

# 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.

## Where is Tuberculosis found?

Infection is possible anywhere, but tuberculosis is especially prevalent in **sub-Saharan Africa** and in Southeast Asia. The disease is more common in **Eastern Europe** than Western Europe, and Scandinavia has the lowest number of cases in the world.

## How do animals get infected with Tuberculosis?

Cattle and buffalo are the maintenance hosts for the bacteria. Infections have also been described in many other animals including sheep, goats, horses, pigs, deer, dogs, and cats. Bacteria are shed by infected animals in respiratory secretions, feces, milk, and, less commonly, other bodily fluids. Cattle are infected by inhaling droplets (aerosol) that contain the bacteria. Infection also occurs by ingestion (oral) if an animal swallows the bacteria.

## How do people 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.

TB is NOT spread by:

- shaking someone's hand
- sharing food or drink
- touching bed linens or toilet seats
- sharing toothbrushes
- kissing

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.

## What are the signs and symptoms of Tuberculosis?

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

Symptoms of TB disease in other parts of the body depend on the area affected.

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

### **How do you prevent transmission of Tuberculosis?**

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.

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.