



RICIN TOXIN

Agent information:	Ricin is a potent cytotoxin derived from the beans of the castor plant. Castor beans are abundant and the toxin is relatively easy to extract. It can be prepared as a powder, a mist, or a pellet, or it can be dissolved in water or weak acid.
Transmission:	No person-to-person transmission. Routes of exposure include inhalation, ingestion, and parenteral.
Signs and symptoms:	<p>Inhalation: Limited data indicate that symptoms would present as acute onset of fever, chest tightness, cough, dyspnea, nausea, and arthralgias in four to eight hours. The aerosol route can produce necrosis of the upper and lower respiratory system. Other effects would include cyanosis, respiratory inflammation, and pulmonary edema.</p> <p>Ingestion: Severe gastrointestinal lesions with irritation of the oropharynx, esophagus, or stomach when directly exposed. Although clinically similar to alkaline caustic burns, lesions are usually delayed two or more hours after exposure. Ingestion may cause abdominal pain, nausea and vomiting, and profuse bloody diarrhea. In severe cases, shock develops. Late phase complications include cytotoxic effects on the liver, central nervous system, kidney, and adrenal glands, typically two to five days after exposure. The patient may be asymptomatic during the preceding one to five days.</p> <p>Parenteral: Local tissue and muscle necrosis with eventual multisystem organ failure.</p>
Decontamination:	Yes, if exposure is from aerosolization and presentation is immediate.
Isolation:	No.
Protective measures:	Employ standard precautions. Use a surgical mask to prevent aerosol exposure to health care personnel (secondary aerosols are not expected to endanger health care workers). Decontaminate exposed areas with soap and water. A 1% hypochlorite solution (1:5 dilution of household bleach) can inactivate ricin and by heating above 176 degrees F (80 degrees C).

Emergency Medical Services and Preparedness Section
24/7 Emergency Contact Number: 1-888-295-5156
Contact Number: 302-223-2999



- Evaluation:** Environmental testing only. Only trained professionals should collect samples for laboratory testing by double-bagging specimens and decontaminating the exterior of bags. The Centers for Disease Control and Prevention (CDC) and CDC-approved laboratories can test clinical urine samples for the presence of ricinine, an indicator of ricin exposure.
- Prophylaxis:** No vaccine or antitoxin is available for ricin.
- Treatment:** Treatment is based on the route of exposure. Respiratory support includes oxygen, intubation, and mechanical ventilation as needed. Supportive treatment includes monitoring of fluid and electrolyte status, fluid replacement, medication to treat seizure and low blood pressure, stomach flushing, and eye washing.
- Reporting:** Report suspect cases immediately to the Division of Public Health, Office of Infectious Disease Epidemiology: 1-888-295-5156 (24/7 coverage).
- Additional information:** Visit the CDC website: www.emergency.cdc.gov/agent/ricin/.