

# Latent tuberculosis infection (LTBI)

## What is tuberculosis (TB)?

TB is an infectious disease caused by the TB germ *Mycobacterium tuberculosis*. It is a curable disease and is also preventable. TB usually affects the lungs but can affect any part of the body. TB is spread when people who have active untreated TB in their lungs or throat, cough, sneeze or speak and send the TB germs into the air. People in contact with those with active untreated TB are at risk of breathing the germs into their lungs and becoming infected. When infected, some people will progress to active TB disease within months but most people develop latent TB infection (LTBI) with the potential for progression to active disease at a later date. Therefore 2 conditions exist for *M. tuberculosis* germs, TB disease and latent TB infection (LTBI).

## What is latent TB infection (LTBI)?

Latent TB infection (LTBI) is what happens to most people who breathe in TB germs. The germs enter the body, the body walls the TB germs off, similar to the way a scab forms over a cut, and the germs stay in the body in a 'sleeping' or inactive state. This is known as latent TB infection (LTBI). Persons with LTBI do not feel sick and do not have any symptoms. They are infected with *M. tuberculosis*, but do not have TB disease. Persons with LTBI are not infectious and cannot spread TB infection to others.

Overall, without preventive treatment, 10-20% of people with LTBI will develop active TB disease at some time in their lives. About half of those who develop TB disease do so within the first 2 years of being infected. However TB disease can occur even after many years, usually when the body defences are weakened. This may be due to aging, developing a serious illness (including diabetes, kidney disease and cancer), drug or heavy alcohol use, certain immunosuppressive medications or HIV infection.

## Important facts about LTBI

Treating LTBI kills the inactive TB germs preventing development of active TB later in life.

A person with LTBI:

- Has a positive Mantoux test (tuberculin skin test) or IGRA (blood test) result
- Has a chest x-ray showing no active disease and has negative sputum tests
- Has TB germs hidden in his/her body that are alive, but inactive or 'latent'
- Does not feel sick
- Cannot spread TB bacteria to others
- Can be treated to prevent TB developing in the future.

## How is LTBI treated?

Medications prescribed by TB specialists can reduce the risk of progressing from LTBI to active TB disease by up to 92%. Which medication is used depends on an individual's health and circumstances.

### Isoniazid (INH)

The course of isoniazid (INH) is given for 9 months. INH can occasionally cause drug-induced hepatitis (liver inflammation) so a liver function blood test will be done before starting treatment. INH is not recommended for people with liver disease or for those who consume alcohol regularly and heavily. It is very important that a person avoid/minimise drinking alcohol while taking INH as alcohol increases the risk of serious liver damage.

### Rifampicin

A 4 month course of rifampicin is sometimes prescribed for patients who are unable to take INH. This treatment needs to be given under direct supervision, usually by a health care worker. Patients taking rifampicin should note that a pink-orange discolouration of bodily fluids (e.g. urine, sweat, tears) is expected. Contact lenses and clothes may be permanently stained. Rifampicin also makes all forms of oral contraception and implants (implanon) less effective, so women of child bearing age should discuss other contraception choices with their doctor.

### Isoniazid and Rifampicin (3HR)

A 3 month short course of Isoniazid and Rifampicin, taken daily may be prescribed for some patients. This treatment needs to be given under direct supervision, usually by a health care worker. The side effects include those listed above for Isoniazid and Rifampicin.

### Isoniazid and Rifapentine (3HP)

A 3 month short course of Isoniazid and Rifapentine, taken once weekly may be prescribed for some patients. This treatment needs to be given under direct supervision, usually by a health care worker. The side effects include those listed above for Isoniazid and Rifampicin.

## Drug Duration

Isoniazid*	9 months
Rifampicin	4 months
Isoniazid & Rifampicin	3 months
Isoniazid & Rifapentine	3 months

\*A vitamin B6 supplement (pyridoxine) is also given with isoniazid

## Medication side effects

Treatment for LTBI has been taken by millions of people around the world and is generally safe and well tolerated. However, as with any medicine, the tablets sometimes cause side effects. The doctor, health worker or nurse should be told immediately if any unexplained illness develops or if any of the following symptoms occur:

- Upset stomach
- Loss of appetite
- Nausea
- Vomiting
- Skin rash/itch
- Yellowish skin or eyes
- Dark urine (coca cola coloured)
- Tingling or numbness in the hands or feet
- Fever lasting 3 days or more.

## Monitoring latent TB infection

If patients do not take medications to treat their LTBI they may need to be followed up in the TB Clinic.

These patients will have a review by a doctor and chest x-rays at 6, 18 and 30 months after their first appointment.

## Related information

- [Guidelines for the control of Tuberculosis in the Northern Territory](#)
- [Tuberculosis profile page on NT health and resources](#)

## Contact

For more information contact the Public Health Unit's Centre for Disease Control in your region.

The full list of contacts of contacts can be found at [NT Health](#).

Location	Address	Phone	Fax	Email
Darwin	Ground Floor, Building 4 Royal Darwin Hospital Rocklands Drive Tiwi NT 0810	(08) 8922 8044 1800 008 002	(08) 8922 8310	<a href="mailto:CDCSurveillance.DARWIN@nt.gov.au">CDCSurveillance.DARWIN@nt.gov.au</a>
Katherine	O'Keef House Katherine Hospital Gorge Road Katherine NT 0850	(08) 8973 9049	(08) 8973 9048	<a href="mailto:CDC.Katherine@nt.gov.au">CDC.Katherine@nt.gov.au</a>
Tennant Creek	Schmidt Street Tennant Creek NT 0860	(08) 8962 4259	(08) 8962 4420	<a href="mailto:CDC.Barkly@nt.gov.au">CDC.Barkly@nt.gov.au</a>
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