

Tuberculosis (TB)

Tuberculosis is a pandemic globally, and a significant health threat in our country. The Government of India has set a target of **Zero-Tuberculosis deaths by the year 2025**. In order to commit to that, the Ministry of Health and Family Welfare has launched the National Strategic Plan for TB Elimination in 2017.

This topic is important for issues related to Health and [Government Schemes](#) for Health. Students preparing for the [UPSC Exam](#) and other government exams can read this article to know more about Tuberculosis and its importance.

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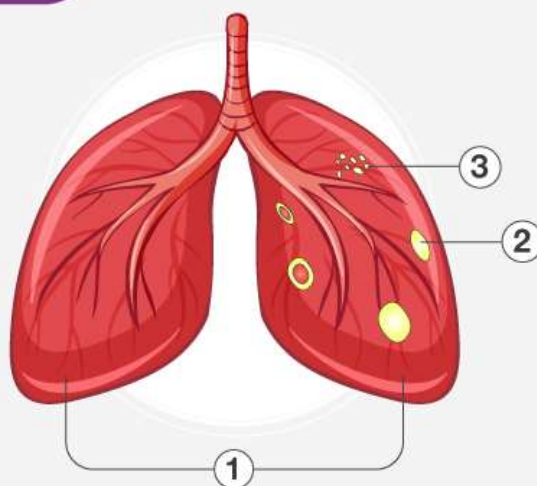
What is Tuberculosis (TB)?

Tuberculosis (TB) is generally defined as a dangerous bacterial infectious disease caused by *Mycobacterium tuberculosis*, which most often affects the lungs and later might spread to different parts of the body.

Types of Tuberculosis (TB)

- Pulmonary Tuberculosis.
- Extrapulmonary Tuberculosis.

TUBERCULOSIS



Tuberculosis is an infectious disease that usually affects the lungs. Compared with other diseases caused by a single infectious agent, tuberculosis is the second biggest killer, globally.

1 Lungs | 2 Lesion | 3 Fibrosis

Causes of Tuberculosis

- Tuberculosis is a contagious airborne disease, which can be acquired from close contact with an infected person.
- **Mycobacterium Tuberculosis** is one of the main causes of this dreadful infectious disease.
- Infants and aged people are at a greater risk of catching TB infections.

- Individuals with a weak immune system due to HIV, diabetes are quickly exposed to this infectious disease.
- Mycobacterium Tuberculosis is a pathogenic bacterial species and mainly comprises of four other types of TB-causing bacteria namely:

Mycobacterium Bovis	Mycobacterium Canetti
Mycobacterium Microti	Mycobacterium Africanum

Diagnosis of Tuberculosis

Apart from all the physical tests, there are other tests that are available to diagnose the presence of the infectious bacteria. These tests include certain body fluids test – blood and sputum, skin test and chest X-rays.

- **Blood Test:** In this procedure, blood samples are collected and are tested in the laboratories for the presence or absence of TB germs in the blood cells.
- **Skin Test:** It is the most common type of test. In this procedure, a small sample of Tuberculin – a purified protein is injected under the patient's skin. If the skin around the site of the injection gets swollen more than five millimetres then it is a clear indication of TB infection. This test is called the **Mantoux tuberculin skin test (TST)**.

Symptoms of Tuberculosis

TB bacteria or Mycobacterium tuberculosis most commonly grow in the lungs and can cause severe symptoms such as:

Coughing with blood	Bad cough for more than 3 weeks	Fatigue & weakness
Night sweats	Chest pain	Weight loss
Loss of appetite	Sudden and random c hills	Fever

Treatment for Tuberculosis

- Drug treatment is one of the most efficient ways to treat this infectious disease.
- For patients with Latent TB infections, doctors generally prescribe an antibiotic called isoniazid for preventing the latent infection from becoming active.
- Active TB Diseases will be deadly if it is left untreated.
 - The procedure involves taking a combination of ethambutol, INH, prifitin and pyrazinamide for a term of three months followed by a mix of INH and pyrazinamide for 12 months.

