

RICIN: Health Care Information

Ricin is a highly potent toxin that is extracted from the castor bean (*Ricinus communis*). It may be used as a weapon of mass destruction as an aerosolized liquid or powder, or introduced into the food or water. Ricin may be inhaled or ingested. There is no significant dermal absorption of ricin. Ricin toxin is transported into the body's cells, binds to ribosomes, and stops protein synthesis. This leads to a delayed-onset diffuse cellular toxicity and capillary leak.

Recognition and Triage: After an **inhalational exposure**, patients remain asymptomatic for several hours. Approximately 4 to 8 hours after exposure, respiratory symptoms begin (**dyspnea, mucosal irritation, cough, pulmonary edema**), followed hours later by diffuse systemic toxicity (**vomiting, diarrhea, diaphoresis**) and a diffuse systemic inflammatory response syndrome and capillary leak (**SIRS, ARDS, hypotension**).

After **ingestion** of ricin, **gastrointestinal and systemic symptoms** predominate and pulmonary complaints are rare.

Personal Protective Equipment (PPE) (at the health care site): Airborne exposure/powder: Personnel who decontaminate patients should wear splash-proof PPE (waterproof outer garment) and a filtered air respirator. Personnel treating decontaminated patients require no PPE other than universal precautions. Food/water exposure: No PPE other than universal precautions is necessary.

Decontamination (at the health care site): Airborne exposure/powder: Sufficient decontamination includes removal of **ALL** clothing and jewelry and thorough washing of the skin and hair with water for 3 to 5 minutes. Food/water exposure: No external decontamination is necessary.

Diagnosis and Treatment: Diagnosis may be made by sending a **25 mL urine sample** to the Oregon State Health Lab. In unknown chemical events, draw and send **3 purple top and one green (or gray) top tube** of blood to the Oregon State Health Lab (see attached chemical specimen sheet).

Treatment is Supportive: There are no specific antidotes. Aggressive supportive care, meticulous fluid management, oxygen, and mechanical ventilation with positive end-expiratory pressure may be necessary for critically ill patients. Contact the Poison Center (1 800 222 1222) for specific questions or advice on individual patients

Patient Monitoring: Continuous monitoring of pulse oximetry and end-tidal carbon dioxide may help assess oxygen exchange. Continuous cardiac and blood pressure monitoring are necessary for critically ill patients.

Disposition Criteria (when to send the patient home): Initially asymptomatic or mildly symptomatic patients may progress to severe systemic toxicity over 4 to 8 hours. Patients with mild or no symptoms after 8 hours may be discharged with instructions to return if symptoms worsen.

Reporting/Coordination Link: Call the **Poison Center (1 800 222 1222)** for information on specific patients. Contact the local or state public health authority (**Oregon Public Health Hotline: 1 800 805 2313**) to report a mass casualty incident.

Please review the CDC Collection Protocol, which should be included with this FAX.