

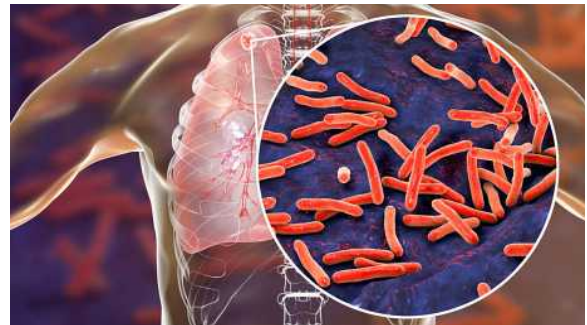
Tuberculosis

Overview

Tuberculosis (TB) is an infectious disease caused by a bacterium called *Mycobacterium tuberculosis*. This bacterium can affect almost any tissue or organ in the body, but most commonly the lungs.

Risk factors

When a person with TB coughs or sneezes, TB bacteria are released into the air. These bacteria can stay airborne for several hours. One may become infected after breathing in these bacteria.



TB usually spreads to household members and others who live or work closely with the affected person (e.g. friends, colleagues).

A person who has breathed in TB bacteria is at risk for infection. After infection, the bacteria may be initially inactive (causing latent TB infection) but can become active later and cause active TB disease.

Those with weakened immune systems from medications or underlying medical conditions such as diabetes, human immunodeficiency virus (HIV) infection, cancer, and chronic kidney disease, are at increased risk of developing active TB disease.

Signs & Symptoms

Latent TB infection is not easily detected without tests. A person with latent TB infection:

- Has no symptoms
- Cannot spread TB to others
- Is at risk of developing active TB disease (he or she can spread TB after developing active TB disease)

A person with **active TB disease** may have symptoms such as:

- Fever
- A cough that does not go away
- Coughing blood
- Night sweats
- Unexplained weight loss

Please see a doctor immediately if you display symptoms of active TB disease.

Investigation, test and procedures

Depending on the patient's condition, diagnostic tests might be required. The patient may also be referred to a specialist for further investigations.

Common tests for TB are:

- Chest X-ray
- Sputum test for growth of TB bacteria



Diagnosis and Treatment

Tuberculosis can be treated by completing a course of medications prescribed by the doctor for 6 to 9 months. Some patients may require a longer treatment duration depending on their type of TB disease and their response to the treatment.



It is important to complete the whole course of medications to ensure successful treatment of the disease and to prevent the development of antibiotic resistance. TB that is resistant requires treatment with more medications and for a longer duration and is much more difficult to treat successfully.

Most people diagnosed with TB need not be hospitalised for treatment.

Medications and Side Effects

How to take the medications: Refer to Table below

Precautions/Monitoring:

- Take the prescribed medications every day at about the same time during the required period for the best results. Do not stop medications unless directed by the doctor treating you for TB disease.
- Please inform any other doctors you see that you are on TB medications.



- For females: Oral contraceptives may not work while you are on TB medications. Use a combination of birth control methods to prevent unplanned pregnancy.
- Avoid alcohol consumption. Drinking alcohol while on TB medication can damage the liver.



Please seek immediate medical attention if you experience the following:

- Fever
- Unusual tiredness
- Persistent nausea, vomiting, or stomach pain
- Dark urine
- Yellowing of skin or eyes
- Easy bruising or bleeding
- Joint pain or swelling
- Rash, lip, throat or eye swelling, or difficulty in breathing



Complications

TB infection can cause permanent lung damage if it is not treated early. It can also spread to other parts of the body, such as the bone, intestines, brain and central nervous system, where it can lead to life-threatening complications. If not properly treated, TB bacteria may become resistant to multiple anti-TB medications.



TB Prevention in the Hospital

- If you are suspected of having or diagnosed with active TB in the lungs or throat, and require hospitalization, you will usually be nursed in a negative pressure isolation room with Airborne Precautions, until you are deemed to be no longer infectious. You must stay in the room as instructed.
- Healthcare workers who are caring for you will wear N95 masks and practice good hand hygiene.
- Visitors are discouraged. However, if necessary, a surgical mask will be offered to protect them, and they are advised to keep their visits short.



Preventing the Spread of TB at home

- Always cough and sneeze into a tissue, and throw the used tissues into a rubbish bin. Wash your hands with soap and water afterwards.
- Sleep in a bedroom away from other family members and avoid public areas until you have been told that you do not spread TB. (This includes areas such as buses, subways, and other closed spaces.)
- Take your medication as prescribed.
- Caregivers should wash their hands with soap and water after contact with the patient and/or their respiratory secretions.
- Your family or other close contacts may be contacted by TB Control Unit to be screened for TB infection.



TB Medications

	Rifampicin	Isoniazid	Pyrazinamide	Ethambutol	Pyridoxine
Purpose	Antibiotic	Antibiotic	Antibiotic	Antibiotic	Supplement indicated for prevention of nerve problems in patients taking isoniazid
How to Take	For better absorption, take the medication at least 30 minutes before food, on an empty stomach. However, if you experience stomach discomfort, you can take it after food.		This medication can be taken with or without food. However, if you experience stomach discomfort, you can take it after food.		This medication can be taken with or without food.
Side effects	Harmless orange-red discolouration of urine, stools, saliva, sweat, and tears	Tingling or numbness in hands and feet	Tiredness, mild pain in joints and muscles	Blurred vision or changes in colour vision	
	<ul style="list-style-type: none"> • Allergic reaction (e.g. rash, lip or throat swelling, eye swelling, difficulty breathing) which may be potentially life threatening. • Liver injury - Dark brown urine, light coloured stools (pale grey/ clay coloured), loss of appetite, yellowing of skin or eyes. • Stomach upset, diarrhoea, nausea, vomiting. 				

Medication	Available Preparations	
Rifampicin	<p>Rifampicin 300mg</p>  <p>Rifampicin 300mg (Rifasyn) Rifampicin 300mg (Royce) Rifampicin 300mg (R-Cin 300) Rifampicin 300mg (Rifaren 300mg)</p>	<p>Rifampicin 150mg</p>  <p>Rifampicin 150mg (Royce) Rifampicin 150mg (Rifaren 150mg)</p>
Isoniazid	<p>Isoniazid 100mg</p> 	<p>Isoniazid 300mg</p> 
Pyrazinamide	<p>Pyrazinamide 500mg</p> 	
Ethambutol	<p>Ethambutol 100mg</p> 	<p>Ethambutol 400mg</p> 
Pyridoxine	<p>Pyridoxine 50mg</p> 	<p>Pyridoxine 10mg</p> 

Source: 2023 Mediview

Contributed by Pharmacy and Department of Infectious Diseases

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