

Lesson 6

First Aid for Poisons, Wounds, and Bruises



Key Words

abrasions
amputation
avulsion
incisions
lacerations
solvents

What You Will Learn to Do

- Determine first aid treatment for wounds, bruises, and poisoning

Linked Core Abilities

- Do your share as a good citizen in your school, community, country, and the world

Skills and Knowledge You Will Gain Along the Way

- Identify the causes and symptoms of poisoning
- Describe how to treat a poison victim
- Distinguish among the four types of wounds
- Describe how to treat minor wounds and bruises
- Define the key words contained in this lesson

Introduction

Whenever there are small children left alone in the kitchen, accidents can happen, especially when cleaning products are left out in the open. The first part of this lesson introduces the treatment and prevention of injury from poisons. As an addition to your first aid abilities, the lesson ends with a discussion of different types of wounds and their treatment, as well as the treatment of bruises.

Poisons

As consumers, we buy more than a quarter of a million different household products, including materials used in and around the house for medication, cleaning, cosmetic purposes, exterminating insects, and killing weeds. These items are valuable in the house and for yard maintenance, but misuse, especially when products are used in inappropriate applications or quantities, can cause illness, injury, and even death.

Each year more than 6,000 people die and an estimated 300,000 suffer disabling illnesses as a result of unintentional poisoning by solid and liquid substances. Poisonings can happen to anyone, at any time, in any situation. Poisonings at home, however, can be prevented. Although child-resistant packaging has greatly reduced the number of fatalities among children less than five years of age, parents, grandparents, and other caregivers must still be cautious. Following label directions for all products, including medication dosages and the proper storage of potentially toxic products, are important precautions to heed.

- **Poisonings from solids and liquids such as drugs, medicines, poisonous houseplants, and commonly recognized poisons caused 6,300 deaths in the home in 1998 alone.**
- **An additional 500 deaths in the home in 1998 were due to poisonings from gases and vapors such as carbon monoxide.**
- **These deaths are not all among children. Another age group at risk is adults age 25 through 44. Many adults are unintentionally poisoned when they do not follow label directions on medications or household chemicals.**

Poisoning is the effect of one or more harmful substance on the body. Poisons can be inhaled or ingested. Fortunately, most poisonings happen with products of low toxicity or with amounts so small, severe poisoning rarely occurs; however, the potential for severe or fatal poisoning is always present.

Inhaled Poisons

Inhaled poisoning occurs when a person breathes a poisonous substance into his/her lungs. Inhaled poisons include the following:

- **Smoke**
- **Gas used in outdoor cooking equipment and appliances in homes and recreational vehicles**

Key Note Term

solvents – liquid substances capable of dissolving or eliminating something unwanted

- **Hazardous fumes from household products such as paint and paint thinners, gasoline, solvents, and glues, as well as from chemicals used in industrial processes**
- **Carbon monoxide, which is always produced by wood, coal, and charcoal fires and by gasoline engines, can also be produced by gas, oil, and kerosene appliances such as furnaces, space heaters, water heaters, and stoves.**

Carbon monoxide, in particular, is a very dangerous poisonous substance, because it is odorless, colorless, and tasteless, making it difficult to detect. When a person inhales carbon monoxide, it replaces oxygen in the blood, which results in oxygen starvation throughout the body. Exposure to low amounts of carbon monoxide can cause flulike symptoms; continued exposure can cause permanent brain, nerve, and heart damage; exposure to very high concentrations can kill a person in a few minutes.

Running a car engine in a closed garage, using a charcoal grill indoors, and burning a fire in a fireplace with a blocked chimney can all result in carbon monoxide poisoning. In addition, because carbon monoxide forms when there is a lack of oxygen resulting in incomplete fuel combustion, operating fuel-burning equipment without an adequate supply of oxygen (proper ventilation) can result in carbon monoxide poisoning. For example, hundreds of people in the United States each year suffer carbon monoxide injuries from using portable heaters, lanterns, and camp stoves inside tents, campers, and vehicles.

