



Ricin Poisoning

What is Ricin?

Ricin is a poison that can be made from the waste left over from processing castor beans. It can be in the form of a powder, a mist, or a pellet or it can be dissolved in water or weak acid. Once ricin gets inside the cells of a person's body, it prevents those cells from making the proteins they need. Without those proteins, the cells die; and eventually death may occur. Effects of ricin poisoning depend on whether ricin was inhaled, ingested or injected.

What are the symptoms of ricin poisoning?

Major symptoms of ricin poisoning depend on the route of exposure and the dose received, though many organs may be affected in severe cases.

- **Inhalation:** Initial symptoms of ricin poisoning by inhalation of ricin mist or powder may occur within 8 hours of exposure. Within a few hours of inhaling significant amounts of ricin, likely symptoms would be difficulty breathing, fever, cough, nausea and tightness in the chest. Heavy sweating may follow as well as fluid building up in the lungs. This would make breathing even more difficult and the skin might turn blue. Finally, low blood pressure and respiratory failure may occur, leading to death.

- **Ingestion:** Following ingestion of ricin — usually from contaminated food or water, initial symptoms may occur in less than 6 hours but usually are delayed for 1 to 3 days. If someone swallows a significant amount of ricin, he or she would develop vomiting and diarrhea that may become bloody. Severe dehydration may result, followed by low blood pressure. Other signs or symptoms may include hallucinations, seizures and blood in the urine. Within several days, liver, spleen and kidney failure can occur, followed by death.

- **Skin and eye exposure:** Ricin in the powder or mist form can cause redness and pain of the skin and the eyes.

Death from ricin poisoning could take place within 36 to 72 hours of exposure, depending on the route of exposure (inhalation, ingestion or injection) and the dose received. If death has not occurred in 3 to 5 days, the victim usually recovers. Showing these signs and symptoms does not necessarily mean that a person has been exposed to ricin.

How is it spread?

Ricin poisoning is not contagious. It cannot be spread from person to person through casual contact. Accidental exposure to ricin is highly unlikely. It would take a deliberate act to make ricin and use it as a poison. It can be deployed through the air as a mist or powder, or as a food or water contaminant. Pellets of ricin, or ricin dissolved in a liquid, can be injected into a person's body.

How is it treated?

Because no antidote exists for ricin, the most important factor is avoiding ricin exposure. If exposure cannot be avoided, one must be decontaminated as quickly as possible. Ricin poisoning is treated by giving victims supportive medical care to minimize the effects of the poisoning. The types of supportive medical care would depend on several factors, such as the route by which victims were poisoned (i.e., inhalation, ingestion or skin or eye exposure).

What should I do if I think I have ricin poisoning?

Care could include such measures as helping victims breathe, giving them intravenous fluids (fluids given through a needle inserted into a vein), giving them medications to treat conditions such as seizure and low blood pressure, flushing their stomachs with activated charcoal (if the ricin has been recently ingested) or flushing their eyes with water if their eyes are irritated.

If you are near a release of ricin, emergency coordinators may tell you to either evacuate the area or to “shelter in place” inside a building to avoid being exposed to the chemical. Moving to an area with fresh air is a good way to reduce the concentration of exposure to ricin.

- If the ricin release was outside, move away from the area where the ricin was released.

- If the ricin release was indoors, get out of the building.

If someone has ingested ricin, do not induce vomiting or give fluids to drink. Seek medical attention right away. Dial 911 and explain what has happened.

If you think you may have been exposed to ricin, you should remove your clothing, rapidly wash your entire body with soap and water and get medical care as quickly as possible. 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, avoid touching any contaminated areas and remove the clothing as quickly as possible. 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, turn the bag inside out and use it to pick up the clothing, 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. 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. Health department or emergency personnel will arrange for further disposal. Do not handle the plastic bags yourself.

What is Tarrant County doing about it?

Tarrant County Public Health (TCPH) maintains regular contact with the Texas Department of Health and the Centers for Disease Control and Prevention (CDC) in the reporting and investigation of health threats. TCPH has a local health alert network for informing the medical community, the business community and the public in the event that any threat to the public's health is detected in the County. If a large number of people who had been close to each other suddenly developed fever, cough, and excess fluid in their lungs, this will be a potential clue to ricin poisoning and we will take appropriate measures.

Where can I get more information?

You can call the regional poison control center (1-800-222-1222), visit us online (<http://health.tarrantcounty.com>); call our Epidemiology and Health Information office at 817-321-5350; or contact the CDC's Public Response Hotline at 1-888-246-2675 (www.bt.cdc.gov).