

# NOVA Online | Bioterror | Agents of Bioterror

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	Anthrax	Botulism	Cholera	Glanders	Plague	Q Fever	Smallpox	Tularemia
<b>Incubation period</b>	12 hours - 5 days	generally 12-72 hours	12 hours - 5 days	1-14 days	1-6 days	2-3 weeks	10-14 days	1-14 days. Following a terrorist attack, cases would likely be reported in 3-5 days.
<b>Symptoms</b>	<p>Cutaneous:</p> <ul style="list-style-type: none"> <li>Skin infections begin as itchy bumps resembling insect bites, then develop into lesions about half an inch to a little over an inch in diameter. Lesions become covered by black scabs.</li> <li>swollen lymph nodes</li> </ul> <p>Inhalation:</p> <ul style="list-style-type: none"> <li>fever, chills, headache, nausea, vomiting</li> <li>fluid in lungs, severe breathing difficulty</li> <li>shock and respiratory failure</li> </ul> <p>Gastrointestinal:</p> <ul style="list-style-type: none"> <li>nausea, loss of appetite, vomiting, fever</li> <li>abdominal pain, severe diarrhea, abdominal bleeding</li> </ul>	<ul style="list-style-type: none"> <li>nausea and vomiting (occurs in natural cases when bacteria are ingested; may not appear if purified toxin is spread on food)</li> <li>difficulty speaking, seeing, and/or swallowing</li> <li>drooping eyelids</li> <li>muscle weakness starting in the trunk and moving to the limbs</li> <li>muscle paralysis and difficulty breathing</li> </ul>	<ul style="list-style-type: none"> <li>severe diarrhea, vomiting, and weakness</li> <li>leg cramps</li> <li>rapid fluid loss that can lead to shock</li> </ul>	<p>General symptoms:</p> <ul style="list-style-type: none"> <li>fever and headaches</li> <li>muscle aches, muscle tightness, chest pain</li> </ul> <p>Other symptoms vary according to how the organism enters the body—through the skin, eyes, nose, or respiratory tract—but include:</p> <ul style="list-style-type: none"> <li>pustular lesions that develop 1-5 days after bacteria enter breaks in the skin</li> <li>swollen lymph nodes</li> <li>tearing of the eyes, light sensitivity</li> <li>increased mucus in the eyes, nose, and respiratory tract</li> <li>pneumonia</li> </ul>	<ul style="list-style-type: none"> <li>fever, chills, headache, weakness</li> <li>nausea, vomiting, and abdominal pain</li> <li>extreme lymph node pain (bubonic)</li> <li>chest pain, cough, bloody or watery sputum (pneumonic)</li> <li>septic shock</li> </ul>	<ul style="list-style-type: none"> <li>high fever, chills, and throbbing headache</li> <li>profuse sweating</li> <li>visual and auditory hallucinations</li> <li>pneumonia</li> <li>hepatitis</li> </ul>	<ul style="list-style-type: none"> <li>high fever</li> <li>headache, backache, and vomiting</li> <li>rash (pox) on the face and arms that spreads to the trunk</li> </ul>	<p>Various forms of the disease all begin with the sudden onset of flu-like symptoms:</p> <ul style="list-style-type: none"> <li>fever, chills, headache, cough, and lethargy</li> </ul> <p>Additional symptoms depend on the form but include:</p> <ul style="list-style-type: none"> <li>swollen and sore lymph nodes</li> <li>skin ulcers</li> <li>red and sore eyes</li> <li>abdominal pain, diarrhea, and vomiting</li> <li>pneumonia</li> </ul>
<b>How it would be spread</b>	Letters with anthrax powder will cause only isolated cases of disease, relatively few in number. Poisoning of food is difficult to achieve with anthrax and is not considered likely. Aerosol spraying is the gravest threat. Anthrax diseases are not contagious.	Aerosol or food. The disease is not contagious.	Food or water. It is not contagious with proper hygiene.	Aerosol. Human-to-human transmission is possible, but the disease is not considered highly contagious.	Aerosol or person-to-person. Pneumonic plague is contagious through respiratory droplets.	Aerosol or food. Human-to-human transmission is rare.	Aerosol or person-to-person, potentially by a terrorist-“martyr.” It is highly contagious. However, smallpox victims show clear signs of the disease, and anyone who came in contact with them could be vaccinated post-exposure.	Aerosol or food. Human-to-human transmission has not been documented.
<b>Treatment</b>	A variety of antibiotics can treat all three forms of the disease. Inhalation anthrax, however, progresses so quickly that, once symptoms are clear, it may be too late for drugs to prevent death.	An antitoxin, available in the U.S. from the Centers for Disease Control and Prevention, stops progression of the disease and can prevent onset of disease following exposure.	Rehydration is essential. A variety of antibiotics shorten the course of illness and reduce its severity.	A variety of antibiotics can be used. However, even when treated, the disease has had a high mortality rate (roughly 50%) in the few documented cases of human glanders. Treatment protocols are not well understood because the disease is so rare.	A variety of antibiotics can treat the disease but must be given soon after symptoms appear. Antibiotics given immediately after exposure may prevent disease onset.	Even untreated, most people with Q fever will recover. Treatment with a variety of antibiotics shortens illness and results in fewer complications.	There is no current treatment against the smallpox virus. Vaccination given 3-5 days post-exposure can prevent the disease.	Early antibiotic therapy is effective, and if started within 24 hours of exposure, may prevent disease. A variety of antibiotics can be used, although some antibiotics may be powerless against strains genetically engineered to be resistant.
<b>Vaccine</b>	The vaccine for anthrax used by the U.S. military is not currently available to the general public. It is given in a series of six shots over 18 months. Annual booster injections are recommended.	No vaccine is available for the general public. An investigational vaccine is available for the military and lab workers.	The manufacture of the only licensed cholera vaccine in the U.S. has been discontinued. It was generally not recommended because it protects only roughly half of those vaccinated, and immunity is short-term (3-6 months). Two newly developed vaccines are available in other countries.	No vaccine is available.	No vaccine is available to the general public. A vaccine to prevent bubonic plague was licensed in the U.S. but discontinued by its manufacturers in 1999. Even if this vaccine becomes available, it does not prevent the pneumonic form of plague.	Avaccine exists but is not available to the general public.	Vaccine exists but is currently not recommended for the general public. Stockpiles of vaccine are being increased. No one in the U.S. has been vaccinated since 1972, and people vaccinated before then have likely lost immunity.	No vaccine is available for the general public. The U.S. Food and Drug Administration is investigating a vaccine that is now available for high-risk lab workers.