



CASE DEFINITION

Ricin (Inhalation)

Clinical description

Inhalation of ricin typically leads to cough and respiratory distress followed by pulmonary edema, respiratory failure, and multi-system organ dysfunction. Weakness and influenza-like symptoms of fever, myalgia, and arthralgia might also be reported (1-5).

Laboratory criteria for diagnosis

- *Biologic*: CDC can assess selected specimens on a provisional basis for urinary ricinine, an alkaloid in the castor bean plant. Only urinary ricinine testing is available at CDC for clinical specimens
- OR-
- *Environmental*: Detection of ricin in environmental samples, as determined by CDC or FDA. Ricin can be detected qualitatively by TRFIA and PCR in environmental specimens (e.g., filters, swabs, or wipes).

Case classification

- *Suspected*: A case in which a potentially exposed person is being evaluated by health-care workers or public health officials for poisoning by a particular chemical agent, but no specific credible threat exists.
- *Probable*: A clinically compatible case in which a high index of suspicion (credible threat or patient history regarding location and time) exists for ricin exposure, or an epidemiologic link exists between this case and a laboratory-confirmed case.
- *Confirmed*: A clinically compatible case in which laboratory tests have confirmed exposure.

The case can be confirmed if laboratory testing was not performed because either a predominant amount of clinical and nonspecific laboratory evidence of a particular chemical was present or a 100% certainty of the etiology of the agent is known.

Additional resources

1. Ellenhorn MJ, Barceloux DG, eds. Ornamental beans. In: Medical toxicology: diagnosis and treatment of human poisonings. New York, NY: Elsevier; 1997:1225-7.

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2. Kortepeter MG, Parker GW. Potential biological weapons threats. *Emerg Infect Dis* 1999;5:523--7. Available at <http://www.cdc.gov/ncidod/EID/vol5no4/kortepeter.htm>.
3. US Army Medical Research Institute of Infectious Diseases. Ricin. In: Eitzen E, Pavlin J, Cieslak T, Christopher G, Culpepper R, eds. *Medical management of biological casualties [Handbook]*. 4th ed. Fort Detrick: MD: US Army Medical Research Institute of Infectious Diseases, Operational Medical Division; 2001:101-6.
4. Franz DR, Jaax NK. Ricin toxin. In: Zajtchuk R, Bellamy RF, eds. *Textbook of military medicine: medical aspects of chemical and biological warfare*. Washington, DC: US Department of the Army; 1997:631-42.
5. Knight B. Ricin---a potent homicidal poison. *BMJ* 1979;1:350-1.

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