



# Smallpox

## What is smallpox?

Smallpox is caused by the variola virus. Except for laboratory stockpiles, the variola virus has been eliminated. Smallpox outbreaks have occurred from time to time for thousands of years, but the disease is now eradicated after a successful worldwide vaccination program. The last case of smallpox in the United States was in 1949. The last naturally occurring case in the world was in 1977. After the disease was eliminated from the world, routine vaccination against smallpox among the general public was stopped because it was no longer necessary for prevention.

## How soon after exposure do symptoms appear?

Symptoms usually appear in about 12 days, but can range from seven to 17 days.

## What are the symptoms of smallpox?

The first symptoms may include high fever, vomiting, fatigue, and backache. A raised spotted rash appears in two to three days, first in the mouth and throat, followed by a rash on the face and arms, which then spreads to the legs. The rash starts with flat red lesions; after one or two days the rash bumps become filled with fluid and later pus. Scabs form over blisters, which will later fall off, about three to four weeks after the person becomes infected.

## How is smallpox spread?

Smallpox is spread, most often, by an ill person releasing virus infected saliva droplets from their mouth into the air that are inhaled by a susceptible person in close contact with the ill person (face-to-face contact). Because virus titers in saliva are highest during the first week of illness, this is when people are the most infectious. Contact with smallpox scabs or contaminated clothing or linens can also spread the disease.

## What is the treatment for smallpox?

At this time, there is no proven treatment for smallpox. Patients with the illness would be given supportive care as needed and antibiotics for any secondary bacterial infections that occur. No antiviral medications have yet proved effective for treating smallpox.

## Can smallpox be used as a biological weapon?

Smallpox was eradicated from the world in 1977. In 1980, the World Health Assembly recommended that all countries cease vaccination and that all laboratories destroy their stocks of variola (smallpox) virus or transfer them to one of the World Health Organization reference labs.

The United States is not expecting a smallpox attack from terrorists. While there are concerns that smallpox virus could be held by terrorists, there are considerable technical and logistical barriers to the production and dissemination of smallpox virus as a weapon. Consequently, many experts believe the actual probability of using smallpox as a weapon for bioterrorism is quite low.

## What can be done to prevent smallpox?

If smallpox was diagnosed today, the same strategies that were used to control and eradicate this disease in the past would be used again. A smallpox outbreak would spread unless checked by vaccination and monitoring of contacts to smallpox patients and isolation of infectious smallpox patients. People with smallpox would avoid contact with unvaccinated individuals in order to prevent transmitting the disease to them. All individuals in whom smallpox is suspected would be placed under health monitoring.

Vaccine against smallpox is a live virus vaccine, made with a related virus called vaccinia virus. The United States currently has a limited supply of smallpox vaccine available for emergency use, if needed. Smallpox vaccine is very effective and can lessen the severity or even prevent illness in people exposed to smallpox if given up to four days after exposure.