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URL of this page: //medlineplus.gov/ency/article/002763.htm

## Bug spray poisoning

This article discusses the harmful effects from breathing in or swallowing bug spray (repellent).

This article is for information only. DO NOT use it to treat or manage an actual poison exposure. If you or someone you are with has an exposure, call your local emergency number (such as 911), or your local poison control center can be reached directly by calling the national toll-free Poison Help hotline (1-800-222-1222) from anywhere in the United States.

### Poisonous Ingredient

Most bug repellents contain DEET (N,N-diethyl-meta-toluamide) as their active ingredient. DEET is one of the few insect sprays that work to repel bugs. It is recommended for preventing diseases that mosquitos spread. Some of these are malaria, dengue fever, and West Nile virus.

Other less effective bug sprays contain pyrethrins. Pyrethrins are a pesticide made from the chrysanthemum flower. It is generally considered nonpoisonous, but it can cause breathing problems if you breathe in large amounts.

### Where Found

Bug sprays are sold under various brand names.

### Symptoms

Symptoms of using bug spray vary, depending on what type of spray it is.

Symptoms of swallowing sprays that contain pyrethrins are:

- Breathing difficulty
- Coughing
- Loss of alertness (stupor), from the blood oxygen level being out of balance
- Tremors (if a large amount is swallowed)
- Seizures (if a large amount is swallowed)
- Upset stomach, including cramps, stomach pain, and nausea
- Vomiting

Below are symptoms of using sprays that contain DEET in different parts of the body.

## EYES, EARS, NOSE, AND THROAT

- Temporary burning and redness, if DEET is sprayed into these parts of the body. Washing the area will usually make the symptoms go away. Burns to the eye may require medicine.

## HEART AND BLOOD (IF A LARGE AMOUNT OF DEET IS SWALLOWED)

- Low blood pressure
- Very slow heartbeat

## LUNGS AND AIRWAYS

- Breathing difficulty due to throat swelling
- Burns of the breathing passages
- Irritation

## NERVOUS SYSTEM

- Clumsiness when walking.
- Coma (lack of responsiveness).
- Disorientation.
- Insomnia and mood changes. These symptoms may occur with long-term use of large amounts of DEET (over 50% concentration).
- Death.
- Seizures.

DEET is especially dangerous for small children. Seizures may occur in small children who regularly have DEET on their skin for long periods of time. Care should be taken to use only products that have smaller amounts of DEET. These products should be used only for short periods of time. Products containing DEET probably should not be used on infants.

## SKIN

- Hives or mild skin redness and irritation. These symptoms are usually mild and will go away when the product is washed off the skin.
- More severe skin reactions that include blistering, burning, and permanent scars of the skin. These symptoms may occur when someone uses products that contain a large amount of DEET over a long period of time. Military personnel or game wardens may use these types of products.

## STOMACH AND INTESTINES (If SOMEONE SWALLOWS A SMALL AMOUNT OF DEET)

- Moderate to severe stomach irritation
- Nausea and vomiting

By far, the most serious complication of DEET poisonings is damage to the nervous system. Death is possible for people who develop nervous system damage from DEET.

## **Home Care**

Do not make the person throw up unless poison control or a health care provider tells you to. If the product is on the skin or in the eyes, flush with lots of water for at least 15 minutes.

If the person swallowed the product, give them water or milk right away, unless a provider tells you not to. Do not give anything to drink if the person has symptoms that make it hard to swallow. These include vomiting, convulsions, or a decreased level of alertness. If the person breathed in the product, move them to fresh air right away.

## **Before Calling Emergency**

Have this information ready:

- Person's age, weight, and condition
- Name of the product (ingredients and strength, if known)
- Time it was swallowed or inhaled
- Amount swallowed or inhaled

## **Poison Control**

Your local poison control center can be reached directly by calling the national toll-free Poison Help hotline (1-800-222-1222) from anywhere in the United States. This national hotline will let you talk to experts in poisoning. They will give you further instructions.

This is a free and confidential service. All local poison control centers in the United States use this national number. You should call if you have any questions about poisoning or poison prevention. It does NOT need to be an emergency. You can call for any reason, 24 hours a day, 7 days a week.

## **What to Expect at the Emergency Room**

Take the container with you to the hospital, if possible.

The provider will measure and monitor the person's vital signs, including temperature, pulse, breathing rate, and blood pressure. Symptoms will be treated.

The person may receive:

- Blood and urine tests
- Breathing support, including oxygen given through a tube through the mouth into the lungs, and a breathing machine (ventilator)
- Bronchoscopy: camera placed down the throat to see burns in the airways and lungs
- Chest x-ray
- ECG (electrocardiogram, or heart tracing)
- Endoscopy -- camera placed down the throat to see burns in the esophagus and the stomach
- Fluids through a vein (IV)

- Medicine to treat the effects of the poison
- Washing of the skin (irrigation), perhaps every few hours for several days

## Outlook (Prognosis)

For sprays that contain pyrethrins:

- For simple exposure or inhaling small amounts, recovery should occur.
- Severe breathing difficulty can quickly become life threatening.

For sprays that contain DEET:

When used as directed in small amounts, DEET is not very harmful. It is the preferred bug repellent for preventing diseases that mosquitos spread. It is usually the sensible choice to use DEET to repel mosquitos, compared to the danger of any of those diseases, even for pregnant women.

Serious problems can occur if someone swallows a large amount of a DEET product that is very strong. How well the person does depends on the amount they swallowed, how strong it is, and how quickly they receive medical treatment. Seizures can lead to permanent brain damage and possibly death.

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## Review Date 11/2/2023

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