

Exposure to chemical and biological substances, such as mustard gas, can have a serious effect on a person's health and can cause death. "Chemical and Biological Threats", published by WHO in 2003, warns against the use of such substances and gases. Today, WHO is renewing its warning and providing detailed information on mustard gas: what it is, how it can be detected, its routes of exposure, symptoms and symptomatic treatment.

Q1. What is mustard gas?

The term "mustard gas" refers to several manufactured chemicals, including sulphur mustard. They are not naturally occurring in the environment. Mustard gas does not behave as a gas under normal conditions.

Q2. How can it be detected?

It is colourless and odourless, but when mixed with other chemicals, it becomes brown and has a garlic-like smell.

Q3. What are the routes of exposure?

The substance can be absorbed into the body by all routes.

Q4. Does mustard gas has serious effects on health?

Yes.

☐ Mustard gas is a powerful irritant and blistering threat.

☐ It can cause skin burns and blisters within a few days and damage to the

respiratory tract.

☐ It is more harmful to the skin on hot, humid days, or in tropical climates.

☐ It causes the eyes to burn, eyelids to swell, and repeated blinking.

☐ If mustard gas is inhaled, it can cause coughing, inflammation and irritation

of the lungs, and long-term respiratory disease and the patient could

eventually die.

Q5. Can exposure to mustard gas cause death?

Yes.

- In the long term the risk of developing cancer after a single exposure is likely.
  
- Exposure to mustard gas in the long term can also result in mortality from influenza, pneumonia and chronic breathing disease.
  
- People who are severely poisoned risk dying in the second week after exposure due to respiratory complications and septic shock.

Q6. When do the signs of exposure to the gas begin?

Effects of exposure to mustard gas vapour or liquid are typically delayed for several hours.

Q7. What are the symptoms of exposure?

Immediate symptoms after exposure may include:

- a feeling of sickness (nausea)
  
- trying to vomit (retching)
  
- actual vomiting
  
- irritation and watering of the eyes.

Exposure to important concentrations may induce:

- fits (convulsions)
  
- coma
  
- death within one hour after exposure.

2 to 6 hours after exposure

☐ Nausea

☐ Fatigue

☐ Headache

☐ Eye inflammation with intense eye pain

☐ Watery eyes

☐ Quivering eyelids

☐ intolerance to light

☐ Runny nose

☐ Reddening of the face and neck

☐ Soreness of the throat

□ Increased pulse.

6 to 24 hours after exposure

□ the above symptoms are generally increased in severity and are accompanied by skin inflammation followed by blister formation in the warmest areas of the body such as the inner thighs.

24 hours after exposure

□ the condition generally worsens, blistering becomes more marked, coughing starts. Mucus, pus and necrotic slough may be coughed up. Intense itching of skin and increased skin pigmentation occur.

Q8. How should one decontaminate and treat someone exposed to the gas?

□ Remove victim from source of exposure and then remove contaminated

clothing

□ Support breathing, circulation and heart function

□ Treat water-logged lungs and breathing problems

□ Patients with severe reduction in white blood cells should be isolated

to avoid secondary infection and septic shock.

Q9. How should one treat eye contamination?

□ Irrigate the eyes immediately with ample amounts of normal or saline

(salty) water for at least 15 minutes.

□ As sulphur mustard is fat soluble, it is advisable to use diluted infant

shampoo as well.

Q10. How should one treat skin decontamination?

□ Avoid showering the victim as this may spread the agent. Apply an absorbent powder such as Fuller's Earth, talcum or flour. If this is not available, wash exposed area thoroughly with water and neutral soap.

□ Washing with paraffin followed by the use of soap and water has also been

recommended.

Q11. How should one treat stomach decontamination?

□ Do not induce vomiting.

□ The stomach should be washed out, making sure that the lungs are

protected. Prior to washing out the stomach, contents should be diluted

by 100 to 200 ml of milk or clean water.

□ Activated charcoal is of unproven benefit, but may be used.



Q12. What are the steps of symptomatic treatment?

□ Provide adequate pain relievers BUT NOT morphine.

□ Correct fluid and electrolyte imbalance carefully.

□ Steroids are effective in staving off lung tissue poisoning.

□ Treat eyes with antibiotics, preferably sulfacetamide 20% solution, and

a solution to widen the pupils. In the event of inflammation of the cornea

of the eye, DO NOT use steroid eye drops. Dark glasses are helpful, but

contact lenses are not to be worn.

□ Observe patients who ingested contaminated food or water with mustard

gas for the development of complications caused by stomach and intestinal

burns, such as haemorrhage and perforation. Blood transfusion may be



□ Contamination is through all routes, including water and food ingestion.

□ Skin decontamination is mainly by washing with soap and water.

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