

First Aid For Pesticide Poisoning

Pesticides provide many benefits to society. They can kill potential disease-causing organisms and control insects, weeds and other pests. While most pesticides can be used with relatively little risk (as long as label directions are followed), some are extremely toxic and require special precautions. When applied properly, with the required protective clothing and equipment, they are unlikely to cause problems for the user.

However, careless use, misuse, or improper storage can lead to accidental exposure or overexposure to pesticides, potentially resulting in serious, and sometimes fatal, implications for humans. The most common accidental oral exposures occur when pesticides have been removed from their original containers and placed into an unlabeled bottle, jar, or food container.

The potential for pesticide accidents is real, so knowing the first aid steps to take in such situations can save lives. Therefore it is very important to:

- Recognize the signs of pesticide poisoning and know the first aid treatment for it.
- Know the importance of a pesticide first-aid kit and what it should contain.
- Understand the importance of poison control centers and how to get immediate information on types of poisonings and their treatment.

Read The Pesticide Label

Before using a pesticide, always read the pesticide product label. The label, in accordance with U.S. law, gives you important information about how to use the pesticide effectively and safely. Read the label before you buy the product and each time before you use the product. Read it again when you need to store the product or to dispose of the empty container or any unused pesticide.

Each pesticide label contains a signal word that tells you how toxic the product is to humans. There are three signal words: CAUTION, WARNING or DANGER. Signal words will usually be in capital letters. Least toxic products carry the signal word CAUTION. Products with the signal word WARNING on the label are more toxic. The most toxic pesticides have the signal word DANGER on their labels.

Along with the signal words, pesticide labels include

statements about route of entry and specific actions that must be taken to avoid exposure. Route of entry statements indicate the outcome that can be expected from exposure. For example, a pesticide label might read: "Poisonous if swallowed, inhaled, or absorbed through

Signal words, toxicities, and oral lethal doses for a 150-pound human

Signal Word	Toxicity	Oral Lethal Dose
DANGER*	Highly toxic	Few drops to 1 teaspoon
WARNING	Moderately toxic	1 teaspoon to 1 tablespoon
CAUTION	Low toxicity	1 ounce to more than a pint

*The skull and crossbones symbol and the word "Poison" are often printed with the DANGER signal word.

Note: Oral lethal doses are less for a child or person weighing less than 150 pounds.

the skin. Rapidly absorbed through the skin and eyes." This indicates that the pesticide is a potential hazard through all three routes of entry, and that skin and eye contact are particularly hazardous. Specific action statements normally follow the route of entry statement and indicate what must be done to prevent poisoning accidents. In the case of the pesticide discussed here, the statement might read: "Do not get in eyes, on skin, or on clothing. Do not breathe spray mist."

What To Do First In Case Of Poisoning

If someone has swallowed or inhaled a pesticide or gotten it in the eyes or on the skin:

- Call 911 if the person is unconscious, having trouble breathing, or having convulsions.
- Check the label for directions on how to give first aid.
- Call the Poison Control Center at 1-800-222-1222 for help with first aid information.
- The National Pesticide Information Center (NPIC) also can provide information about pesticide products and

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their toxicity. Call 800-858-7378.

The key to surviving and recovering from a pesticide poisoning is rapid treatment. Take emergency action immediately when you suspect a pesticide poisoning. As time continues to elapse after exposure, recovery is hindered and the toxic effects are heightened. Do not hesitate to contact medical authorities if any symptoms of pesticide poisoning occur. It is better to be safe than sorry.

Signs of acute pesticide poisoning include:

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| ■ rashes | ■ muscle pains and cramps |
| ■ throat irritation | ■ dizziness |
| ■ vomiting | ■ fatigue |
| ■ headaches | ■ drooling |
| ■ profuse sweating | ■ breathing problems |

Symptoms Of Pesticide Poisoning

Anyone who may become exposed to pesticides should be aware of the signs and symptoms of pesticide poisoning. Prompt action during pesticide overexposure can prevent serious consequences. Some poisoning signs can be seen by others: for example, vomiting, sweating, or pinpoint pupils. Symptoms are any functional changes in normal condition which can be described by the victim of poisoning, and may include nausea, headache, weakness, and dizziness, among others.

