



CASE DEFINITION

Vesicant (Mustards, Dimethyl Sulfate, and Lewisite)

Clinical description

The most common clinical effects after exposure to vesicants include dermal (skin erythema and blistering), respiratory (cough, dyspnea, pneumonitis, and acute lung injury), ocular (conjunctivitis and burns), and gastrointestinal (vomiting) signs and symptoms. The effects of the majority of vesicants manifest rapidly (within minutes). However, clinical findings might be delayed for hours after exposure (e.g., sulfur mustard) (1-4).

Laboratory criteria for diagnosis

- *Biologic*: A case in which sulfur mustard in biologic samples is detected, as determined by CDC or one of five LRN laboratories that have this capacity, and a case in which nitrogen mustard and lewisite are detected in biologic samples, as determined by CDC.
- *Environmental*: Confirmation of the detection of vesicants in environmental samples is not available.

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 vesicant exposure, or an epidemiologic link exists between this case and a laboratory-confirmed case.
- *Confirmed*: A clinically compatible case in which laboratory tests on biologic samples 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. Stahl CJ, Green CC, Farnum JB. The incident at Tuol Chrey: pathologic and toxicologic examinations of a casualty after chemical attack. *J Forensic Sci* 1985;30:317-37.
2. Borak J, Sidell FR. Agents of chemical warfare: sulfur mustard. *Ann Emerg Med* 1992;21:303-8.

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3. Sidell FR, Urbanetti JS, Smith WJ, Hurst CG. Vesicants. In: Zajtchuk R, Bellamy RF, eds. Textbook of military medicine: medical aspects of chemical and biologic warfare. Washington, DC: Office of the Surgeon General at TMM Publications, Borden Institute, Walter Reed Army Medical Center; 1997:197-228.
4. Siegel D, Younggren BN, Ness B, Kvoil V. Operation Castle Cascade: managing multiple casualties from a simulated chemical weapons attack. *Mil Med* 2003;168:351-4.

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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