Drug Resistant TB

There is a global concern about the **Multi-Drug Resistant TB (MDR-TB)** which emerges in the host body due to lack of treatment drug; and the bacteria is not eradicated completely from the body due to interrupted course of antibiotic medicine.

- Since the bacteria are resistant to the first-line anti-TB drugs, the host is treated with second-line anti-TB drugs.

There exists an **Extensively Drug resistance TB (XDR-TB)** which is developed in the host body due to the high concentration of TB in an area making it very difficult to control. The XDR-TB bacteria strain is resistant to one or two medicines in the second-line antibiotic treatment.

Poor management at this state may lead to further mutation in bacteria leading to complete drug resistance known as **Total Drug Resistance TB (TD)**

Click the link to watch [Affordable Healthcare – RSTV: In-Depth](#)

India and Tuberculosis

- India stands at the top when it comes to TB, with more than 2 million cases reported in 2018.
- The Indian Government encourages new tools that will aid TB Research and Development (R&D) and discards the ones that won't benefit the system.
- The Government of India intends to come up with plans in collaboration with the Ministry of Science and Technology, Ministry of Health and other research-oriented pharmaceutical companies in order to reach targets of TB elimination in the country.
- Case-finding campaigns have been taken into consideration to avoid delay in the detection of TB.

Government Schemes for Tuberculosis

The Government of India has set a target of *Zero-Tuberculosis* deaths by the year 2025. In order to commit to that, the Ministry of Health and Family Welfare has formulated the **National Strategic Plan (NSP) for TB Elimination** in 2017. The National Strategic Plan will guide the development of the national project implementation plan (PIP) and state

ate PIPs, as well as district health action plans (**DHAP**) under the National Health Mission (**NHM**).

National Strategic Plan (NSP) for TB Elimination

It is a framework to guide all the activities of all stakeholders including the national and the state governments, developmental partners, civil society organizations, international agencies, research institutions, the private sector and the other stakeholders whose work is relevant to the elimination of TB in India. This program works on four strategic pillars, as mentioned below, DTPB.

VISION: TB-Free India with zero deaths, disease and poverty due to tuberculosis.

GOAL: To achieve a rapid decline in the burden of TB, morbidity and mortality while working towards the elimination of TB in India by 2025.

Pillars of NSP for TB Elimination : Detect – Treat – Prevent – Build [DTPB]

Features of the National Strategic Plan for TB Elimination

- Complete detection of TB cases by 2020 followed by 100% elimination of TB by 2025.
- The Conditional Access Program (CAP) has introduced an Anti-TB Drug named *Bedaqualine*
- Under the [Make in India](#) program, development of a first-line anti-TB drug was proposed in the public sector.
- A corpus fund for TB to be maintained under the Bharat Kshay Niyamtran Pratishthan (BKNP) which is also known as the India TB control Foundation, is one of the visions of this NSP.

- It aims at creating synergy through a shift from a regulatory approach to a partnership approach to streamline the services in the largely unorganized and unregulated private sector.
- Technological implementation by creating a user-friendly online platform **E-Nikshay** to let doctors notify the cases as soon as they come across the infected patient.
- Awareness about TB and its prevention among masses is important. Media campaigns are planned under this program to promote TB Preventive measures. Swasth E- Gurukul is one such initiative of the World Health Organization.

The overwhelming challenge facing TB control in India remains delayed diagnosis and inadequate treatment, particularly among patients seeking care from private providers. The plan aims to detect and treat 100% of the TB cases and at the same time prevent further spread of the disease by building & strengthening the policies in this direction.

UPSC Questions related to tuberculosis?

What is the first sign of tuberculosis?

Symptoms of Tuberculosis include

- Coughing with blood; Night sweats; Chest Pain;
- Bad cough for more than 3 weeks;
- Fatigue & Weakness;
- Sudden and random Chills; Fever

What is MDR TB?

The Multi-Drug Resistant TB (MDR-TB) emerges in the host body due to lack of treatment drug and the bacteria not being eradicated completely from the body due to interrupted course of antibiotic medicine.

Can tuberculosis kill you?

Yes, if unattended, TB can be fatal.