



## Nutrition's Role in Tuberculosis Prevention

**For Prelims:** [Tuberculosis](#), [ICMR](#), [Nikshay Poshan Yojna](#)

**For Mains:** Challenges to eliminating TB, India's progress in eliminating TB

**Source:** [IE](#)

### Why in News?

Recently, two studies conducted by the [Indian Council of Medical Research \(ICMR\)](#) and published in prestigious journals such as **The Lancet** and **The Lancet Global Health**, have unveiled a pivotal connection between **nutrition** and [tuberculosis \(TB\)](#) prevention.

- **Reducing Activation of Tuberculosis by Improvement of Nutritional Status (RATIONS) trial shows correlation between nutritional support and the reduction of TB incidence.**
- **Weight gain's impact on TB mortality** revealing how increased weight among [malnourished TB](#) patients correlates with reduced mortality rates.

### Note:

- As per [WHO](#), India accounts for **27% of the global TB incidence and 35% of total TB-related deaths.**
- **India** is set to **eliminate TB by 2025.**

### What are the Key Highlights of the Studies?

- A total of 5,621 people were given the **nutrient-dense food for a year while 4,724 people received food parcels with no extra nutrition.**
  - At the end of the trial, there was a 39% reduction in TB incidence in the intervention group versus the control one.
- **Weight gain decreased the risks of tuberculosis mortality in severely malnourished TB patients in Jharkhand.**
  - Instantaneous risk of death was reduced by 13% for a 1% weight gain and 61% for 5% weight gain.
- The study involved **2,800 severely malnourished TB patients in Jharkhand**, with a prevalence of undernutrition in 4 out of 5 patients.
  - Nutritional support was provided to individuals responding to TB drugs for six months, while the duration was 12 months for those with multidrug-resistant tuberculosis.
- An early weight gain in the **first two months was associated with a 60% lower risk of TB mortality.**
  - Patients showed higher treatment success, better weight gain, and low rates of weight loss

during follow-ups.

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## Nutrition and Tuberculosis



● More than two-thirds of **trial participants were tribals**, most of whom were accessing ration from the PDS.

● **Undernutrition** (BMI<18.5 kg/m<sup>2</sup>) was prevalent in four out of five patients, with severe undernutrition (BMI<16 kg/m<sup>2</sup>) in nearly half of these.

● Prevalence of HIV, diabetes, MDR-TB was low but **alcohol and tobacco use was high**.

● Nearly one per cent of patients were **hypotensive, hypoxic**, or were unable to stand, indicating need for in-patient care.

● One of three contacts across all ages had **undernutrition** at enrolment.

● There was a **39 per cent reduction** of incidence of **all forms of TB** and a **48 per cent reduction** of incidence of **infectious TB** in the intervention group of families.



### What is Tuberculosis?

- **About:**
  - Tuberculosis is an infection caused by bacteria **called *Mycobacterium tuberculosis***. It can practically affect **any organ of the body**. The most common ones are lungs, pleura (lining around the lungs), lymph nodes, intestines, spine, and brain.
- **Transmission:**
  - It is an airborne infection that spreads through **close contact with the infected**, especially in **densely populated spaces** with poor ventilation.
- **Symptoms:**
  - Common symptoms of active lung TB are cough with sputum and blood at times, chest pains, weakness, weight loss, fever and night sweats.
- **Treatment:**
  - TB is a treatable and curable disease.
  - Anti-TB medicines have been used for decades and strains that are **resistant to 1 or more of the medicines have been documented** in every country surveyed.
    - **Multidrug-resistant tuberculosis (MDR-TB) is a form of TB** caused by bacteria that do not respond to isoniazid and rifampicin, the 2 most powerful, first-line anti-TB drugs.

- **MDR-TB is treatable and curable by using second-line drugs such as Bedaquiline.**
- Extensively **drug-resistant TB (XDR-TB)** is a more serious form of **MDR-TB** caused by bacteria that do not respond to the most effective second-line anti-TB drugs, often leaving patients without any further treatment options.

## What are India's Initiatives to Combat TB?

- [Pradhan Mantri TB Mukh Bharat Abhiyan.](#)
- [National Strategic Plan \(NSP\) for Tuberculosis Elimination \(2017-2025\).](#)
- [TB Harega Desh Jeetega Campaign.](#)
- [Nikshay Poshan Yojna.](#)

## Indian Council of Medical Research (ICMR):

- Indian Council of Medical Research (ICMR) is the apex body in India for the formulation, coordination and promotion of biomedical research.
- It was founded in **1911** with the name of Indian Research Fund Association (IRFA) and **renamed as ICMR in 1949.**
- It is **funded** by the Government of India through the Department of Health Research, **Ministry of Health & Family Welfare.**

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