



Testing for Tuberculosis (TB)

Tuberculosis (TB) is a disease that is spread through the air from one person to another. When someone with TB disease coughs, speaks, laughs, sings, or sneezes, people nearby may breathe TB bacteria into their lungs. TB usually attacks the lungs, but can also attack other parts of the body, such as the brain, spine or kidneys.

There are two types of TB:

1. TB infection
2. TB disease

TB bacteria can live in the body without making a person sick. This is called **TB infection**. People with TB infection do not feel sick, do not have TB symptoms, and cannot spread TB bacteria to others. Some people with TB infection go on to develop **TB disease**. People with TB disease can spread the bacteria to others, feel sick, and can have symptoms including fever, night sweats, coughing and weight loss.

There are two kinds of tests that are used to determine if a person has been infected with TB bacteria: the tuberculin skin test and Interferon Gamma Release Assay (IGRA).

Tuberculin Skin Test (TST)

Of the two test available, the TST is older, least specific, and less preferred.

What is a TST?

The Mantoux tuberculin skin test is a test to check if a person has been infected with TB bacteria.

How does the TST work?

Using a small needle, a health care provider injects a liquid (called tuberculin) into the skin of the lower part of the arm. When injected, a small, pale bump will appear. This is different from a Bacille Calmette-Guerin (BCG) shot (a TB vaccine that many people living outside of the United States receive).

The person given the TST must return within two or three days to have a trained health care worker look for a reaction on the arm where the liquid was injected. The health care worker will look for a raised, hard area or swelling, and if present, measure its size using a ruler. Redness by itself is not considered part of the reaction.

What does a positive TST result mean?

The TST result depends on the size of the raised, hard area or swelling. It also depends on the person's risk of being infected with TB bacteria and the progression to TB disease if infected.

- **Positive TST:** This means the person's body may have been infected with a mycobacteria. Additional tests are needed to determine if the person has TB infection or TB disease. A health care worker will recommend further testing or treatment.
- **Negative TST:** This means the person's body did not react to the test, and that TB infection or TB disease is not likely.

Who can receive a TST?

Almost everyone can receive a TST, including infants, children, pregnant women, people living with HIV, and people who have had a BCG shot. People who had a severe reaction to a previous TST should not receive another TST.

How often can a TST be given?

Usually, there is no problem with repeated TSTs unless a person has had a severe reaction to a previous TST.

Testing for TB in People with a BCG

The IGRA is the preferred test for people who have had a BCG shot. BCG does not cause a false reaction in an IGRA as it can with a TST. People who have had a previous BCG shot may receive a TST. In some people, the BCG shot may cause a positive TST when they are not infected with TB bacteria. If a TST is positive, additional tests are needed.



TB Blood Tests

What is an Interferon Gamma Release Assay (IGRA)?

An IGRA is a blood test that can determine if a person has been infected with TB bacteria. An IGRA measures how strong a person's immune system reacts to TB bacteria by testing the person's blood in a laboratory.

Two IGRAs are approved by the U.S. Food and Drug Administration (FDA) and are available in the United States:

- 1) QuantiFERON®-TB Gold In-Tube test (QFT-GIT)
- 2) T-SPOT®TB test (T-Spot)

How does the IGRA work?

Blood is collected into special tubes using a needle. The blood is delivered to a laboratory as directed by the IGRA test instructions. The laboratory runs the test and reports the results to the health care provider.

What does a positive IGRA result mean?

- **Positive IGRA:** This means that the person has been infected with TB bacteria. Additional tests are needed to determine if the person has TB infection or TB disease. A health care worker will then provide treatment as needed.
- **Negative IGRA:** This means that the person's blood did not react to the test and that TB infection or TB disease is not likely.

Who can receive an IGRA?

Anyone can have an IGRA in place of a TST. This can be for any situation where a TST is recommended. In general, a person should have either a TST or an IGRA. There are times when results from both tests may be useful in deciding whether a person has been infected with TB.

IGRAs are the preferred method of TB infection testing especially for the following:

- People who have received the BCG shot
- People who have a difficult time returning for a second appointment to look at the TST after the test was given
- People who have been exposed to TB disease

How often can an IGRA be given?

There is no problem with repeated IGRAs.

Who Should Get Tested for TB?

TB tests are generally not needed for people with a low risk of infection with TB bacteria.

Certain people should be tested for TB bacteria because they are more likely to get TB disease, including:

- People who have spent time with someone who has TB disease
- People with HIV infection or another medical problem that weakens the immune system
- People who have symptoms of TB disease (fever, night sweats, cough and weight loss)
- People from a country where TB disease is common (most countries in Latin America, the Caribbean, Africa, Asia, Eastern Europe and Russia)
- People who live or work somewhere in the United States where TB disease is more common (homeless shelters, prison or jails or some nursing homes)
- People who use illegal drugs
- People prescribed TNF inhibitors prior to starting therapy
- People with a chronic disease such as diabetes

Choosing a TB Test

Choosing which TB test to use should be done by the person's health care provider. Factors in selecting which test to use include the reason for testing, test availability, and cost.

Diagnosis of TB Infection or TB Disease

If a person is found to be infected with TB bacteria, other tests are needed to see whether the person has TB disease.

TB disease can be diagnosed by medical history, physical examination, chest X-ray, and other laboratory tests. TB disease is treated by taking several drugs as recommended by a health care provider.

If a person does not have TB disease, but has TB bacteria in the body, then TB infection is diagnosed. The decision about taking treatment for TB infection will be based on a person's chances of developing TB disease.

Related Links

CDC Tuberculosis (TB): <http://www.cdc.gov/tb>
Basic TB Information: <http://www.cdc.gov/tb/publications/factsheets/general/tb.htm>
Mississippi State Department of Health
www.HealthyMS.com