

Smallpox Vaccine

What is the smallpox vaccine?

The smallpox vaccine is an immunization you can get to help protect you against infection by the smallpox virus.

Smallpox is caused by a virus called the variola virus. Smallpox is a very serious illness that can spread from person to person by coughing or sneezing. It causes high fever, fatigue, headache, backache, and a rash. The rash can cause severe, permanent scarring. Smallpox is fatal in about 1 of every 3 people who get the disease.

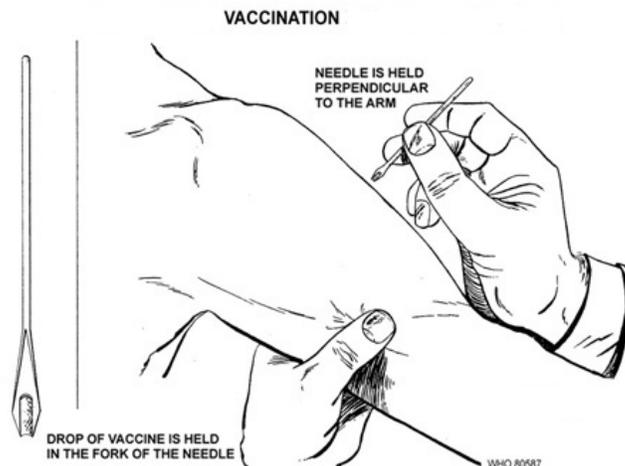
Routine smallpox vaccination among the American public stopped in 1972 when cases of smallpox were no longer reported in the US. After that, the US government provided the vaccine only to a few hundred scientists and medical professionals working with smallpox and similar viruses in a research setting.

In 2001 the US government decided to prepare for the possible intentional release of the smallpox virus by bioterrorists. Such a release of smallpox could start a deadly epidemic. The US government has ordered production of enough smallpox vaccine to immunize the American public in the event of a smallpox outbreak.

The smallpox vaccine is made from a virus called vaccinia. This virus is related to the smallpox virus. The vaccine contains live vaccinia virus. (Many other types of vaccines contain dead virus.) The vaccine does not contain the smallpox virus and cannot give you smallpox. However, the live virus in the vaccine may cause rash, fever, headache, and body aches. Rarely, it causes serious illness.

How is the vaccine given?

You will not get a shot. Instead, your health care provider will dip a two-pronged needle into the vaccine and prick your skin 15 times. The poking is not deep, but it will cause a slight amount of bleeding and a small sore spot on your skin. The vaccine usually is given in the upper arm.



A red, itchy bump will develop at the vaccine site in 3 or 4 days. In a week, the bump becomes a blister, fills with pus, and begins to drain. During the second week, the blister begins to dry up and a scab forms. The scab falls off in the third week, leaving a small scar. If you are being vaccinated for the first time, the area of your skin that shows a reaction may be larger than if you are being revaccinated.

The live vaccinia virus is present at the vaccination site for up to 3 weeks after you get the vaccine. During this time the virus can spread to other parts of the body or to other people by direct contact. To help protect yourself from side effects and to help prevent spreading the virus to others:

- ◆ Follow your health care provider's instructions for caring for the spot where you got the vaccine.
- ◆ Keep the vaccination site covered and try to avoid touching it.
- ◆ Wash your hands with soap and water before you have direct contact with others.

What are the side effects or risks of the vaccine?

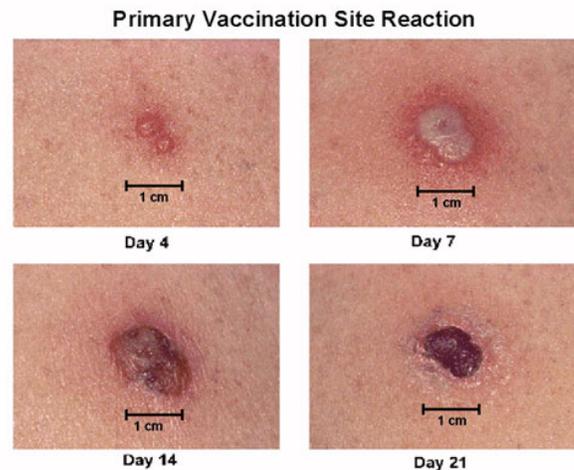
The vaccine does have some side effects and risks. **Mild reactions** you may have are:

- ◆ sore arm
- ◆ redness in the area where the vaccine was given
- ◆ large and sore glands in the armpits
- ◆ mild fever
- ◆ body aches.

These mild reactions usually go away without treatment.

In the past, about 1,000 people of every 1 million people vaccinated for the first time had reactions that were serious but not life-threatening. These reactions, which might need medical care, include:

A vaccinia rash or outbreak of sores limited to one area. This is an accidental spreading of the vaccinia virus caused by touching the vaccination site and then touching another part of the body or another person. It usually occurs on



the genitals or face, including the eyes, where it can damage sight or lead to blindness.

A **widespread** vaccinia rash. The virus spreads from the vaccination site through the blood. Sores break out on parts of the body away from the vaccination site (called generalized vaccinia).

A **toxic** or allergic rash in response to the vaccine that can take various forms (a problem called erythema multiforme).

You are more likely to have more serious side effects if:

- ◆ You have had skin conditions such as eczema or atopic dermatitis.
- ◆ You are pregnant.
- ◆ You are less than 18 years old.
- ◆ You are allergic to the vaccine.
- ◆ You have a weakened immune system; for example, if you have an organ transplant, are HIV positive, are receiving treatment for cancer, or are taking steroid medicines.

Medical experts are exploring the possibility that the smallpox vaccine might cause inflammation of the heart or the membrane covering the heart. The Centers for Disease Control (CDC) recommends that anyone who has received the smallpox vaccine should see a health care provider right away if they develop chest pain, shortness of breath, or other symptoms of cardiac disease after vaccination.

Who should not get the smallpox vaccine?

Between 14 and 52 people of every 1 million people vaccinated for the first time have experienced potentially life-threatening reactions to the vaccine. Based on past experience, it is estimated that 1 or 2 people in 1 million who receive the vaccine may die as a result. This is why health care providers carefully screen people before they are given the smallpox vaccine to ensure that those at high risk do not receive the vaccine.

You should not get the vaccine if:

- ◆ You are pregnant or breast-feeding. (It might harm the baby.)
- ◆ You are younger than 18 years of age (unless it is an emergency, such as a smallpox epidemic or attack of bioterrorism).

-
-
- ◆ You are allergic to the vaccine or any of its components.
 - ◆ You have a weakened immune system.
 - ◆ You have heart disease.

What are the benefits of the vaccine?

If you are exposed to the smallpox virus and get vaccinated within 3 days of the exposure, the vaccination usually prevents or reduces the symptoms of smallpox. Vaccination 4 to 7 days after exposure offers some protection from the disease or makes it less severe.

There is no cure for smallpox. Supportive care (IV fluids and antibiotics to prevent bacterial infections that can occur with smallpox) can help but will not cure the disease. The smallpox vaccine is the best protection you can get if you are exposed to the smallpox virus.

Developed by McKesson Health Solutions LLC, including material from the Centers for Disease Control.

This content is reviewed periodically and is subject to change as new health information becomes available. The information is intended to inform and educate and is not a replacement for medical evaluation, advice, diagnosis or treatment by a healthcare professional.