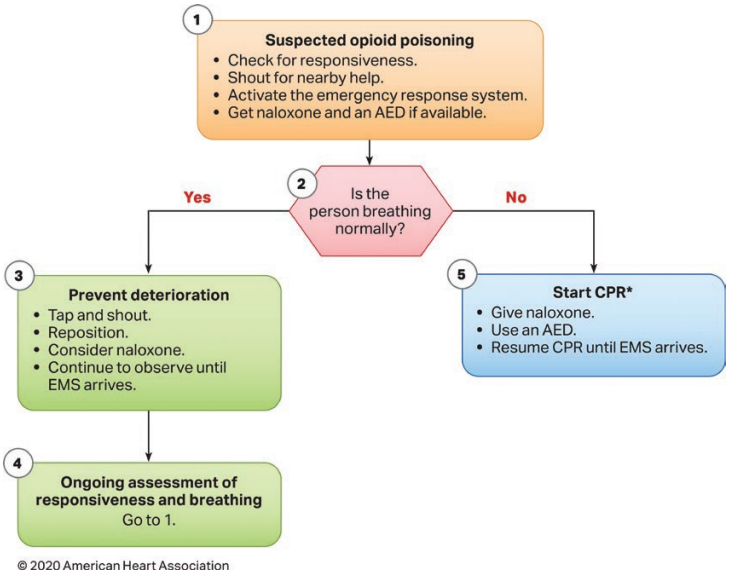
Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 8: Environmental Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

Opioid Overdose (New)

- A first aid provider who encounters a person with suspected opioid overdose who is unresponsive and not breathing or not breathing normally should activate the emergency response system, provide high-quality CPR (compressions plus ventilation), and administer naloxone.

Opioid-Associated Emergency for Lay Responders Algorithm



Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; Adult CPR AED Lesson Plans; Lesson 6: Drug Overdose: Opioid-Associated Life-Threatening Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Adult CPR AED Lesson Plans; Lesson 6: Drug Overdose

First Aid for Chemical Exposure to the Skin (Updated)

- Immediate skin decontamination is recommended after a chemical exposure.
- Unless otherwise recommended by local guidelines or chemical-specific information, skin exposed to caustic chemical should be irrigated with running water for at least 15 minutes.
- It can be beneficial to follow local guidelines, follow chemical-specific procedures, or consult a regional poison center when assisting a person suffering from chemical exposures.
- Contaminated clothing, jewelry, and other surrounding material should be removed from the area of a chemical exposure.
- EMS should be called when a person with chemical exposure has respiratory symptoms, systemic symptoms, or large chemical exposures.
- It is reasonable to brush off any dry chemical before irrigation with water.

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 8: Environmental Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

First Aid for Chemical Exposure to the Eye (Updated)

- Decontamination by irrigation should be performed immediately after chemical exposure to the eyes.
- Unless otherwise recommended by local guidelines, irrigation with a copious amount of tap water for 15 minutes should be performed.
- When providing first aid for chemical eye injury, first aid providers should avoid contaminating other individuals, areas, or the other eye with the caustic substance.
- Eye irrigation with normal saline, Ringer's lactate solution, or a commercial eye wash solution if immediately available is reasonable.
- It is reasonable for individuals with ocular exposure to industrial chemicals to adhere to local guidelines or recommendations from a poison center.

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 8: Environmental Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

First Aid for Severe External Bleeding (Updated)

- Direct manual pressure should be applied to achieve initial control of external bleeding.
- A hemostatic dressing can be useful as adjunctive therapy to improve the effectiveness of direct manual pressure.

- Once bleeding has been controlled, it may be reasonable to apply a pressure dressing to maintain bleeding cessation.
- The utility of indirect manual pressure (ie, pressure points) for bleeding control is uncertain.
- Mechanical pressure such as pressure bandages or devices might be considered in some situations when direct manual pressure is not feasible.

Aligned with ACS Stop the Bleed | Stop the Bleed course

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 6: Injury Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

First Aid for Life-Threatening Extremity Bleeding That Is Not Controlled by Direct Pressure (Updated)

- For life-threatening extremity bleeding, a tourniquet should be applied and tightened until the bleeding stops.
- A commercial tourniquet is probably superior to an improvised tourniquet.
- If an improvised tourniquet is used, it is reasonable for the tourniquet to be at least 2 inches in width.

