



South Central Public Health District

Prevent. Promote. Protect.

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SMALLPOX VACCINE INFORMATION

How safe is the smallpox vaccine?

We are very conscious of both the benefits and risks associated with smallpox vaccine, however the smallpox vaccine is considered safe. Some people with pre-existing conditions such as pregnancy, eczema, immune system disorders, or those taking immune suppressing medication like steroids have a higher risk for having complications from the vaccine. Vaccine is the best way to control smallpox, but not the only protection - for example, infection control measures, isolation, and quarantine would be used to fight the spread of disease.

Can people get smallpox from the vaccine?

No. The vaccine is made from live vaccinia virus, a milder relative of the smallpox virus. It does not contain the smallpox virus and cannot give people smallpox.

This is a “live virus” vaccine, meaning that the vaccinia virus is live in the vaccine and, once administered, live at the inoculation site. Therefore, it is very important to follow care instructions for the site that will be given to you at the time you are vaccinated to prevent vaccinia virus from spreading to other parts of the body, or to other people.

What are the risks associated with the vaccine?

Most people experience normal, usually mild reactions to the vaccine like a sore arm, fever, or body aches. About 1,000 out of every 1 million people vaccinated are expected to need medical attention for vaccine side effects. Fifteen people per 1 million will get seriously ill after first-time vaccinations. One or two people out of every 1 million vaccinated may die as a result of life-threatening reactions.

Is there any way to treat bad reactions to the vaccine?

Two treatments are available that may help people who have certain serious reactions to the smallpox vaccine. These are Vaccinia Immune Globulin, or VIG, and Cidofovir, which is an antibiotic.

What is vaccinia?

The vaccinia virus, the virus in the smallpox vaccine, is another "pox"-type virus. It is related to smallpox, but milder. The vaccinia virus may cause rash, fever, and head and body aches. In certain groups of people, complications from the vaccinia virus can be severe. Vaccinia is spread by touching a vaccination site before it has healed or by touching bandages or clothing that have been contaminated with live virus from the smallpox vaccination site. Special care must be taken of the site of the vaccine to prevent spreading the vaccinia virus to other people or other parts of the body.

How does the vaccine work?

The smallpox vaccine is not given with a hypodermic needle. It is not a “shot” like many vaccinations. The vaccine is given using a two-pronged needle that is dipped into the vaccine solution. The needle is pricked into the skin, usually on the upper arm, 15 times in a few seconds. If a person is being vaccinated for the first time in their lives, only 2 or 3 needle punctures are necessary. People being revaccinated must be pricked 15 times.

If the vaccination is successful, a red and itchy bump develops at the vaccine site in three to four days following vaccination. In the first week, the bump becomes a large 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. The vaccine provides full immunity for three to five years and decreasing immunity thereafter.

Are diluted doses of smallpox vaccine as effective?

Recent tests have indicated that diluted or watered-down smallpox vaccine is just as effective in providing immunity as full-strength vaccine.

If people were vaccinated as children, do they still have immunity to smallpox?

Not necessarily. Routine vaccination against smallpox ended in 1972. Most Americans under the age of 30 have not been vaccinated against smallpox. Most estimates suggest immunity from the vaccination lasts 3 to 5 years. Immunity can be boosted effectively with a single revaccination. Prior infection with the disease grants lifelong immunity.

Who should NOT be vaccinated?

There are two scenarios under which to answer this question:

- One is if there is no known case of smallpox (pre-exposure).
- The second is if there is exposure to the disease (post-exposure).

Many people are excluded from vaccination during pre-exposure, but in the event of exposure to the disease, all contacts are recommended to be vaccinated.

People who should not receive the vaccine unless they are exposed to smallpox include:

- People who have, or *even once* had, a skin condition (especially eczema or dermatitis).
- People with skin conditions such as burns, chickenpox, shingles, impetigo, herpes, severe acne, or psoriasis. (People with any of these conditions should not get the vaccine until they have completely healed.)
- People with weakened immune systems, such as those who have received a transplant, are HIV-positive, or are receiving treatment for cancer.
- Pregnant women, because of the risk it poses to the fetus, and women who are breastfeeding.
- Anyone who is allergic to the vaccine or any of its components.
- Anyone under the age of 18.

Anyone who falls within these categories, or lives with someone who falls into one of these categories, should **NOT** get the smallpox vaccine *unless they are exposed to the disease*. Careful screening of potential vaccine recipients and management of their inoculation site will help to minimize the number of adverse reactions.

When will the vaccine be available to the public?

The vaccine is currently NOT available to the general public. The Bush administration has announced that it expects licensed vaccine will be available to the general public in 2004.