

Testing for Tuberculosis

When your body is functioning normally, it often reacts strongly to disease-causing germs, such as bacteria and viruses. After the initial contact, the immune system often “remembers” the characteristics of the germ so that it can respond more quickly the next time it encounters that same type of germ.

Sometimes it is possible to test for this “memory” of a disease causing germ, which can help to determine if someone has been exposed to the germ and if his or her body has had an

immune response to it. An article in the April 19, 2000, issue of *JAMA* reports on the effectiveness of methods that test for the immune “memory” response to exposure to bacteria that cause **tuberculosis (TB)**.

WHO IS AT RISK?

Pulmonary TB (TB in the lungs) is a contagious disease that is usually spread through the coughing and sneezing of an infected person; transmission of the infection usually occurs only after prolonged exposure. The following groups of people could be at risk for acquiring TB:

- People who live with anyone experiencing the active stage of the disease
- People who have emigrated from countries where TB is relatively common
- People with weakened immune systems (such as people with AIDS or cancer) who have been exposed to the bacteria
- People who are very old and possibly not in the best of health who have been exposed to the bacteria
- People who live in community-living settings (such as mental institutions, jails, or prisons) and long-term care facilities (such as nursing homes)
- People who are malnourished (not receiving proper nutrition) such as people who are poor or homeless
- People who abuse alcohol and other drugs
- People who work as health care workers

It is important to be tested if you are at risk. If you test positive, your doctor may prescribe a preventive treatment to reduce the chances of experiencing the active disease.

TUBERCULIN TEST FOR TB:

The **tuberculin test** uses a purified protein (tuberculin) derived from *Mycobacterium tuberculosis* (the bacterium that causes tuberculosis) to test for previous exposure to this bacterium. The tuberculin is put into the skin by pricking the skin with a needle. The tuberculin cannot cause tuberculosis because tuberculin is merely a protein extract; none of the actual TB-causing bacteria are present.

A test may be considered “positive” if the skin reacts with a hard bump at the place that was pricked. Whether the reaction is considered positive depends on the size of the bump. The doctor will also consider other factors when deciding if the reaction is positive, such as having human immunodeficiency virus (HIV) infection, which can affect the level of reaction. The skin is usually examined 48 to 72 hours after being pricked with the needle containing tuberculin. If you test positive, your doctor may need to perform further tests, such as taking chest x-rays and testing your **sputum** (material coughed up from the lungs) for the presence of the bacteria.

TB STAGES:

A positive test means you may have been exposed to the bacteria and your body responded to the infection. It does not necessarily mean that you have the “active” stage of the disease. In fact, in the United States only about 10 percent of those who test positive for exposure to the bacteria go on to develop the active stage of the disease. People are more likely to experience the active stage of the disease if their immune systems are weakened (even if it has been many years since the initial exposure to the bacteria). A person in the active stage of TB can infect others with the bacteria.

FOR MORE INFORMATION:

- National Institute of Allergy and Infectious Diseases
Send postcard to:
NIAID Office of Communications and Public Liaison
31 Center Drive, MSC 2520
Bethesda, MD 20892-2520 or
www.niaid.nih.gov
- The American Lung Association
800/LUNG-USA or
www.lungusa.org

INFORM YOURSELF:

To find this and previous *JAMA* Patient Pages, check out the AMA's Web site at www.ama-assn.org/consumer.htm. Previous *JAMA* Patient Pages on tuberculosis were published on August 18, 1999, and November 18, 1998.

Additional Sources: National Institute of Allergy and Infectious Diseases, American Lung Association, The AMA Encyclopedia of Medicine, The AMA Family Medical Guide

Brian Pace, MA, Writer

Richard M. Glass, MD, Editor

Jeff Molter, Director of Science News

The JAMA Patient Page is a public service of JAMA and the AMA. The information and recommendations appearing on this page are appropriate in most instances, but they are not a substitute for medical diagnosis. For specific information concerning your personal medical condition, JAMA and the AMA suggest that you consult your physician. This page may be reproduced noncommercially by physicians and other health care professionals to share with patients. Any other reproduction is subject to AMA approval. To purchase bulk reprints, call 212/354-0050.

