

# Cooperative Extension Service



## Prevention and Treatment of Pesticide Poisoning

University of Arkansas, United States Department of Agriculture, and County Governments Cooperating

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People working with pesticides should be trained in the proper use and handling of pesticides as well as in first-aid procedures. You should have a well-thought-out plan of action to follow in case of an accident. A well-equipped pesticide first-aid kit should be readily available in a pesticide emergency.

### Call a Doctor or Poison Control Center

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 out of further exposure to the pesticide before leaving him to make a phone call. Always save the pesticide and the label for the doctor.

### Poison on the Skin

The sooner the poison is washed off the patient, the less the injury.

- Remove clothing and drench skin with water (shower, hose, faucet, pond, ditch).
- Cleanse skin and hair thoroughly with soap and water. (Don't abrade or injure the skin while washing.)
- Dry and wrap in blanket.

**WARNING:** Do not allow any of the pesticide to get on you while you are helping the victim.

### Chemical Burns of the Skin

- Remove contaminated clothing.
- Wash the skin with large quantities of cold running water.
- Immediately cover the area loosely with a clean, soft cloth.
- Avoid use of ointments, greases, powders, and other drugs in first-aid treatment of chemical burns.



## Poison in the Eye

Washing the eye out as quickly, but as gently, as possible is very important.

- Hold eyelids open, wash eyes with a gentle stream of clean running water at body temperature.
- Continue washing for 15 minutes or more. Do not use chemicals or drugs in wash water. They may increase the extent of injury.

## Inhaled Poisons (Dust, Vapors, and Gases)

If victim is in an enclosed area, use an air-supplied respirator to get him air.

- Carry patient (do not let him walk) to fresh air immediately.
- Open all doors and windows.
- Loosen all tight clothing.
- Apply artificial respiration if breathing has stopped or is irregular.
- Keep patient as quiet as possible.
- If patient is convulsing, watch his breathing and protect him from falling and butting his head. Pull his chin forward so his tongue does not block his air passage.
- Prevent chilling (wrap patient in blankets but don't overheat).
- Do not give alcohol in any form.

## Swallowed Poisons

The *most important decision* you have to make when aiding a person who has swallowed a pesticide is whether or not to induce *vomiting*. Make the decision quickly and accurately. The victim's life may depend on it. Usually it is best to get rid of the swallowed poison fast. But, **NEVER** induce vomiting if the victim is unconscious or is in convulsions. The victim could choke to death on the vomitus.

Find out what poison has been ingested. **NEVER** induce vomiting if the victim has swallowed a corrosive poison. A corrosive poison is a strong acid or alkali (base) such as dinoseb (DN Compounds). The victim will complain of severe pain and have 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.

Most labels on emulsifiable concentrate and solution formulations suggest the victim should not have vomiting induced. However, when the toxicity of the pesticide is marked, its removal may be essential.

## To Induce Vomiting

Give 1 tablespoon (1/2 ounce) of syrup of ipecac to a child over 1 year of age or 1 fluid ounce (2 tablespoons) to an adult, followed by a glass of water. If vomiting does not occur in 15 minutes, repeat the dose. Do not waste a lot of time waiting for the vomiting. Get the victim to a hospital.

Make sure the victim is kneeling forward or lying on his right side while retching or vomiting. Do not let him lie on his back because vomitus could enter the lungs and do more damage. Catch the vomitus in a container and save for the doctor. He may need it for chemical tests.

An ounce of syrup of ipecac may be obtained without prescription from your pharmacist.

If you do not have syrup of ipecac, give 1 cup of milk or water for victims up to 5 years old or 1 to 2 glasses for victims 5 years and older. Induce vomiting by putting your finger or the blunt end of a spoon on the very back of the tongue. Do not use anything which is sharp or pointed!

## Corrosive Poisons

The best first aid is to dilute the poisons as quickly as possible. For acids or alkalis (bases), give the patient water or preferably milk or ice cream – 1 cup for victims under 5 years; or 1 to 2 glasses for patients over 5 years. Milk or ice cream is better than water because it dilutes and helps neutralize the poison. Water only dilutes the poison.

Getting the victim to a hospital without delay is very important. Do not induce or encourage vomiting!

