

Environmental Emergencies

For any environmental emergency, your first steps will be to make sure the scene is safe, get the first aid kit, and put on PPE.

Bites and Stings

Animal and Human Bites

When an animal bite breaks the skin, the wound can bleed and become infected. But the bite itself is not the only concern—the person who was bitten might also be at risk for rabies.

Rabies in wild animals is most frequently reported in raccoons, skunks, and bats. Pets bitten by infected animals can become infected. Also, because of the risk of rabies, anyone who has had direct contact with a bat or has even had close exposure to a bat should contact a healthcare provider as soon as possible.

Actions to Take: Animal or Human Bite

- Wash the wound with plenty of soap and water.
- Apply a bag of ice and water wrapped in a towel for up to 20 minutes to help with bruising and swelling.
- For all bites that break the skin, phone a healthcare provider as soon as possible.

Snakebites

Some people can identify a snake from its color or bite mark. But if you're not sure what kind of snake it is, assume that its bite is venomous.

Signs of venomous snakebites are

- Pain at the bite area that keeps getting worse
- Swelling of the bite area
- Nausea, vomiting, sweating, or weakness

Scene Safety and Snakebites

When making sure the scene is safe, be very careful around any snake, even if it's wounded. Back away and go around the snake. If the snake has been killed or hurt, don't handle it. A snake can bite even when severely hurt close to death.

Actions to Take: Snakebite

- Ask another adult to move any other people away from the area and phone 9-1-1.
- Ask the injured person to stay as still and calm as possible and to avoid moving the part of the body that was bitten.
- Remove any tight clothing and jewelry.
- Gently wash the area with running water and soap.
- Keep the person still and calm until someone with more advanced training arrives and takes over.

Insect, Bee, and Spider Bites and Stings

Usually, insect bites and stings cause only mild pain, itching, and swelling at the bite. However, some insect bites can be serious and even fatal if the person has a severe allergic reaction to the bite or sting or if venom is injected into the person from the bite or sting.

Bees are the only insects that leave behind their stingers. If someone is stung by a bee, look for the stinger and remove it.

Actions to Take: Bite or Sting

- If the person was stung by a bee, scrape the stinger and venom sac away with something hard and dull that won't squeeze it, like the edge of a credit card or ID card.
- Wash the sting or bite area with running water and soap.
- Put a bag of ice and water wrapped in a towel over the area for up to 20 minutes.
- Watch the person for at least 30 minutes for signs of a severe allergic reaction. Be prepared to use the person's epinephrine pen if needed.

Allergic Reactions to Bee Stings

People who have had severe allergic reactions to an insect bite or sting usually have an epinephrine pen and know how to use it. They often wear medical identification jewelry. If the person develops a severe allergic reaction, phone or send someone else to phone 9-1-1 and get the first aid kit. Use the skills you learned earlier to help the person inject the epinephrine pen.

Venomous Spider Bites and Scorpion Stings

The bite of nonvenomous insects can cause mild signs of redness and itching at the bite area. However, the bite or sting of a venomous spider or scorpion can make someone ill. Signs of venomous spider bites and scorpion stings are

- Severe pain at the site of the bite or sting
- Muscle cramps
- Headache
- Fever
- Vomiting
- Breathing problems
- Seizures
- Lack of response

Actions to Take: Venomous Spider Bite or Scorpion Sting

- Wash the bite or sting area with lots of running water and soap.
- Put a bag of ice and water wrapped in a towel on the bite or sting.
- If you know that a person has been bitten by a venomous spider or scorpion, or if the person has any of these signs after such a bite or sting, they should see a healthcare provider as soon as possible.
- If the person stops breathing and becomes unresponsive, phone 9-1-1 and start CPR.

Tick Bites

Ticks live in grassy, brushy, and wooded areas, and they attach themselves to exposed parts of the body. Many ticks are harmless, but some carry serious diseases. So if you find a tick, remove it as soon as possible. The longer the tick stays attached to a person, the greater the chance that it will transmit a disease.

