# Signs and Symptoms of Chemical Exposures

## Chemical Warfare Agents

<table>
<thead>
<tr>
<th>Class of chemical exposure</th>
<th>Signs and symptoms</th>
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| **Nerve agents** (e.g. Tabun, Sarin or VX) | **Mild**  
  - Dizziness, anxiety, headache, weakness, chest tightness, rhinorrhea, coughing, sweating, salivation, lacrimation, nausea, Mild bradycardia and hypotension  
| **Moderate** | Restlessness, confusion, drowsiness, loss of consciousness, miosis/mydriasis*, eye pain, muscle twitching, fasciculation, abdominal pain, vomiting, diarrhoea, bradycardia/tachycardia*, hypotension / hypertension*, pallor, dyspnoea, bronchorrhoea, bronchospasm, respiratory depression  
| **Severe** | Convulsions, flaccid paralysis, deep coma, involuntary micturition/defecation, respiratory failure, pulmonary oedema, cyanosis  
| **Fatal** | Coma, convulsions, hypersecretions and apnoea within a few minutes of exposure  

*Depending on whether the muscarinic or nicotinic syndrome is dominant, miosis or mydriasis, bradycardia or tachycardia, hypotension or hypertension may occur.

### Blister agents (e.g. mustard gases, lewisite)

- Lachrymation, eye irritation, conjunctivitis, corneal damage, transient blindness, hoarse voice, sore throat
  - **Delayed signs and symptoms (several hours):**
    - Redness and blisters of the skin with pain.
    - Later on, detachment of the upper skin layers with impaired wound healing.
    - Blister formation is typically delayed following exposure to sulfur mustard, but rapid following exposure to lewisite.
    - **Upper airway irritation**
    - **Respiratory distress** – usually a late complication
    - Immune deficiency

### Cyanide

- Gasping for air, asphyxiation, mydriasis, seizures, tachycardia, arrhythmias, confusion, nausea, cherry-pink skin (cyanosis also possible)

## Incapacitating Agents

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| **Agent 15, BZ** | Mydriasis, altered consciousness, delusions, hallucinations, dry mouth and skin, tachycardia, hyperthermia, ataxia  
| **Opioids** | Miosis, drowsiness, dizziness, ataxia, coma, respiratory depression, apnoea |

## Riot Control Agents (RCA)

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| **Tear gas / riot control agents** | Stinging and burning sensation to eyes and mucous membranes, lachrymation/salivation, runny nose, light chest, headache, nausea  

## Other Toxic Chemicals

### Chlorine

- Eye redness and lachrymation, upper airway irritation, cough (may be productive), suffocation or choking sensation, light chest, shortness of breath/wheezeing, hoarse voice, nausea and vomiting
  - **Delayed signs and symptoms (a few hours):**
    - Pulmonary oedema

### Phosgene

- Eye redness and lachrymation, nausea and vomiting, light chest, shortness of breath/wheezeing, hypotension
  - **Delayed signs and symptoms (up to 72 hours):**
    - Pulmonary oedema