Symptoms of Inhaled Poisoning

Symptoms of inhaled poisoning may not show up immediately. If you suspect inhalation poisoning, keep the victim under observation. If you know the victim has inhaled a poisonous chemical, get medical help whether or not symptoms are present. Symptoms will vary depending on the type and amount of poison inhaled but can include any of the following:

- **Dizziness**
- **Weakness**
- **Drowsiness**

Figure 2.6.1: Car exhaust is a source of carbon monoxide poisoning.

Courtesy of Ted Cordingley.



- Headache
- Mental confusion
- Breathing difficulties
- Heartbeat irregularities
- Unusual breath odor
- Discoloration of the lips and mucous membranes
- Nausea
- Vomiting
- Rashes or burns on the skin
- Unconsciousness

Treatment for Inhaled Poisons

Before rushing in to rescue a victim in a smoke-, gas-, or fume-filled environment, quickly assess the situation so that you do not end up a victim as well. If the poisonous substance is overwhelming and the danger to you is too great, do not attempt to rescue the victim unless you have been trained for rescue in this type of situation. Immediately call the EMS and stay clear of danger.

However, if after assessing the situation you believe you can safely remove the victim from the poisonous environment, do so by following these steps.

- 1. If you are alone, call for help first before attempting the rescue. This will notify others of the situation; a precaution that will ensure help is on its way in case you are also overcome by the poison.**
- 2. Take several deep breaths of fresh air, then take a final deep breath and hold it as you go in. If available, a damp cloth held over your nose and mouth is a good safety precaution.**

Note

Do not use light switches, light a match, or use any other equipment or appliance that produces flames or sparks while you are in a gas- or fume-filled area.

- 3. If you can see fumes or smoke, keep your head out of them. For example, fumes from car exhaust are heavy and settle near the floor, so keep your head above them; but in the case of smoke, which rises, keep your head below it.**
- 4. Move the victim out into the fresh air. If for some reason this is not possible, open doors and windows to ventilate the area, returning out into the fresh air as necessary to ensure your safety. Do not administer first aid until you and the victim are out of the hazardous environment or the area is ventilated.**



Courtesy of CACI and the U.S. Army.

Check the victim's airway, breathing, and circulation (ABCs) and perform mouth-to-mouth resuscitation and CPR as necessary. After you are sure the victim is breathing, call the EMS if you or someone else has not already done so. Even if the victim seems fine after he/she is in fresh air, call for medical help as symptoms may show up later. While you are waiting for medical help, treat the victim for any burns he/she may have suffered and monitor for shock.

Oral Poisoning

Oral poisoning occurs when a harmful substance, such as a common household cleaning product, is swallowed. First aid for oral poisoning depends on the substance swallowed.

Symptoms of Oral Poisoning

Symptoms will vary depending on the type and amount of poison inhaled but can include any of the following:

- **Abdominal pain and cramping**
- **Nausea or vomiting**
- **Diarrhea**
- **Burns, odor, and stains around and in mouth**
- **Drowsiness or unconsciousness**
- **Poison containers nearby**

Treatment for Oral Poisons

Procedures for treating oral poisoning:

1. **Determine critical information:**
 - **Age and size of victim**
 - **What was swallowed**
 - **How much was swallowed**
 - **When it was swallowed**
2. **If a corrosive or caustic substance was swallowed, immediately dilute it by having the victim drink at least one or two eight-ounce glasses of water or milk.**
3. **For a responsive victim, call a poison control center immediately. More than 70 percent of poisonings can be treated through instructions taken over the telephone from a poison control center.**
4. **For an unresponsive victim, or if the poison control center number is unknown, call the EMS and monitor the ABCs.**
5. **Place the victim on his or her left side to position the end of the stomach where it enters the small intestine straight up. Gravity will delay advancement of the poison into the small intestine, where absorption into the victim's circulatory system is faster.**

6. Induce vomiting only if a poison control center or physician advises it. Inducing must be done within 30 minutes of swallowing.
7. Save poison containers, plants, and so on to help medical personnel identify the poison.

Wounds

Wounds are soft tissue injuries that break the skin. Generally, they can be classified as follows:

- **Scrapes (abrasions)** are caused by sliding contact between the skin and a rough surface. They are generally shallow injuries with little bleeding.
- **Cuts (incisions)** are straight, even wounds made with sharp objects like knives or razor blades.
- **Tears (lacerations)** are caused by objects with sharp, irregular edges or by exerted force that leaves jagged, torn tissue.
- **Punctures** are caused by pointed objects such as pins and nails that make small holes in tissue, often with little bleeding.

