



FACT SHEET

Facts about Strychnine

What strychnine is

- Strychnine is a white, odorless, bitter crystalline powder that can be taken by mouth, inhaled (breathed in), or mixed in a solution and given intravenously (injected directly into a vein).
- Strychnine is a strong poison; only a small amount is needed to produce severe effects in people. Strychnine poisoning can cause extremely serious adverse health effects, including death.

Where strychnine is found and how it is used

- The primary natural source of strychnine is the plant *Strychnos nux vomica*. This plant is found in southern Asia (India, Sri Lanka, and East Indies) and Australia.
- In the past, strychnine was available in a pill form and was used to treat many human ailments.
- Today, strychnine is used primarily as a pesticide, particularly to kill rats.
- Uncommonly, strychnine is found mixed with "street" drugs such as LSD, heroin, and cocaine.

How you could be exposed to strychnine

- Following release of strychnine into water, you could be exposed by drinking contaminated water.
- Following contamination of food with strychnine, you could be exposed by eating the contaminated food.
- It is also possible to absorb strychnine through the membranes in the nose, eyes, or mouth. For example, a person could be poisoned by inhaling strychnine powder that has been released in the air.
- Strychnine could be smoked or snorted as a component of street drugs.
- Poisoning has been reported from strychnine given intravenously and through the nose.

How strychnine works

- The extent of poisoning caused by strychnine depends on the amount and route of strychnine exposure and the person's condition of health at the time of the exposure.
- Strychnine prevents the proper operation of the chemical that controls nerve signals to the muscles. The chemical controlling nerve signals works like the body's "off switch" for muscles. When this "off switch" does not work correctly, muscles throughout the body have severe, painful spasms. Even though the person's consciousness or thinking are not affected at first (except that the person is very excitable and in pain), eventually the muscles tire and the person can't breathe.

Immediate signs and symptoms of strychnine exposure

- Following the ingestion (swallowing) of strychnine, symptoms of poisoning usually appear within 15 to 60 minutes.
- People exposed to low or moderate doses of strychnine by any route will have the following signs or symptoms:
 - Agitation
 - Apprehension or fear
 - Ability to be easily startled
 - Restlessness
 - Painful muscle spasms possibly leading to fever and to kidney and liver injury

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- Uncontrollable arching of the neck and back
- Rigid arms and legs
- Jaw tightness
- Muscle pain and soreness
- Difficulty breathing
- Dark urine
- Initial consciousness and awareness of symptoms
- People exposed to high doses of strychnine may have the following signs and symptoms within the first 15 to 30 minutes of exposure:
 - Respiratory failure (inability to breathe), possibly leading to death
 - Brain death
- Showing these signs and symptoms does not necessarily mean that a person has been exposed to strychnine.

What the long-term health effects are

If the person survives the toxic effects of strychnine poisoning, long-term health effects are unlikely. However, long-term effects may result from damage caused by the poisoning (for example, brain damage from low oxygen, kidney failure). People severely affected by strychnine poisoning are not likely to survive.

How you can protect yourself, and what you should do if you are exposed to strychnine

- Since ingestion is likely to be the primary route of exposure, if poisoning is suspected, avoid any further ingestion and call 911 immediately.
- Recovery from strychnine exposure is possible with early hospital treatment. Therefore, the best thing to do is get medical care as quickly as possible.
- Do not induce vomiting or give fluids to drink.
- If you think strychnine may have been released into the air, the best thing to do is avoid it. If the strychnine release was indoors, get out of the building. If the release was outdoors, move away from the area of the release, stay upwind if possible, and seek higher ground. Quickly moving to an area where fresh air is available is highly effective in reducing the possibility of death from exposure to a chemical that has been released into the air.
- If you are near a release of strychnine, emergency coordinators may tell you to either evacuate the area or "shelter in place" inside a building to avoid being exposed to the chemical. For more information on evacuation during a chemical emergency, see "[Facts About Evacuation](http://www.bt.cdc.gov/planning/evacuationfacts.asp)" (<http://www.bt.cdc.gov/planning/evacuationfacts.asp>). For more information on sheltering in place during a chemical emergency, see "[Facts About Sheltering in Place](http://www.bt.cdc.gov/planning/Shelteringfacts.asp)" (<http://www.bt.cdc.gov/planning/Shelteringfacts.asp>).
- Removing your clothing:
 - Quickly take off clothing that has strychnine on it. Any clothing that has to be pulled over the head should be cut off the body instead of pulled over the head.
 - If you are helping other people remove their clothing, try to avoid touching any contaminated areas, and remove the clothing as quickly as possible.
- Washing yourself:
 - As quickly as possible, wash any strychnine from your skin with large amounts of soap and water. Washing with soap and water will help protect people from any chemicals on their bodies.
 - If your eyes are burning or your vision is blurred, rinse your eyes with plain water for 10 to 15 minutes. If you wear contacts, remove them and put them with the contaminated clothing. Do not put the contacts back in your eyes (even if they are not disposable contacts). If you wear eyeglasses, wash them with soap and water. You can put your eyeglasses back on after you wash them.

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- Disposing of your clothes:
 - After you have washed yourself, place your clothing inside a plastic bag. Avoid touching contaminated areas of the clothing. If you can't avoid touching contaminated areas, or you aren't sure where the contaminated areas are, wear rubber gloves or put the clothing in the bag using tongs, tool handles, sticks, or similar objects. Anything that touches the contaminated clothing should also be placed in the bag. If you wear contacts, put them in the plastic bag, too.
 - Seal the bag, and then seal that bag inside another plastic bag. Disposing of your clothing in this way will help protect you and other people from any chemicals that might be on your clothes.
 - When the local or state health department or emergency personnel arrive, tell them what you did with your clothes. The health department or emergency personnel will arrange for further disposal. Do not handle the plastic bags yourself.
- For more information about cleaning your body and disposing of your clothes after a chemical release, see "[Chemical Agents: Facts About Personal Cleaning and Disposal of Contaminated Clothing](http://www.bt.cdc.gov/planning/personalcleaningfacts.asp)" (<http://www.bt.cdc.gov/planning/personalcleaningfacts.asp>).
- Seek medical attention right away. Dial 911 and explain what has happened.

How strychnine exposure is treated

Treatment consists of removing the drug from the body (decontamination) and getting supportive medical care in a hospital setting. Supportive care includes intravenous fluids (fluids injected directly into a vein), medications for convulsions and spasms, and cooling measures for high temperature.

How you can get more information about strychnine

You can contact one of the following:

- Regional poison control center (1-800-222-1222)
- Centers for Disease Control and Prevention
 - Public Response Hotline (CDC)
 - 800-CDC-INFO
 - 888-232-6348 (TTY)
 - Emergency Preparedness and Response Web site (<http://www.bt.cdc.gov/>)
 - E-mail inquiries: cdcinfo@cdc.gov

This fact sheet is based on CDC's best current information. It may be updated as new information becomes available.

Last reviewed on 03/23/05.

The Centers for Disease Control and Prevention (CDC) protects people's health and safety by preventing and controlling diseases and injuries; enhances health decisions by providing credible information on critical health issues; and promotes healthy living through strong partnerships with local, national, and international organizations.

For more information, visit www.bt.cdc.gov/chemical, or call CDC at 800-CDC-INFO (English and Spanish) or 888-232-6348 (TTY).

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