

**INTERIM SMALLPOX FACT SHEET****SMALLPOX VACCINE AND HEART PROBLEMS**

Careful monitoring of smallpox vaccinations given over recent months has suggested that the vaccine may cause heart inflammation (myocarditis), inflammation of the membrane covering the heart (pericarditis), and/or a combination of these two problems (myopericarditis). Experts are exploring this more in depth.

Heart pain (angina) and heart attack also have been reported following smallpox vaccination. However, it is not known at this time if smallpox vaccination caused these problems or if they occurred by chance alone (heart problems are very common). Experts are investigating this question also.

Reported events are not necessarily caused by the vaccine, and some or all of these events might be coincidental.

As a precautionary step, if you have been diagnosed by a doctor as having a heart condition with or without symptoms you should NOT get the smallpox vaccine at this time while experts continue their investigations. These include conditions such as:

- **known coronary disease including:**
 - **previous myocardial infarction (heart attack)**
 - **angina (chest pain caused by lack of blood flow to the heart)**
- **congestive heart failure**
- **cardiomyopathy (heart muscle becomes inflamed and doesn't work as well as it should)**
- **stroke or transient ischemic attack (a "mini-stroke" that produces stroke-like symptoms but no lasting damage)**
- **chest pain or shortness of breath with activity (such as walking up stairs)**
- **other heart conditions under the care of a doctor**

In addition, you should NOT get the smallpox vaccine if you have 3 or more of the following risk factors:

- **You have been told by a doctor that you have high blood pressure.**
- **You have been told by a doctor that you have high blood cholesterol.**
- **You have been told by a doctor that you have diabetes or high blood sugar.**
- **You have a first degree relative (for example mother, father, brother, or sister) who had a heart condition before the age of 50.**

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- **You smoke cigarettes now.**

These may be temporary exclusions and may change as more information is gathered.

The presence of these conditions in a close contact is not a reason for you to defer vaccination.

If you have received the smallpox vaccine, you should see a health care provider right away if you develop chest pain, shortness of breath, or other symptoms of cardiac disease after vaccination.

If you have been diagnosed by a doctor as having heart disease and you have already received the smallpox vaccine, you should contact your heart disease specialist or your regular health care provider if you have questions.

What has been reported?

- **Past Experience:** Rare cases of heart inflammation following smallpox vaccination were reported in the 1960s and 1970s. Most of these did not occur in the United States and involved a different smallpox vaccine than is being used in the U.S. now.
- **Civilian Vaccinations:** From January 24, 2003 thru June 30, 2004, approximately 39,566 civilians received the smallpox vaccine, thirty four reported heart problems. These included problems like myo/pericarditis (heart inflammation) 21 cases, angina (chest pain caused by lack of blood flow to the heart) and heart attack, 10 cases and dilated cardiomyopathies (heart muscle weakened and cannot pump blood efficiently) 3 cases. Two people who had heart attacks died. It is not known at this time if smallpox vaccination caused these events.
- **Military Vaccinations:** Between December 16, 2002 and August 25, 2004, approximately 631,000 military personnel received the smallpox vaccine. Seventy-eight cases of heart inflammation (myocarditis or pericarditis) have been reported, mainly in the second week after vaccination, at a higher-than-expected rate among men and among people receiving smallpox vaccine for the first time. These cases have been followed carefully to evaluate their recovery, at 28 hospitals in 21 States and several countries overseas. Detailed follow-up cardiac testing is available in 46 cases: all 46 had normal electrocardiograms (ECGs), normal echocardiograms ("echos"), and normal treadmill stress test results, suggesting a high rate of recovery. [See Journal of American College of Cardiology. 2004 (Jul 7);44(1):201-5.] Another 16 cases of "ischemic" heart disease (such as heart attacks, atherosclerosis, or angina) occurred within 6 weeks after smallpox vaccination. This number of cases is similar to what normally occurs among unvaccinated military personnel of similar age.

For more information, visit www.cdc.gov/smallpox, or call CDC at 800-CDC-INFO (English and Spanish) or 888-232-6348 (TTY).