All wounds can be minor or serious depending upon their size, depth, location, and source. Minor wounds involve only the outer skin layer. They stop bleeding in a few minutes on their own or with gentle pressure and can be treated with just first aid. Serious wounds require first aid followed by medical treatment. Consider a wound serious if the following characteristics are evident:

- The skin is cut or torn all the way through so that it gapes open.
- Fat, muscle, or tendons are visible.
- Bleeding is heavy and does not slow or stop after applying pressure for 15 to 20 minutes.
- Soil or other debris cannot be washed from the wound.
- There is loss of function such as the inability to move a cut finger.
- It is on the face; even a small wound may leave a scar.
- It is on the bottom of the foot.
- Its source is a rusty or dirty object, or an animal or human bite.

Some extremely serious injuries that generally contain a combination of the four kinds of wounds and always require immediate medical attention are **amputations**, **avulsions**, and crushing injuries. They are generally the result of motor vehicle or industrial machinery accidents or explosions.

- An **amputation** is the complete removal of an extremity, such as a finger or leg.
- An **avulsion** is tissue torn from or pulled away from and hanging off of the body. This type of injury may also result from an animal bite.

Key Note Terms

abrasion – a part of the skin that has been lightly torn or scraped

incision – a wound that is made by cutting into the body

laceration – a wound that is torn and ragged

Key Note Terms

amputation – the removal of an external part of the body, most often a limb or part of it, when it has been severely crushed or following the death of an extremity due to impaired blood circulation

avulsion – the tearing away of a body part accidentally or surgically

- **Crushing injuries** occur when parts of the body are caught between heavy objects or when the body is thrown against a heavy object or vice versa. In addition to wounds, crushing injuries include bone fractures, as well as possible injuries to internal organs and internal bleeding.

Treatment of Wounds

For a minor wound, clean it by flushing it with cool water and washing it with mild soap. Dry it thoroughly with a clean cloth, apply a thin layer of antibiotic ointment to keep the wound moist and protect against infection, and cover it with a bandage to keep it clean. Change the bandage whenever it gets wet or dirty, and consider leaving the bandage off at night when sleeping because exposure to air also helps the healing process. Contact a doctor if the wound does not appear to be healing after several days or shows signs of infection like redness, draining, or swelling.

For any wound caused by a rusty or dirty object or an animal bite, ask if the victim has had a tetanus shot within the past 10 years. If not, suggest that he/she get one to guard against tetanus infection.

For extremely serious injuries such as amputations, avulsions, or crushing injuries, call the EMS, control the bleeding, monitor breathing, treat for shock, and provide comfort to the victim until medical help arrives. Remember that tourniquets should only be used in extreme, life-threatening situations, and pressure points should only be used if you are trained to do so.

Bruises

Bruises are injuries that discolor but do not break the skin tissue. They can be caused by a fall, a blow, or bumping into something. Though sometimes very ugly and lasting for several weeks, they are usually not very serious. Wrap ice or an ice pack in a clean towel and apply it to the bruise. To reduce swelling, elevate the bruised part for 20 to 30 minutes if the injury is mild or for a few hours if it is severe. Seek medical attention if swelling increases unusually, pain increases, the bruise site appears deformed, or there is an inability to move a body part associated with the bruise.

Conclusion

You have just learned important procedures for treating poisons, wounds, and bruises, as well as when to apply basic first aid and life-saving skills in these situations. Remember that while it is important to administer first aid treatment as quickly as possible in most situations, some rescue situations require careful assessment before you jump in to save someone, so that you do not become a victim yourself. Remaining calm, thinking logically and clearly, and knowing what steps to take and when to take them, will help you to successfully perform first aid. In addition, this lesson provided many tips on how to prevent accidents from occurring in the first place.

In the next lesson, you will learn about heat injuries, from sunburn to heat stroke, and how to treat these problems.

Lesson Review

1. What are common types of inhaled poisons?
2. How can some in-home poisonings be prevented?
3. Compare and contrast scrapes, cuts, tears, and punctures.
4. How would you treat a bruise?