

# Chemical Agents

**Chemical warfare agents are gases, liquids or solids that can poison people, animals and plants. Chemical warfare agents can cause injuries and death. How serious the injuries are depends on the type of chemical, the amount and the length of exposure.**

## **What are chemical agents?**

- The main chemical warfare agents are sulfur mustard (mustard gas) and nerve agents such as Sarin and VX. These agents are typically released as a vapor or liquid. During a chemical attack, the greatest danger would come from breathing the vapors. If a large amount of chemical were released as an aerosol, people's skin might be exposed to the agent as droplets.

## **Sulfur mustard: symptoms and treatment**

- Sulfur mustard can cause skin to become red and irritated. Larger amounts will make the skin blister.
- Sulfur mustard can damage your eyes causing irritation, redness and swelling of the lids.
- Breathing in sulfur mustard can cause throat irritation, sinus pain and coughing. Breathing in large amounts will damage the lungs.
- If you are exposed to sulfur mustard, it may take four to eight hours before you feel symptoms. However, after a relatively small exposure, symptoms may take up to 24 hours to develop.
- Medical staff can treat you with soothing lotions, eye drops and pain medication. If infections develop, you may be given antibiotics.

## **Nerve agents: symptoms and treatment**

- A small amount of vapor can make pupils smaller, dim or blur vision, and cause eye pain, a runny nose or shortness of breath.

- Moderate amounts of vapor can cause muscle weakness, nausea, vomiting and diarrhea.
- Exposure to large amounts of vapor can cause interruption of breathing, muscle weakness, loss of consciousness, convulsions and death.
- Effects usually appear seconds to minutes after breathing the vapor of a nerve agent.
- Exposure to small amounts of vapor may cause only smaller than normal pupils and may take an hour to appear.
- If you are exposed to a large amount of a nerve agent and have a runny nose, difficulty breathing, or nausea and vomiting, you may be treated with the medicines *atropine* or *pralidoxime*.

### **What you should do if there is a chemical attack**

- If there is a chemical attack, authorities will tell you either to evacuate the area immediately or to seek shelter.
- If you have symptoms of exposure, call 9-1-1 immediately.
- If you were outside before taking shelter and think you may have been exposed to a chemical agent:
  - Take off your outer clothes, put them in a plastic bag and seal the bag. Tell emergency staff about the sealed bag so they can remove it safely.
  - Wash or take a cool shower (do not use hot water). Use lots of soap. Do not put soap in your eyes.
  - If you leave the area, tell emergency or medical staff at your new location that you may have been exposed.



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