Actions to Take: Tick Bite

- Use tweezers to grab the tick by its mouth or head, as close to the skin as possible.
- Try to avoid pinching the tick.
- Lift the tick straight out. If you lift the tick until the person's skin tents and wait for several seconds, the tick may let go.
- Place the tick in a plastic bag so that the person can take it with them when getting medical care.
- Wash the bite area with running water and soap.
- If you are in an area where you know there is tick-borne illness, suggest that the person see a healthcare provider as soon as possible.

Marine Bites and Stings

Just as it's important to be aware of ticks and other insects and animals when you're outside, it's important to be aware of fish and other marine animals when you're in the ocean.

Bites and stings from jellyfish, stingrays, or stonefish may cause pain, swelling, redness, or bleeding. Some marine bites and stings can be serious and even fatal if a person has a severe allergic reaction to the sting or venom.

Actions to Take: Marine Bite or Sting

- Keep the injured person quiet and still.
- Wipe off stingers or tentacles with a gloved hand or towel.
- If the sting is from a jellyfish, rinse the injured area for at least 30 seconds with lots of vinegar. If vinegar is not available, use a baking soda and water solution instead.
- Put the part of the body that was stung in hot water. You can also have the person take a shower with water as hot as they can bear for at least 20 minutes or as long as pain persists.
- Phone 9-1-1 if
 - A person was bitten or stung by a marine animal and has signs of a severe allergic reaction
 - A person was bitten or stung while in an area known to have venomous marine animals
- For all bites and stings that break the skin, see a healthcare provider.

Heat-Related Emergencies

Working, training, or playing in extreme heat can be dangerous. If a person doesn't take the proper care, exposure to extremely hot environments can lead to life-threatening medical conditions.

Dehydration

Dehydration occurs when a person loses water or fluids through heat exposure, too much exercise, illness (such as vomiting, diarrhea, and fever) or decreased fluid intake. Unless it is addressed early, dehydration may lead to life-threatening medical conditions such as shock. Signs of heat-related or environmental dehydration include

- Weakness
- Thirst or dry mouth
- Dizziness
- Confusion
- Less urination than usual

Actions to Take: Dehydration

- If you suspect that a person is dehydrated, contact a healthcare provider right away.
- The best first aid for dehydration is prevention: encourage everyone to drink enough to stay hydrated.

Heat Cramps

Heat cramps are painful muscle spasms, most often occurring in the calves, arms, stomach muscles, and back. Signs of heat cramps are

- Muscle cramps
- Sweating
- Headache

Heat cramps are a sign that heat-related problems may continue to get worse if the person doesn't take action.

Actions to Take: Heat Cramps

- Have the person rest and cool off.
- Have the person drink something with sugar and electrolytes, such as a sports drink or juice, or water if these aren't available.
- If the person can tolerate it, apply a bag with ice and water wrapped in a towel to the cramping area for up to 20 minutes.

Heat Exhaustion

A mild condition, such as heat cramps, can quickly turn into heat exhaustion. That's why it's important to recognize and give first aid for heat-related emergencies early. The signs of heat exhaustion are similar to those of heat stroke:

- Nausea
- Dizziness
- Vomiting
- Muscle cramps
- Feeling faint or fatigued
- Heavy sweating

Actions to Take: Heat Exhaustion

- Have the person lie down in a cool place.
- Remove as much of the person's clothing as possible.
- Cool the person with a cool water spray. If a cool water spray is not available, place cool, damp cloths on the neck, armpits, and groin.
- If the person is responsive and can drink, have the person drink something with sugar and electrolytes, such as a sports drink or juice, or water if these aren't available.

Heat Stroke

Heat stroke is a dangerous, life-threatening condition. So it's important to begin cooling a person who might have heat stroke immediately—every minute counts.

For heat stroke, you should try to immerse the person in cool water immediately. If you can't immerse the person in water, try to cool them with a cool water spray. If the person starts behaving normally again, stop cooling them. If you keep cooling the person, it could lead to low body temperature.

