

# Latent tuberculosis infection

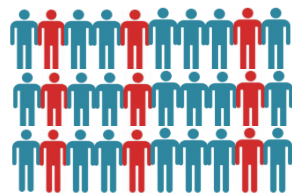
## Scaling up programmatic management of LTBI, a critical action to achieve the WHO End TB Strategy targets

### KEY FACTS

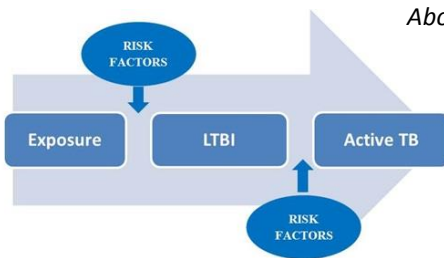
- Latent tuberculosis infection (LTBI) is a state of persistent immune response to stimulation by *Mycobacterium tuberculosis* antigens without evidence of clinically manifested active TB.
- About **one-third of the world's population has latent TB**, which means people have been infected by TB bacteria but are not (yet) ill with the disease and cannot transmit the disease.
- Persons with LTBI **do not have active TB disease but may develop it** in the near or in the remote future, a process called **TB reactivation**.
- It is critical to prevent the development of active disease by providing **preventive treatment** to those who are at high risk.
- People living with HIV** and **children less than 5 years who are household contacts of pulmonary TB cases** are key target risk groups globally.
- In 2015, over **900,000 people living with HIV** and around **90,000 child household TB contacts less than 5 years old** were provided with preventive treatment.

**2-3 billion**

persons with LTBI globally



About one in three persons



### LTBI DIAGNOSIS

Persons with LTBI have negative bacteriological tests: the **diagnosis** is based on a **positive result of either a skin (tuberculin skin test, TST) or blood (Interferon-gamma release assay, IGRA) test** indicating an immune response to *M.tuberculosis*. However, these tests have limitations as they cannot distinguish between latent infection with viable microorganisms and healed/treated infections; they also do not predict who will progress to active TB.

### WHO recommendations for the management of LTBI, by country group

COUNTRY GROUP	AT RISK POPULATIONS	TESTING ALGORITHM	TREATMENT OPTIONS
<b>LOW TB BURDEN</b> High-income and upper middle-income countries with an estimated TB incidence rate of less than 100 per 100 000 population	1) People living with HIV. 2) Adults and children who are household contacts of pulmonary TB cases. 3) Clinical indications –patients with silicosis; patients initiating anti-TNF treatment; patients on dialysis; patients preparing for organ or haematologic transplantation.	Exclude active TB using TB investigations. A positive IGRA or TST test result is required to diagnose LTBI.	6 months daily isoniazid 9 months daily isoniazid 3 months weekly rifapentine plus isoniazid 3 to 4 months daily isoniazid plus rifampicin 3 to 4 months daily rifampicin
<b>HIGH TB BURDEN</b> Resource-limited and other high and middle-income countries with an estimated TB incidence rate equal to or more than 100 per 100 000 Population	1) People living with HIV. 2) Children under 5 years of age who are household contacts of pulmonary TB cases.	Exclude active TB using TB investigations. An LTBI test is not required prior to LTBI treatment, but is encouraged for people living with HIV.  IGRA should not replace TST.	6 months daily isoniazid

