

TUBERCULOSIS

(Mycobacterium Tuberculosis)



What is tuberculosis?

Tuberculosis (TB) is caused by a bacterium 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. Not everyone infected with TB bacteria becomes sick. As a result, two TB-related conditions exist: latent TB infection (LTBI) and TB disease. If not treated properly, TB disease can be fatal.

How do persons get infected with tuberculosis?

TB bacteria are spread through the air from one person to another. The TB bacteria are put into the air when a person with TB disease of the lungs or throat coughs, speaks, or sings. 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 disease 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 TB disease are most likely to spread it to people they spend time with every day. This includes family members, friends, and coworkers or schoolmates.

How can a tuberculosis infection be diagnosed?

There are two kinds of tests that are used to detect TB bacteria in the body: the TB skin test (TST) and TB blood tests. A positive TB skin test or TB blood test only tells that a person has been infected with TB bacteria. It does not tell whether the person has latent TB infection (LTBI) or has progressed to TB disease. Other tests, such as a chest x-ray and a sample of sputum, are needed to see whether the person has TB disease.

What type of illness does tuberculosis cause?

Symptoms of TB disease depend on where in the body the TB bacteria are growing. TB bacteria usually grow in the lungs (pulmonary TB). TB disease 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 TB disease are

- Weakness or fatigue
- Weight loss & no appetite
- Chills, fever
- Sweating at night

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

How common is tuberculosis infection?

Two billion people – one fourth of the world's population– are infected with the TB bacteria, with more than 10 million becoming ill with active TB disease each year. In 2019, 1.2 million children fell ill with TB globally and 465,000 people fell ill with drug-resistant TB. TB knows no borders.

What are some tips for preventing tuberculosis infections?

Many people who have latent TB infection never develop TB disease. But some people who have latent TB infection are more likely to develop TB disease than others. Those at high risk for developing TB disease include:

- People with HIV infection
- People who became infected with TB bacteria in the last 2 years
- Babies and young children
- People who inject illegal drugs
- People who are sick with other diseases that weaken the immune system
- Elderly people
- People who were not treated correctly for TB in the past

If you have latent TB infection and you are in one of these high-risk groups, you should take medicine to keep from developing TB disease. There are several treatment options for latent TB infection. You and your health care provider must decide which treatment is best for you. If you take your medicine as instructed, it can keep you from developing TB disease. Because there are less bacteria, treatment for latent TB infection is much easier than treatment for TB disease. A person with TB disease has a large amount of TB bacteria in the body. Several drugs are needed to treat TB disease.

Preventing Exposure to TB Disease While Traveling Abroad

In many countries, TB is much more common than in the United States. Travelers should avoid close contact or prolonged time with known TB patients in crowded, enclosed environments (for example, clinics, hospitals, prisons, or homeless shelters).

Although multidrug-resistant (MDR) and extensively drug-resistant (XDR) TB are occurring globally, they are still rare. HIV-infected travelers are at greatest risk if they come in contact with a person with MDR or XDR TB.

Air travel itself carries a relatively low risk of infection with TB of any kind. Travelers who will be working in clinics, hospitals, or other health care settings where TB patients are likely to be encountered should consult infection control or occupational health experts. They should ask about administrative and environmental procedures for preventing exposure to TB. Once those procedures are implemented, additional measures could include using personal respiratory protective devices.

Travelers who anticipate possible prolonged exposure to people with TB (for example, those who expect to come in contact routinely with clinic, hospital, prison, or homeless shelter populations) should have a TB skin test or a TB blood test before leaving the United States. If the test reaction is negative, they should have a repeat test 8 to 10 weeks after returning to the United States. Additionally, annual testing may be recommended for those who anticipate repeated or prolonged exposure or an extended stay over a period of years. Because people with HIV infection are more likely to have an impaired response to TB tests, travelers who are HIV positive should tell their physicians about their HIV infection status.

How is tuberculosis infection treated?

If you have an active TB disease you will probably be treated with a combination of antibacterial medications for a period of six to 12 months. The most common treatment for active TB is isoniazid INH in combination with three other drugs—rifampin, pyrazinamide and ethambutol.