



Fact Sheet on Selected Biological and Chemical Agents

The following agents are listed by the Centers for Disease Control as having the greatest potential for use in terrorist activity due to the ease of dissemination, and the potential for high mortality.

Biological agents	Incubation period	Possible Symptoms ¹	Routes of Entry	Notes
Anthrax (<i>Bacillus anthracis</i>)	1-7 days	fever, malaise, fatigue, cough, chest discomfort, severe respiratory distress, sores or blisters, that develop into black patches with swelling, intense stomach pain, dehydration, bowel obstruction, blood poisoning	<ul style="list-style-type: none"> Inhalation Dermal contact Ingestion 	<ul style="list-style-type: none"> Not contagious Fine white or brown colored powder Mass distribution in aerosol form
Botulism (<i>Clostridium botulinum</i>)	12-36 hours	<i>doubled or blurred vision, drooping eye lids, slurred speech, difficulty swallowing, dry mouth, muscle weakness, may experience muscle paralysis and respiratory distress</i>	<ul style="list-style-type: none"> Ingestion 	<ul style="list-style-type: none"> Not contagious Mass distribution in aerosol form Sabotage
Pneumonic Plague (<i>Yersinia pestis</i>)	1-7 days	fever, chills, malaise, muscle aches, nausea, sore throat, headache, vomiting, prostration, weakness, <i>rapid development of pneumonia, sometimes bloody or watery sputum</i>	<ul style="list-style-type: none"> Inhalation 	<ul style="list-style-type: none"> Highly contagious Mass distribution in aerosol form Person to person contact via respiratory droplets
Pneumonic Tularemia <i>Francisella tularensis</i>	1-14 days usually 3-5 days	fever, chills, headache, malaise, fatigue or extreme tiredness, dry cough, abdominal pain, weight loss, swollen and painful lymph glands, swollen and painful eyes and throat, pneumonia, bloody spit	<ul style="list-style-type: none"> Inhalation Ingestion Conjunctiva of the eye 	<ul style="list-style-type: none"> Not contagious Mass distribution in aerosol form
Smallpox (<i>Variola major</i>)	7-19 days, usually 10-14 days	malaise, high fever, chills, vomiting, abdominal pain, headaches, backaches, <i>rash consisting of red spots that lead to painful pustules that scab over and fall off, bleeding of the skin and mucus membranes, sometimes delirium</i>	<ul style="list-style-type: none"> Inhalation via droplet nuclei Dermal contact 	<ul style="list-style-type: none"> Highly contagious Mass distribution in aerosol form Person to person contact
Viral Hemorrhagic Fevers (VHF) <i>Arenaviridae</i> (<i>Argentine hemorrhagic fever, Lassa fever</i>) <i>Bunyviridae</i> (<i>Crimean Congo hemorrhagic fever, Hanta virus pulmonary syndrome</i>) <i>Filoviridae</i> (<i>Ebola, Marburg hemorrhagic fever</i>) <i>Flaviviridae</i> (<i>Kyasanur Forest disease</i>) <i>Paramyxoviridae</i> (<i>Nipah virus encephalitis, Hendra virus disease</i>)	Usually 2-4 weeks Can be as short as a few days	fatigue, high fever, dizziness, muscle aches, loss of strength, exhaust, <i>hemorrhages and bleeding</i>	<ul style="list-style-type: none"> Contact with human body fluids 	<ul style="list-style-type: none"> Moderately contagious Mass distribution in aerosol form Person to person contact



Chemical agents	Possible Symptoms ²	Characteristics	Routes of Entry	Notes
Ricin	fever, cough, nausea, muscle aches, respiratory distress, cyanosis, increased difficulty breathing	Extracted from castor bean	<ul style="list-style-type: none"> • Inhalation • Ingestion • Injection • Eye contact 	<ul style="list-style-type: none"> • Mass distribution in aerosol form
Sarin <i>chemical nerve agent</i>	tearing of eyes, sweating, pinpoint pupils, red eyes, dimmed or blurred vision, pain in eye or head, vomiting, nausea, inhalation; asthma like symptoms, loss of consciousness, convulsions drooling, tightness in chest	Heavier than air, clear colorless, odorless liquid, volatile	<ul style="list-style-type: none"> • Dermal contact • Inhalation 	<ul style="list-style-type: none"> • Mass distribution in aerosol form
VX <i>military nerve agent</i>	<p>symptoms appear within a few seconds of exposure to vapors and minutes to hours for the liquid</p> <p>runny nose, watery eyes, pinpoint pupils, eye pain, blurred vision, drooling, excessive sweating, chest tightness, rapid breathing, diarrhea, increased urination, headache weakness</p>	Odorless, tasteless, oily liquid with amber color	<ul style="list-style-type: none"> • Inhalation • Dermal contact • Eye contact • Ingestion 	<ul style="list-style-type: none"> • Mass distribution in aerosol form
Mustard gas <i>chemical war agent</i>	redness and itching of the skin, tearing, eye irritation, runny nose, sneezing or hoarseness, bloody nose, shortness of breath, abdominal pain, fever diarrhea, vomiting	Smells like garlic, mustard, onions or may have no odor	<ul style="list-style-type: none"> • Inhalation • Dermal contact • Ingestion 	<ul style="list-style-type: none"> • Mass distribution in aerosol form
Cyanide	<p>Exposure to small amounts: rapid breathing, restlessness, dizziness, weakness, headache, nausea and vomiting, rapid heart rate</p> <p>Exposure to large amounts: convulsions, low blood pressure, slow heart rate, loss of consciousness, lung injury, respiratory failure leading to death</p>	Bitter almond smell	<ul style="list-style-type: none"> • Inhalation • Dermal contact • Eye contact • Ingestion 	<ul style="list-style-type: none"> • Mass distribution in aerosol form

¹Symptoms to biological agents may occur within days to weeks
²Symptoms to chemical agents may occur within minutes to hours

For further information, contact OEHS at 213-743-5086, Student Medical Services at (213) 763-8342 or Los Angeles County Department of Health Services at (213) 240-7785

Additional information may be obtained from the following websites :

- <http://www.bt.cdc.gov>
- <http://www.usamriid.army.mil/education/bluebook.html>
- http://www.cia.gov/cia/publications/cbr_handbook/cbrbook.htm
- http://hld.sbcom.army.mil/ip/bca_qr.htm
- <http://www.counterterrorismtraining.gov/focus.html>
- <http://www.labt.org>