Guidelines on the management of latent tuberculosis infection



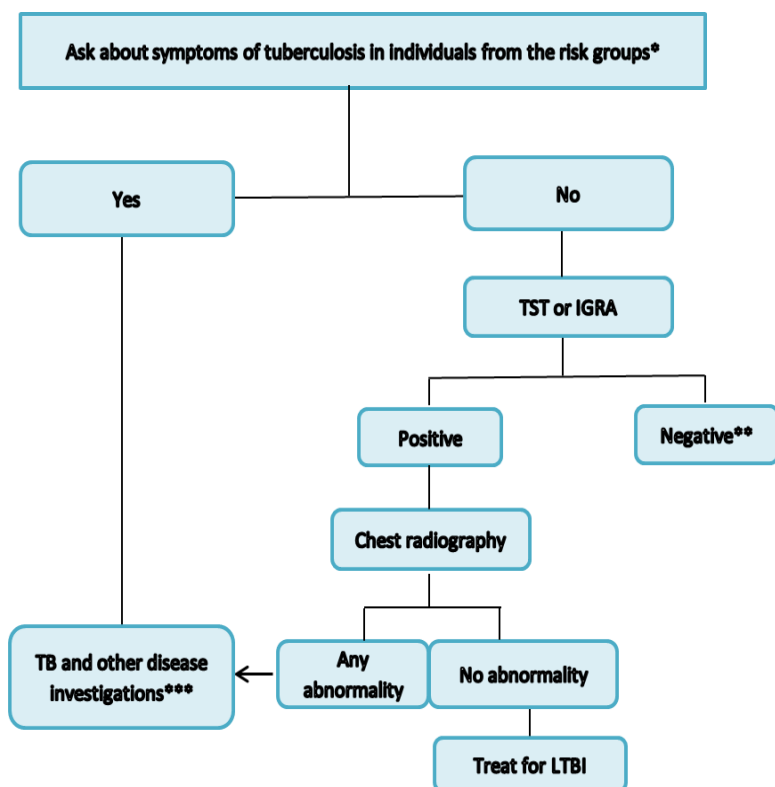
## LTBI TREATMENT

LTBI can be effectively treated to prevent progression to active TB, thus resulting in a substantial benefit for the individual. Currently available treatment options **can reduce the risk of developing active TB by 60-90%**. However, safety concerns exist, mainly related to the development of hepatotoxicity. Hence, regular clinical monitoring of individuals receiving treatment for LTBI through a monthly visit to the health-care provider is advised.

## CONTACTS OF MDR-TB CASES

Strict clinical observation and close monitoring for the development of active TB disease for at least two years is preferred over the provision of preventive treatment for contacts with MDR-TB cases.

### Algorithm for diagnosis and treatment of LTBI among high risk individuals



\* Any symptoms of TB include any one of: cough, haemoptysis, fever, night sweats, weight loss, chest pain, shortness of breath, fatigue. HIV test could be offered based on national or local guidelines or clinical judgment. Similarly chest radiographs can be done if efforts are intended also for active TB case finding

\*\* Clients for whom LTBI treatment is not indicated should be provided information about TB including on the importance of seeking care if symptoms of TB developed.

\*\*\* National TB guidelines should be followed while investigating for TB. In addition, those individuals in whom TB is excluded after investigations (including individuals with fibrotic radiologic lesions) can be considered for LTBI treatment.

## SCALE-UP

Systematic diagnosis and treatment of LTBI is part of the new End TB strategy and achieving  $\geq 90\%$  LTBI treatment coverage among people living with HIV and child contacts of TB cases is one of the global priority targets. LTBI management can also contribute to TB elimination, particularly in low TB incidence countries where a large proportion of cases are due to reactivation of latent infection. Therefore, WHO recommends a two-pronged approach, in which: (1) treatment for LTBI is provided in all countries to people living with HIV and children aged less than 5 years old who are household or close contacts of a TB case; and (2) treatment for LTBI is provided to additional risk groups in low TB burden countries.

**Systematic recording and reporting using standardized indicators** should be established to allow effective monitoring of LTBI diagnosis, treatment and outcome.

## RESEARCH GAPS

Research gaps include the development of diagnostic tests with improved performance and predictive value for reactivation TB and drug regimens that can be provided for short duration and with less adverse events.

## Global Consultation in 2016

To identify **challenges, opportunities, and best practices.**



## Recommendations to facilitate the scale-up of programmatic LTBI management

[http://www.who.int/tb/challenges/consultation\\_meeting\\_ltbi/en/](http://www.who.int/tb/challenges/consultation_meeting_ltbi/en/)