All pesticides in a given chemical group generally affect the human body in the same way. However, severity of the effects can vary depending on the formulation, concentration, toxicity and route of exposure of the pesticide. It is important, therefore, to know both the type of pesticide you are using and the signs and symptoms associated with poisoning from it.

First Aid Guidelines

First aid is the initial effort to help a victim while medical help is on the way. Step one in any poisoning emergency is to call an ambulance or doctor. The only exception is when you are all alone with the victim. Then you must see that he is breathing and that he is not further exposed before leaving him to make your phone call. Always save the pesticide and label for the doctor.

Whenever possible, find out the following critical information:

1. Has the victim been exposed to a pesticide?
2. If so, which one and how did the exposure occur?

While waiting for emergency help (ambulance, doctor, etc.), you may apply first aid for:

■ **Swallowed.** Induce vomiting ONLY if emergency personnel on the phone tell you to do so. It will depend on what the victim has swallowed; some petroleum products or caustic poisons will cause more damage if the victim is made to vomit. Always keep Syrup of Ipecac on hand (1 ounce for each child in the household) to use to induce vomiting if recommended by emergency personnel. Be sure the date is current.

■ **In the eye.** Eye membranes absorb pesticides faster than any other external part of the body; eye damage can occur in a few minutes with some types of pesticides. If poison splashes into an eye, hold the eyelid open and wash quickly and gently with clean running water from the tap or a gentle stream from a hose for at least 15 minutes. If possible, have someone else contact a Poison Control Center for you while the victim is being treated. Do not use eye drops or chemicals or drugs in the wash water.

■ **On the skin.** If pesticide splashes on the skin, drench area with water and remove contaminated clothing. Wash skin and hair thoroughly with soap and water. Later, discard contaminated clothing or thoroughly wash it separately from other laundry.

■ **Inhalation.** Carry or drag victim to fresh air immediately. If you think you need protection such as a respirator and one is not available to you, call the Fire Department and wait for emergency equipment before entering the area. Loosen victim's tight clothing. If the victim's skin is blue or the victim has stopped breathing, begin artificial respiration (if you know how) and call rescue service for help. Open doors and windows so no one else will be poisoned by fumes.

When Not To Induce Vomiting

The most important choice you have to make when aiding a person who has swallowed a pesticide is whether or not to make him vomit. The decision must be made quickly and accurately; the victim's life may depend on it.

Usually it is best to get rid of the swallowed poison fast... but there are situations in which you should NOT induce vomiting:

- Never induce vomiting if the victim is unconscious or is having convulsions. The victim could choke to death on the vomitus.
- Never induce vomiting if the victim has swallowed a corrosive poison. Find out what poison the person has

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ingested. A corrosive poison is strong acid or alkali. The victim will complain of severe pain and will show signs of severe mouth and throat burns. A corrosive poison will burn the throat and mouth as severely coming up as it did going down. Dilute the poison as quickly as possible. For acids or alkaline substances, use milk or water. For patients one to five years old, use one to two cups; for patients five years and older, use up to one quart. For acids, milk of magnesia may also be used (two tablespoons in one cup of water).

- Never induce vomiting if the person has swallowed petroleum products such as kerosene, gasoline, oil, or lighter fluid. Most pesticides that come in liquid formulations are dissolved in petroleum products. The words “emulsifiable concentrate” or “solution” on the pesticide label are signals NOT to induce vomiting in the poison victim if he has swallowed the concentrates. Concentrated petroleum products (like corrosive poisons) cause severe burns. They will burn as severely when vomited up. If he has swallowed a dilute form of these formulations, he should be forced to vomit immediately.

When To Induce Vomiting

If the victim does not meet any of the above criteria, you may need to induce vomiting. Do not waste a lot of time inducing vomiting. Use it only as first aid until you can get the victim to a hospital. Make sure the victim is lying face down or kneeling forward while retching or vomiting. Do not let him lie on his back, because vomitus could enter the lungs and cause chemical pneumonia.

