

## Education

### Chemical Terrorism Agents

What are chemical terrorism agents?

Chemicals used for terrorism are man-made, unlike naturally occurring biological agents. Most chemical terrorism agents are liquids that are put into the air and then absorbed through the skin or breathed into the lungs. Chemical agents may cause:

- irritation of the eyes or nose
- trouble breathing or stop you from breathing completely
- nausea, vomiting, or abdominal pain
- loss of muscle control (twitching) or paralysis
- loss of consciousness
- seizures.

If the chemical agent is breathed in as a vapor, it may work within seconds to minutes. Liquid droplets absorbed through the skin work in minutes to hours.

Chemical agents come in several forms. For example:

- Vesicants: Examples include mustard gas, Lewisite, and phosgene oxime. Vesicants are chemicals that cause blistering of the skin, irritation and inflammation of the airways, vomiting, and diarrhea. There are antidotes that limit or stop the effects of some but not all, of these chemicals.
- Cyanide: Cyanide forms a gas when mixed with acids. It was this gas that was used in the gas chambers of Nazi Germany. Large doses of cyanide can kill within minutes. Smaller doses affect the central nervous system, for example, causing seizures. There are antidotes to cyanide poisoning.
- Pulmonary agents: Phosgene and perfluoroisobutylene cause swelling and fluid retention in the lungs. They don't have any effect until several hours after exposure, when you begin to cough and have trouble breathing. Hours to days later, as the chemicals cause more swelling and inflammation, more fluid builds up in the lungs. Eventually the fluid can make it so hard to breathe that it causes death. People who are exposed to these chemicals should be kept at rest and not even allowed to walk because exertion makes the symptoms worse.
- Incapacitating agents: These chemicals affect the nervous system. They cause confusion, disorientation, delusions, and hallucinations. They also cause blurred vision, a rapid heart rate, and slurred speech. There is an antidote, but it must be given every hour until the effects of the chemical wear off--usually for several hours to a day or two, depending on how much chemical you were exposed to. Sarin is an example of this type of chemical.

What should I do if I am exposed to a chemical terrorism agent?

If you or someone you know might have been exposed to a chemical agent, get medical care right away. Go to the closest emergency room.

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