



Health Concerns

Tuberculosis (TB)

What is tuberculosis (TB)?

Tuberculosis (TB) is an infection caused by the bacterium *Mycobacterium tuberculosis*. TB most commonly occurs in the lungs but can sometimes also affect other organs, including the skin, bones, lymph nodes, liver, digestive tract and central nervous system (brain and spinal cord).

How is TB spread?

TB is spread from person to person through close personal contact. When someone with active TB of the lung coughs, shouts, sneezes or talks, a person in the same room may breathe in small droplets containing the bacteria. These are carried deep into the lung, where infection begins.

Who is at risk for TB?

People become infected with *M. tuberculosis* when they are exposed to someone with active TB in their lungs. Examples of living conditions that increase the risk of exposure to TB include overcrowded housing, homeless shelters and correctional facilities. Other examples of people at increased risk of exposure to TB include those with a history of alcohol or drug use, and people from different parts of the world where TB is quite common, including many countries in the Caribbean, Africa and Asia.

What are the stages of TB?

Infection by the TB-causing bacteria starts in the lungs. A normal, healthy immune system can usually contain or limit the infection. When this occurs, TB is said to be **latent** or **inactive**. Latent TB may not progress further unless the immune system weakens. In latent TB, the only sign of infection may be a positive skin test (see “How can I test for TB?” next section). People with latent TB cannot spread infection to others.

If a person’s immune system is weakened, it may not be able to keep latent TB infection under control. When this happens, symptoms of **active** TB appear. These can include fever, chills, night sweats, weight loss, coughing up phlegm or blood, and shortness of breath. If TB infection spreads through the blood to other organs and tissues, a person may experience other symptoms, depending on which parts of the body are affected. People with active TB can spread infection to others.

How can I test for TB?

To find out if you have been infected with TB, your doctor or nurse will perform a skin test called PPD. This is done by injecting a small amount of a solution under your skin. The solution contains proteins similar to those made by the TB bacteria. You will need to return between 48 and 72 hours later to check the test result.

If you have been infected by the TB bacteria in the past and your immune system is working well, you will have cells that react to the proteins in the test solution. In this case, the injection site will become red and swollen. This is called a positive PPD, or positive TB skin test.



What does a positive PPD or TB skin test mean?

A positive skin test result indicates that you have been infected by the TB bacteria sometime in the past. This does not necessarily mean that you now have active TB or are infectious to others. If you have a positive skin test or other signs of TB, your doctor will likely request a chest X-ray, sputum (phlegm) samples and other tests, depending on your symptoms and signs.

The PPD skin test may not be reliable in people with advanced HIV disease because their immune systems may be too weak to respond to the TB bacteria.

How is TB treated?

Latent TB infection is usually treated with the drug isoniazid (INH) and vitamin B6 for several months. This will prevent latent TB from developing into active TB. A shorter course of combination therapy is sometimes recommended as an alternative.

Active TB infection requires treatment with a combination of several antibiotics for at least six months. The drugs must be taken every day to cure the infection. Missing doses or taking the medications for a shorter period of time than needed will increase the risk of your medications not working. This happens because the TB bacteria can develop resistance to your antibiotics. If you have trouble taking your TB medications as prescribed, talk with your doctor, nurse or pharmacist right away.

How is TB related to HIV infection?

People infected with the TB bacteria who are also HIV positive are more likely to become ill compared to people without HIV. In addition, people with HIV/AIDS are at increased risk of developing TB infection in organs outside the lungs. This complication is called extrapulmonary TB.

If you have HIV, your doctor should do a TB skin test for you at least once a year. An HIV positive person who has latent (inactive) TB is at high risk of developing active infection, but the risk will be reduced by treatment with isoniazid (INH) and vitamin B6 for nine months.

If you are taking anti-HIV medications, this will affect your choices of drugs for TB treatment. For example, rifampin, a common antibiotic used to treat TB, cannot be used safely with most of the protease inhibitors or non-nukes (the NNRTIs). Talk with your doctor and pharmacist to discuss alternative options of medications that can be used.

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