



MIDDLESEX COUNTY PUBLIC HEALTH DEPARTMENT Division of Epidemiology and Bioterrorism

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FACT SHEET

RICIN

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.
- It is not affected much by extreme conditions such as very hot or very cold temperatures.

Where is ricin found and how is it used?

- Castor beans are processed throughout the world to make castor oil. Ricin is part of the waste “mash” produced when castor oil is made.
- Ricin has some potential medical uses, such as bone marrow transplants and cancer treatment (to kill cancer cells).

How could you be exposed to ricin?

- It would take a deliberate act to make ricin and use it to poison people. Accidental exposure to ricin is highly unlikely.
- People can breathe in ricin mist or powder and be poisoned.
- Ricin can also get into water or food and then be swallowed.
- Pellets of ricin, or ricin dissolved in a liquid, can be injected into people’s bodies.
- Ricin poisoning is not contagious. It cannot be spread from person to person through casual contact.

How does ricin work?

- Ricin works by getting inside the cells of a person’s body and preventing the cells from making the proteins they need. Without the proteins, cells die. Eventually this is harmful to the whole body, and death may occur.
- Effects of ricin poisoning depend on whether ricin was inhaled, ingested, or injected.

What are the signs and symptoms of ricin exposure?

- The major symptoms of ricin poisoning depend on the route of exposure and the dose received, though many organs may be affected in severe cases. Symptoms usually appear within 6 – 8 hours after exposure.

Inhalation: Within a few hours of inhaling significant amounts of ricin, the likely symptoms would be:

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| ▪ respiratory distress (difficulty breathing) | ▪ low blood pressure |
| ▪ fever | ▪ respiratory failure |
| ▪ cough | ▪ tightness in the chest |
| ▪ nausea | |

Ingestion: If someone swallows a significant amount of ricin, he or she would develop vomiting and diarrhea that may become bloody.

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

How is ricin poisoning treated?

Because no antidote exists for ricin, the most important factor is avoiding ricin exposure in the first place. If exposure cannot be avoided, the most important factor is then getting the ricin off or out of the body as quickly as possible. Ricin poisoning is treated by giving victims supportive medical care to minimize the effects of the 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 very recently ingested), or washing out their eyes with water if their eyes are irritated.

How do you know whether you have been exposed to ricin?

If we suspect that people have inhaled ricin, a potential clue would be that a large number of people who had been close to each other suddenly developed fever, cough, and excess fluid in their lungs. These symptoms could be followed by severe breathing problems and possibly death. No widely available, reliable test exists to confirm that a person has been exposed to ricin.

How do you protect yourself, and what to do if you are exposed to ricin?

- First, get fresh air by leaving the area where the ricin was released.
- 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 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.
- 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.

Removing your clothing:

- Quickly take off clothing that may have ricin 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 ricin 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.

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, 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. 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.
- 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.

How can I get more information about ricin?

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)
English (888) 246-2675, **Español** (888) 246-2857, **TTY** (866) 874-2646