## Activated Charcoal

After following first-aid suggestions for non-corrosive poisons and if medical help is delayed due to travel or other reasons, give activated charcoal to absorb the remaining poison. It does not absorb all poisons and a rather large amount may be required

for it to be effective. For example, it takes 1 1/2 ounces of charcoal powder (about 10 grams) to bind 3 adult aspirin. Mix the charcoal with water into a thick soup for the victim to drink.

Individuals who work with insecticides should purchase from their pharmacist a sealed pint jar of activated charcoal to have available in case of an accident. The most favorable experience has been with the following products: (1) Norit A (American Norit Company, Jacksonville, FL) and (2) Darco G 60 (Atlas Powder Company, Wilmington, DE) – but other products may be available locally. Remember that the activated charcoal poison mixture must be removed from the body and medical help is required more than ever.

When syrup of ipecac has been given, do not use activated charcoal until *after* vomiting has occurred. The charcoal can inactivate the emetic principle in the syrup of ipecac.

**PRECAUTION:** If you take the patient to the emergency room or to a physician, inform him that charcoal has been administered. Once activated charcoal has been administered, it must be removed either by gastric lavage (stomach suction); or if this procedure is unnecessary, the patient needs to be given a saline cathartic so that removal from the G.I. tract would be facilitated.

## 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.

## Symptoms

The skin will be pale, moist, cold, and clammy. The eyes are vacant and lack luster 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.

## First Aid

Unless he is vomiting, keep the victim flat on his back with the legs 1 to 1 1/2 feet higher than the head. Keep the victim warm enough to prevent shivering. Do not overheat.

If the victim is *conscious and has not swallowed any poison*, give small amounts of milk, water, or if it is an adult, a dilute salt solution (1/2 teaspoon of table salt to 1 quart of water). Give as often as the victim will accept it. Keep the victim quiet and reassure him often.

**WARNING:** Never try to give anything by mouth to an unconscious victim.

## First-Aid Equipment

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 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.

## Contents

- One-ounce bottle of *syrup of ipecac*.
- Small plastic bottle of *soap* solution to quickly wash pesticide off the skin.
- Small plastic container of *salt*. Salt is used with water (1/2 teaspoon salt to 1 quart water) to aid an adult in shock if medical care will be delayed hours.
- Pint jar of *activated charcoal*. Mixed with water and swallowed, activated charcoal acts as an absorber of many pesticides.
- Two 1-quart containers of *clean water*. If there is no clean water, in any emergency use any available pond or stream water.
- Simple "*band aids*," *bandages*, and *tape*. All cuts and scrapes should be covered to prevent pesticides from easily entering the body.
- One *teaspoon*.
- A *blanket* kept in a place where it will not be contaminated by pesticides. The blanket should be stored in a plastic bag.
- Two *quarters*, taped to the inside cover of the first-aid kit for emergency phone calls.
- *Tongue blades* (wooden sticks) – one to mix charcoal, another to prevent biting tongue if convulsing.
- Two small, plastic *empty jars* with tight-fitting lids; one for a drinking glass or mixing activated charcoal. The other can be used for collecting vomitus to take to the doctor.
- Can of *evaporated milk* (with can opener).

## Warn Doctor Ahead of Time

Doctors generally may not be well informed of the symptoms and treatments of pesticide poisoning. This is due to the few cases they treat. Pesticide poisoning symptoms are similar to those of other illnesses and poisonings. The pesticide applicator should tell his doctor which chemicals he will use. Then, the doctor can review the symptoms and treatments and have the antidotes on hand.

Medical personnel recommend that those with above-average use of pesticides *establish a regular health surveillance program with their physician.*

**WARNING: No drugs can be given to prevent poisoning. Prevention of poisoning by reading labels and utilizing safe practices is the best antidote. Do not drink alcohol or smoke while on the job. Alcohol and smoking accentuate many poisonings.**

## Arkansas Poison Control Center

The United States Environmental Protection Agency (EPA) has established a Poison Control System throughout the nation. Participating hospitals function on a voluntary basis to provide special emergency aid in case of chemical intoxication. Each poison control center has the capability to determine the toxic constituent of commercial products, respond to calls from physicians or individuals, and provide supportive or antidotal treatment.

The Poison Control Center for Arkansas is:

Poison Control Center  
University of Arkansas for Medical Sciences,  
Emergency Room, 1-661-6161  
4301 West Markham Street  
Little Rock, AR 72205

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