Signs of heat stroke are

- Confusion
- Feeling faint or fatigued
- Dizziness
- Fainting
- Nausea or vomiting
- Muscle cramps
- Seizure

Actions to Take: Heat Stroke

- Phone 9-1-1, and get the first aid kit and AED.
- Move the person from the hot environment, remove any excess clothing they might be wearing, and remind them to limit their physical activity.
- Put the person in cool water up to their neck, if possible, or spray them with cool water.
- If the person becomes unresponsive and is not breathing normally or is only gasping, give CPR.

Cold-Related Emergencies

Frostbite

Frostbite typically occurs outside in cold weather. But it can also occur inside or in a workplace if people are exposed to extremely cold materials, such as cold gases, without wearing gloves. Frostbite affects parts of the body that are exposed to the cold, such as the fingers, toes, nose, and ears.

The signs of frostbite are

- White, waxy, or grayish-yellow skin
- Cold and numb skin
- Hard skin that doesn't move when you push it

Actions to Take: Frostbite

- Phone 9-1-1.
- Move the person to a warm place.
- Remove wet or tight clothing and pat the body dry.
- Put dry clothes on the person and cover them with a blanket.
- Remove tight rings or any bracelets from the frostbitten part.

Caution

- Do not try to thaw the frozen body part if you think there may be a chance of it refreezing before the person can get to medical care.
- Do not rub the frostbitten area. Rubbing may cause damage. If you need to touch the area, do so gently.

Low Body Temperature (Hypothermia)

Hypothermia is another name for low body temperature. Staying too long in a cold, pouring rain or other wet and cold conditions can lead to hypothermia. A person can develop low body temperature even when the outside temperature is above freezing. When hypothermia occurs, it can cause serious problems or even death.

The signs of low body temperature may include

- Skin that's cool to the touch
- Shivering (which stops when the body temperature is very low)
- Confusion
- Personality change
- Sleepiness and the person's lack of concern about their condition
- Stiff, rigid muscles while the skin becomes ice-cold and blue

As the person's body temperature continues to drop, it may be hard to tell if the person is breathing. The person may become unresponsive and might even appear to be dead.

Actions to Take: Hypothermia

- Move the person to a warmer area, remove wet clothing, pat the person dry, and cover with a blanket.
- Phone 9-1-1 and get the first aid kit and AED.
- Put dry clothes on the person.
- Cover the body and head, but not the face, with blankets, towels, or even newspapers.
- Remain with the person until someone with more advanced training arrives and takes over.
- If the person becomes unresponsive and is not breathing normally or is only gasping, give CPR.

Poison Emergencies

A poison is anything that someone swallows or breathes, or that gets into the eyes or on the skin, that causes sickness or death. Many products can poison people.

Poison Control Hotline

The phone number for the poison control center should be in the first aid kit or prominently displayed in areas where chemicals are used. Contact your local poison center by phoning the American Association of Poison Control Centers (Poison Control) at **1-800-222-1222**.

When you phone the Poison Control Center, the dispatcher may ask the following questions:

- What is the name of the poison?
- Can you describe it if you can't name it?
- How much poison did the person touch, breathe, or swallow?
- How old is the person?
- How much does the person weigh?
- When did the poisoning happen?
- How is the person feeling or acting now?

If someone has been exposed to a poison, first make sure the scene is safe. For example, you may need to look for spills of liquids or powders that might be poison.

Actions to Take: Scene Safety in a Poison Emergency

- Look for posted signs warning people that poisons are nearby (Figure 69).
- Look for spilled or leaking containers.
 - If the scene seems unsafe, do not approach. Tell everyone to move away.
 - Stay out of the scene if you see multiple people who may have been poisoned.
- Phone 9-1-1 and get the first aid kit and AED.
- Tell the dispatcher the name of the poison if you know it. Some dispatchers may connect you to a poison control center.
 - Give only those antidotes that the poison control center or dispatcher tells you to. The first aid instructions on the poison itself can be helpful, but they may be incomplete.

Figure 69. Look for symbols of poisons and other hazards, such as these.

