



## Etiology of Tuberculosis and Other Mycobacterial Diseases

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### DESCRIPTION

Tuberculosis (TB) is a potentially serious infection that primarily affects the lungs. The bacteria that cause tuberculosis are spread from person to person through tiny droplets released into the air by coughs and sneezes.

Tuberculosis infections, once rare in developed countries, began to increase in 1985 with the advent of HIV, the virus that causes AIDS. HIV weakens a person's immune system and makes it unable to fight tuberculosis. In the United States, tuberculosis declined again in 1993 due to a stricter control program. But it is still cause for concern.

Many strains of tuberculosis are resistant to the drugs most commonly used to treat the disease. People with active tuberculosis need to take different types of drugs for months to clear the infection and prevent antibiotic resistance.

Human body can harbour the bacteria that cause tuberculosis, but the immune system usually prevents us from getting sick.

- Latent TB although infected with tuberculosis, the bacteria in the body are dormant and do not cause symptoms. Latent tuberculosis, also called inactive tuberculosis or tuberculosis infection, is not contagious. Treatment is important because latent tuberculosis can progress to active tuberculosis.
- Active TB also called TB disease; this condition makes us sick and, in most cases, can spread to others. It can occur weeks or years after infection with the TB bacteria.

Signs and symptoms of active TB include:

- Coughing for three or more weeks
- Coughing up blood or mucus
- Chest pain, or pain with breathing or coughing
- Unintentional weight loss
- Fatigue
- Fever
- Night sweats
- Chills
- Loss of appetite

Tuberculosis can also affect other parts of the body, such as the kidneys, spine, and brain. When tuberculosis begins outside the lungs, signs and symptoms depend on which organs are affected. For example, tuberculosis of the spine can cause back pain, and tuberculosis of the kidneys can cause hematuria.

Tuberculosis primarily affects adults at their most productive ages. But all age groups are at risk. More than 80% of her cases and deaths occur in low- and middle-income countries.

A person infected with HIV is 16 times more likely than she to develop active tuberculosis. The risk of active tuberculosis is also increased in people with other disorders that affect the immune system. Malnourished people are three times at risk. In 2021, there will be 2.2 million new tuberculosis cases worldwide due to malnutrition. Drinking alcohol and smoking increase the risk of tuberculosis.

Tuberculosis can be spread by an active tuberculosis patient releasing bacteria into the air through coughing, sneezing, talking, singing and even laughing. It is contagious only by people with active lung infections. Most people who breathe tuberculosis are able to fight it and stop it from multiplying. The bacteria go dormant in these individuals, causing latent tuberculosis infections.

Up to 13 million people in the United States have latent tuberculosis. Bacteria are dormant but can continue to live in the body and become active later. Some people have an underlying tuberculosis infection that is inactive for the rest of their life and never develops into tuberculosis.

However, tuberculosis can become active when the immune system is weakened and unable to stop the growth of bacteria. At this point, the latent tuberculosis infection becomes active tuberculosis. Many researchers are working on treatments to prevent this.

Tuberculosis is a treatable and curable disease. Drug-susceptible tuberculosis disease is treated with a standard 4 to 6 month regimen of four antibiotics provided to the patient by a healthcare provider or trained caregiver. Without such support, adherence to treatment becomes more difficult. Since 2000,

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tuberculosis diagnosis and treatment have saved an estimated 74 million lives.