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Tuberculosis

What is Tuberculosis (TB)?

Tuberculosis (TB) is a disease caused by bacteria called *Mycobacterium tuberculosis*. The bacteria usually attack the lungs. But, TB bacteria can attack any part of the body such as the kidney, spine, and brain. If not treated properly, TB disease can be fatal.

TB is spread through the air from one person to another. The bacteria are put into the air when a person with active TB disease of the lungs or throat coughs or sneezes. People nearby may breathe in these bacteria and become infected.

However, not everyone infected with TB bacteria becomes sick.

People who are not sick have what is called latent TB infection. People who have latent TB infection do not feel sick, do not have any symptoms, and cannot spread TB to others. But, some people with latent TB infection go on to get TB disease.

People with active TB disease can be treated and cured if they seek medical help. Even better, people with latent TB infection can take medicine so that they will not develop active TB disease.

How is TB spread?

TB is spread through the air from one person to another. The bacteria are put into the air when a person with active TB disease of the lungs or throat coughs or sneezes. People nearby may breathe in these bacteria and become infected.

When a person breathes in TB bacteria, the bacteria can settle in the lungs and begin to grow. From there, they can move through the blood to other parts of the body, such as the kidney, spine, and brain.

TB in the lungs or throat can be infectious. This means that the bacteria can be spread to other people. TB in other parts of the body, such as the kidney or spine, is usually not infectious.

People with active TB disease are most likely to spread it to people they spend time with every day. This includes family members, friends, and coworkers.

What is latent TB infection?

In most people who breathe in TB bacteria and become infected, the body is able to fight the bacteria to stop them from growing. The bacteria become inactive, but they remain alive in the body and can become active later. This is called latent TB infection. People with latent TB infection

- have no symptoms
- don't feel sick
- can't spread TB to others
- usually have a positive skin test reaction
- can develop active TB disease if they do not receive treatment for latent TB infection

Many people who have latent TB infection never develop active TB disease. In these people, the TB bacteria remain inactive for a lifetime without causing disease. But in other people, especially people

who have weak immune systems, the bacteria become active and cause TB disease.

What is active TB disease?

TB bacteria become active if the immune system can't stop them from growing. The active bacteria begin to multiply in the body and cause active TB disease. The bacteria attack the body and destroy tissue. If this occurs in the lungs, the bacteria can actually create a hole in the lung. Some people develop active TB disease soon after becoming infected, before their immune system can fight the TB bacteria. Other people may get sick later, when their immune system becomes weak for another reason.

Babies and young children often have weak immune systems. People infected with HIV, the virus that causes AIDS, have very weak immune systems. Other people can have weak immune systems, too, especially people with any of these conditions:

- substance abuse
- diabetes mellitus
- silicosis
- cancer of the head or neck
- leukemia or Hodgkin's disease
- severe kidney disease
- low body weight
- certain medical treatments (such as corticosteroid treatment or organ transplants)
- specialized treatment for rheumatoid arthritis or Crohn's disease

Symptoms of TB depend on where in the body the TB bacteria are growing. TB bacteria usually grow in the lungs. TB in the lungs may cause symptoms such as

- a bad cough that lasts 3 weeks or longer
- pain in the chest
- coughing up blood or sputum (phlegm from deep inside the lungs)

Other symptoms of active TB disease are

- weakness or fatigue
- weight loss
- no appetite
- chills
- fever
- sweating at night

The TB skin test

The TB skin test may be used to find out if you have TB infection. You can get a skin test at any pathology laboratory. A technician will inject a small amount of testing fluid (called tuberculin or PPD) just under the skin on the under side of the forearm. After 48 hours, you must return to have your skin test read by the laboratory technician. You may have a swelling where the tuberculin was injected. The technician will measure this swelling and tell you if your reaction to the test is positive or negative. A positive reaction usually means that you have been infected by someone with active TB disease.

If you have recently spent time with and been exposed to someone with active TB disease, your TB skin test reaction may not be positive yet. You may need a second skin test 8 to 10 weeks after the last time you spent time with the person. This is because it can take several weeks after infection for your immune system to react to the TB skin test. If your reaction to the second test is negative, you probably do not have latent TB infection.

QuantiFERON®-TB Gold

QuantiFERON®-TB Gold (QFT) is a blood test used to find out if you are infected with TB bacteria.

The QFT measures the response to TB proteins when they are mixed with a small amount of blood. Currently, few labs offer the QFT. If your laboratory does offer the QFT, only one visit is required, at which time your blood is drawn for the test.

What if I have a positive test for TB?

If you have a positive reaction to the TB skin test or the QFT, your doctor may do other tests to see if you have active TB disease. These tests usually include a chest x-ray and a test of the phlegm you cough up. Because the TB bacteria may be found somewhere other than your lungs, your doctor may check your blood or urine, or do other tests. If you have active TB disease, you will need to take medicine to cure the disease.

Tuberculosis (TB) Profile

Complete Blood Count

ESR

Adenosine Deaminase

Mantoux Test

Chest X Ray

Sputum AFB