

Testing for Tuberculosis (TB)

Tuberculosis (TB) is a disease that is spread through the air from one person to another. When someone who is sick with TB 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. Latent TB infection
2. TB disease

TB bacteria can live in the body without making a person sick. This is called **latent TB infection**. People with latent TB infection do not feel sick, do not have TB symptoms, and cannot spread TB bacteria to others. Some people with latent 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, cough, 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 TB blood tests.

Tuberculin Skin Test (TST)

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 2 or 3 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.

TB bacteria can live in the body without making a person sick. This is called **latent TB infection**.

People with latent TB infection do not feel sick, do not have TB symptoms, and cannot spread TB bacteria to others.

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 was infected with TB bacteria. Additional tests are needed to determine if the person has latent TB infection or TB disease. A health care worker will then provide treatment as needed.
- Negative TST: This means the person's body did not react to the test, and that latent 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

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.



National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
Division of Tuberculosis Elimination

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 latent 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 latent 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, but not both. There are rare exceptions 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 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

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

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. Generally, it is not recommended to test a person with both a TST and an IGRA.

Diagnosis of Latent TB Infection or TB Disease

If a person is found to be infected with TB bacteria, other tests are needed to see if 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 latent TB infection is diagnosed. The decision about taking treatment for latent 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>

Tuberculosis (TB) Facts

TB Can Be Treated

What is TB?

"TB" is short for a disease called tuberculosis. TB is spread through the air from one person to another. TB germs are passed through the air when someone who is sick with **TB disease** of the lungs or throat coughs, speaks, laughs, sings, or sneezes. Anyone near the sick person with **TB disease** can breathe TB germs into their lungs.

TB germs can live in your body without making you sick. This is called **latent TB infection**. This means you have only inactive (sleeping) TB germs in your body. The inactive germs cannot be passed on to anyone else. However, if these germs wake up or become active in your body and multiply, you will get sick with **TB disease**.

When TB germs are active (multiplying in your body), this is called **TB disease**. These germs usually attack the lungs. They can also attack other parts of the body, such as, the kidneys, brain, or spine. **TB disease** will make you sick. People with **TB disease** may spread the germs to people they spend time with every day.

If the **TB disease** is in your lungs, you may:

- cough a lot,
- cough up mucus or phlegm ("flem"),
- cough up blood, or
- have chest pain when you cough.

You should **ALWAYS COVER YOUR MOUTH** when you cough!

If you have **TB disease**, you may also:

- feel weak,
- lose your appetite,
- lose weight,
- have a fever, or
- sweat a lot at night.

These are symptoms of **TB disease**. These symptoms may last for several weeks. Without treatment, they usually get worse.

If you get **TB disease** in another part of the body, the symptoms will be different. Only a doctor can tell you if you have **TB disease**.



TB Facts: TB Can Be Treated

How do I know if I have latent TB infection or TB disease?

If you have been around someone who has **TB disease**, you should go to your doctor or your local health department for tests.

There are two tests that can be used to help detect latent **TB infection**: a TB skin test or a TB blood test. The skin test is used most often. A small needle is used to put some testing material, called tuberculin, under the skin. In 2-3 days, you return to the health care worker who will check to see if there is a reaction to the test. In some cases, a TB blood test is used to test for **TB infection**. This blood test measures how a person's immune system reacts to the germs that cause TB.

Other tests are needed to show if you have **TB disease**. An x-ray of your chest can tell if there is damage to your lungs from TB. **TB disease** may be deep inside your lungs. Phlegm ("flem") you cough up will be tested in a laboratory to see if the TB germs are in your lungs.

If **TB disease** is in your lungs or throat, you can give TB germs to your family and friends. They can get sick with **TB disease**. You may have to be separated from other people until you can't spread TB germs. This probably won't be for very long, if you take your medicine as your health care provider instructs.

Can TB be treated?

If you have **TB infection**, you may need medicine to prevent getting **TB disease** later. This is called "preventive" treatment.

TB disease can also be treated by taking medicine. If you have **TB disease**, it is very important that you finish the medicine, and take the drugs exactly as you are told. If you stop taking the drugs too soon, you can become sick again. If you do not take the drugs correctly, the germs that are still alive may become difficult to treat with those drugs. It takes at least six months and possibly as long as one year to kill all the TB germs.

It is very important that you take your medicine as your doctor recommends.



Protect your family and friends from TB — take ALL your TB drugs!