- First, give the patient large doses of milk or water. One to two cups for victims up to five years old; up to a quart for victims five years and older.
- If victim is alert and respiration is not depressed, give syrup of ipecac followed by one to two glasses of water

Symptoms and treatment of shock:

- The skin will be pale, moist, cold, and clammy. The eyes are vacant and lackluster with dilated pupils. The breathing will be shallow and irregular. The pulse is very weak, rapid, and irregular. The victim may be unconscious or in a faint.
- Unless he is vomiting, keep the victim flat on his back with his legs up 1 to 1 1/2 feet above his head.
- Keep the victim warm enough to prevent shivering. Do not overheat.
- Keep the victim quiet and reassure him often.

WARNING: Never try to give anything orally to an unconscious victim.

to induce vomiting. Adults (twelve years and over): 30 ml (two tablespoons); children under twelve years: 15 ml (one tablespoon). Activity hastens the effect of the syrup of ipecac.

- Collect some of the vomitus for the doctor; he may need it for chemical tests.

Diluting The Poison

The best first aid is to dilute the poison as quickly as possible with milk or preferably with water. It is very important that the victim get to the hospital without delay. Many communities have rescue units with ambulances manned by Emergency Medical Technicians who can communicate with the hospital and can begin treatment en route.

If a rescue unit is not available in your area, you will have to transport the patient. Call the hospital emergency room or poison control center for instructions so that they can prepare for the victim's arrival.

Use Of Activated Charcoal

The poison control center may recommend activated charcoal in some cases. Activated charcoal acts as a “sponge” to absorb poisons after the instructions for corrosive or noncorrosive poisons are followed.

- Activated charcoal absorbs many poisons at a high rate. Mix it with water into a thick syrup for the victim to drink. Activated charcoal is available from most drug stores.
- Atropine tablets should NOT be taken in a poisoning emergency. The dose is much too small. Often the victim cannot or should not take oral medicine. The atropine can hide or delay early symptoms of poisoning. The victim may be fooled into thinking he is okay and may even go back to work. It is possible that a doctor may not detect the problem because the symptoms are hidden by the atropine. WARNING: Atropine itself can be dangerous if misused. It should never be used to prevent poisoning. Workers should not carry atropine for first aid purposes. It should be given only under a doctor's directions.

Shock

Sometimes poisoning victims go into shock. If untreated or ignored, the victim can die from shock even if the poisoning injuries would not be fatal.

First-Aid Kit For Field And On-Site Use

A well-equipped first aid kit which is always readily available can be important in a pesticide emergency. Make up your own pesticide first aid kit from a lunch pail, tool

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box, or a sturdy wooden box. It should have a tight fitting cover with a latch, so that it won't come open or allow pesticides to leak inside. Label it clearly with paint or a waterproof marker.

The first-aid kit should include:

1. A small plastic bottle of a common detergent. It is used to wash pesticides quickly off the skin.
2. A small package or bag of activated charcoal. Mixed with water and swallowed, activated charcoal acts as an absorber of all pesticides.
3. A shaped plastic airway for mouth-to-mouth resuscitation.
4. A thermos or large plastic bottle (at least one quart) of clean water. If there is no clean water in an emergency, use any pond or stream water that is available.
5. Simple band aids, bandages and tape. All cuts and

scrapes should be covered to prevent pesticides from easily entering the body.

6. A blanket is very useful. It should be kept in a place where it will not be contaminated by pesticides.
7. Suitable coins should always be taped to the inside cover of the first aid kit. They are for an emergency phone call.
8. A small, plastic empty jar with a tight fitting lid is useful as a drinking glass for the victim, in order to induce vomiting or feed activated charcoal. It can also be used for collecting vomitus to take to the doctor.

Sources: Cornell University Extension, University of Nebraska Extension, University of Missouri Extension, and the Environmental Protection Agency