Aligned with ACS Stop the Bleed | Stop the Bleed course

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 6: Injury Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

Open Chest Wounds (Updated)

- An open chest wound is a medical emergency requiring immediate activation of the emergency response system.
- If a dressing is placed, the first aid provider should monitor the person for worsening of breathing/symptoms and loosen or remove the dressing if breathing worsens.
- In the first aid situation, it is reasonable to leave an open chest wound exposed to ambient air; place a clean nonocclusive, dry dressing (eg, gauze dressing, part of a tee shirt); or place a specialized dressing such as a vented chest seal.

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 6: Injury Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid

CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

First Aid for Superficial Wounds (Updated)

- A superficial wound caused by an animal or human bite or with contamination with human or animal saliva should be evaluated in a medical facility as soon as possible.
- It is reasonable to use running tap water or sterile saline solutions for wound irrigation, instead of antiseptic agents such as povidone-iodine.
- It is reasonable to cover clean superficial wounds and abrasions with an occlusive dressing to promote wound healing.
- If a person with superficial wound or abrasion develops redness, swelling, foul-smelling wound drainage, increased pain, or fever, it is reasonable to remove the dressing, inspect the wound, and obtain medical care.

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 6: Injury Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

First Aid for Suspected Spinal Injury (Updated)

- We recommend against routine spinal immobilization for patients with penetrating trauma (eg, gunshot or knife wounds).

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 6: Injury Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

First Aid for Concussion (Updated)

- A person with signs and symptoms of a concussion should be immediately removed from activity (play/sports) and not allowed to return to activity until evaluated by a health care professional.
- For a person with signs or symptoms of severe head injury (eg, such as loss of consciousness, worsening headache, vomiting, altered mental status, seizures, visual changes, swelling, or deformities of the scalp), EMS should be activated.

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 6: Injury Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid

CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

First Aid for Sprains and Strains (Updated)

- A person with a painful extremity injury that limits use should avoid activities that cause pain and seek medical attention.
- It can be useful for first aid providers to apply cold (eg, such as with ice and water surrounded by a damp cloth) to an acute sprain or strain for pain and swelling. Cold application should be limited to 20 to 30 minutes per application without direct contact on the skin to avoid cold injury.
- First aid providers may consider applying a compression wrap after an acute ankle sprain or strain to promote comfort after an injury. Application of the compression wrap should be performed without compromising circulation.

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 6: Injury Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

First Aid for Fractures (Updated)

- If a fracture is associated with an open wound and severe bleeding, the First Aid for Severe External Bleeding and First Aid for Life-Threatening Extremity Bleeding That Is Not Controlled by Direct Pressure recommendations should be followed.
- If a fractured extremity is blue, purple, or pale, the emergency response system should be activated immediately.
- Splinting of a fractured extremity can be useful to reduce pain, reduce risk for further injury, and facilitate transport to a medical facility.
- It may be reasonable to treat a deformed fractured extremity in the position found unless straightening the fracture is necessary to facilitate safe and prompt transport to a medical facility.
- Covering open wounds associated with a suspected fracture with a clean dressing may be useful to lower the risk for further contamination and infection.

Relevant Here

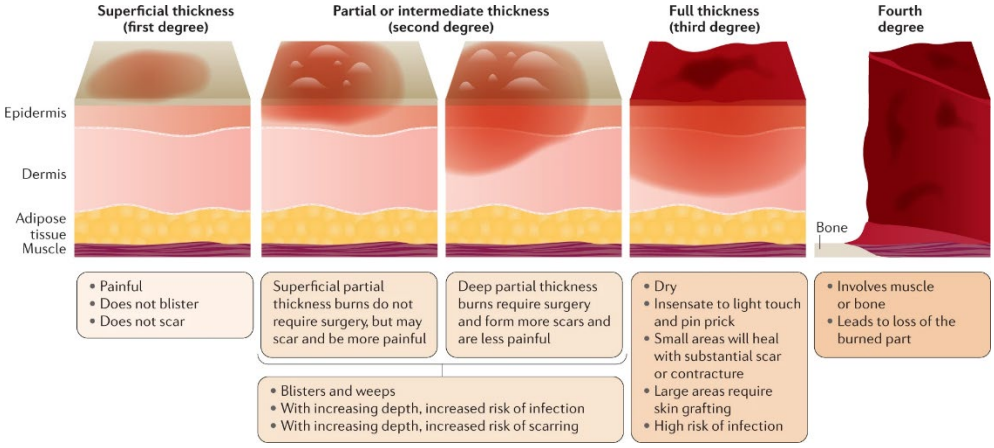
- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 6: Injury Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

First Aid Cooling of Thermal Burns (Updated)

- Thermal burns should be cooled immediately, preferably with clean running water.

- Preadolescent children with thermal burns being actively cooled with running water should be monitored for signs or symptoms of hypothermia.
- It may be reasonable to cool thermal burns for 5 to 20 minutes.
- If clean running water is not available, it may be reasonable to cool superficial burns (with the skin intact) with ice wrapped in cloth.

Depth of Burns



Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 6: Injury Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

Care of Thermal Burns After Cooling (Updated)

- A person with thermal burns should promptly remove all jewelry, belts, and other tight items from burned areas.
- It is reasonable to give over-the-counter pain medications for pain from thermal burns.
- After cooling, for small partial-thickness burns being managed at home, it may be reasonable to apply petrolatum, petrolatum-based antibiotic ointment, honey, or aloe vera and a clean nonadherent dressing to open burn wounds.
- After cooling, while awaiting evaluation by a health care professional, it may be reasonable to loosely cover a burn that has intact skin or an intact blister with a clean cloth or nonadherent dry dressing.

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 6: Injury Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

Dental Avulsion (Updated)

- When a permanent tooth becomes avulsed (knocked out), initial actions include removing visible debris from the tooth by brief rinsing (less than 10 seconds), taking care not to damage the tooth or attached tissue, and attempting to replant the tooth in the socket.
- When a permanent tooth is avulsed, the person should seek dental or medical care immediately. They should bring the tooth if not successfully replanted.
- If an avulsed permanent tooth cannot be immediately replanted, it can be beneficial to place the tooth in Hanks Balanced Salt Solution , oral rehydration salt solutions, propolis, or rice water, if preprepared, or to wrap the tooth in cling film to prevent dehydration.
- If an avulsed permanent tooth cannot be immediately replanted and the aforementioned solutions or interventions are not available, storage of the tooth in cow's milk or saliva may be considered.
- If an avulsed permanent tooth cannot be immediately replanted and none of the above storage mediums are available, a probiotic, egg white, or almond milk may be considered.
- An avulsed permanent tooth should not be stored in tap water.

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 6: Injury Emergencies
- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

Suspected Foreign Body in the Eye (New)

- A person who sustains a high-velocity eye injury (such as injuries from grinding, nailing, or machinery), penetrating eye injury from a sharp or metal object, irregular pupil after trauma, eye bleeding after trauma, or loss of vision after trauma should seek immediate medical attention.
- A person who has persistent foreign-body sensation in the eye should seek immediate medical attention.
- A person who develops a foreign-body sensation in the eye associated with contact lens use should remove the contact lens, discontinue contact lens use, and seek medical attention.
- A person with a foreign-body sensation in the eye should not rub their eye.
- Taping a hard plastic shield, paper cup, or plastic cup over the eye can help prevent unintentional touching.
- It is reasonable for a person with a foreign body in the eye from a low-energy mechanism (eg, dust, dirt, other object blown into the eye by wind; eyelash in the eye) to attempt to remove the foreign body by allowing natural tears to wash out the object or by irrigating the eye with tap water or a commercial eye wash solution.
- It is reasonable to take over-the-counter oral acetaminophen or nonsteroidal anti-inflammatory drugs to treat residual discomfort after ocular foreign-body removal.

Relevant Here

- *Heartsaver First Aid CPR AED Instructor Manual*; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 6: Injury Emergencies

- *Heartsaver Pediatric First Aid CPR AED Instructor Manual*; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies

Nosebleed (Epistaxis) (New)

- A person experiencing epistaxis should sit with their head slightly forward with their nostrils pinched for 10 to 15 minutes.
- A person experiencing epistaxis that does not stop after 15 minutes of continuous manual pressure or who becomes lightheaded from epistaxis should seek medical attention.
- A person with epistaxis due to trauma should seek medical attention if they experience signs of brain injury, obvious nasal deformity, or signs of facial fracture.
- It is reasonable for a person experiencing epistaxis who is taking anticoagulant or antiplatelet medication or who has a blood-clotting disorder to seek care from a health care professional unless bleeding has stopped.
- The usefulness of cryotherapy (ice) for managing epistaxis in the first aid setting is unknown.

Relevant Here

- Heartsaver First Aid CPR AED Instructor Manual; Part 5: Heartsaver First Aid CPR AED Lesson Plans, Instructor-Led Course; First Aid Lesson Plans; Lesson 6: Injury Emergencies
- Heartsaver Pediatric First Aid CPR AED Instructor Manual; Part 5: Heartsaver Pediatric First Aid CPR AED Lesson Plans, Instructor-Led Course; Pediatric First Aid Lesson Plans; Lesson 6: Injury and Environmental Emergencies