

Tuberculosis and Latent TB Treatment

*TB (tuberculosis) is a serious illness that most commonly affects the lungs, but can involve any major organ system. The cause is a bacteria, *Mycobacterium tuberculosis*.*

Symptoms

Symptoms of the active disease include:

- Fatigue
- Weight loss
- Fever and sweats
- A productive, sometimes bloody, cough.

How do you become infected with TB?

TB bacteria are sprayed into the air in tiny moisture droplets when someone with active TB of the lung or larynx laughs, coughs, sneezes, speaks, or sings. If someone else inhales these infectious droplets, the bacteria can settle in the lungs where they begin to multiply.

In healthy people, as the germs increase in number and spread out from the lungs, the person's immune system recognizes the infection and mounts a response to prevent this infection from making them sick. Later on (can be just months or many years), if a person who has been infected with TB suffers a change in health and the body's immune defenses are damaged, the TB germs can once again multiply and make the person sick. This TB infection has now become TB disease. This occurs in roughly 10% of infected people.

Who is at particular risk of TB infection?

For many reasons, some groups of people are at higher risk to get active TB disease. The groups that are at high risk include people:

- With HIV infection
- In close contact with those known to be infectious with TB disease
- From countries with high TB rates
- With medical conditions that make the body less able to protect itself from disease (for example: people with diabetes, people taking medications that inhibit the immune system such as long term use of corticosteroids, and people with chronic lung disease)
- Living in overcrowded spaces
- Who don't receive regular health care
- Who abuse drugs and/or alcohol
- Who work or are residents of long-term care facilities such as prisons, nursing homes, and hospitals.

How do you check for TB infection?

There are two tests that can be used to help detect TB infection: a TB blood test or a skin test.

- Blood Test
 - A TB blood test is given to test for TB infection. This blood test measures how a person's immune system reacts to the germs that cause TB. The blood test is not affected by previous vaccination with BCG.
- Skin test
 - A small needle is used to put some testing material, called tuberculin, under the skin. In 2 – 3 days, you return to the health care worker who will check to see if there is a reaction to the test.

A positive test indicates past infection with TB, but not necessarily active TB disease. A chest X-ray will then be done to determine if active lung disease is present. Other tests may be done if TB disease is suspected to be present in other parts of the body (such as the kidneys or bones.) If the chest X-ray is normal, that means that the TB bacteria is not actively causing disease and the person is not infectious to other people at this time. That is considered a latent TB infection.

In healthy people who have been infected with TB, 5% will develop active TB disease during the first two years after infection, and an additional 5% will develop active TB during the remainder of their lifetime.

If you have had a previous positive test, please tell the health care worker prior to having the test repeated.

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What about BCG vaccination?

BCG is given in some countries, but not generally in the United States, to improve the body's immune response to TB exposure. The BCG vaccine can only cause a person to have a positive PPD for several years after vaccination. In individuals who have received a recent BCG vaccine, testing with the blood test is preferred.

Treatment of Latent Tuberculosis:

Latent tuberculosis infection (LTBI) is treated with a medication or medications to kill the dormant bacteria. Treating LTBI greatly reduces the risk of the infection progressing to active tuberculosis later in life. While undergoing treatment for TB (either infection or disease), it is important to avoid drinking alcohol and taking acetaminophen (Tylenol). Both of these substances can make the liver work harder, potentially increasing the risk of liver injury from the medication.

Medications:

Isoniazid – INH is a pill that is taken once per day for nine months. It is the preferred regimen for HIV infected individuals taking antiretroviral medication and for children aged 2-11.

Isoniazid (INH) and Rifapentine (RPT) Regimen:

The 12- dose regimen of INH and RPT is another effective regimen option for otherwise healthy patients. It is recommended for patients aged ≥ 12 years who have had recent exposure to contagious TB, conversion from negative to positive skin or blood TB test or radiographic findings of healed pulmonary TB. It can also be used for certain other patients when it offers practical advantages.

This regimen is not recommended for:

- Children younger than 2 years old,
- People with HIV/AIDS who are taking antiretroviral treatment,
- People presumed to be infected with INH or RIF – resistant *M. tuberculosis*, and
- Pregnant women or women expecting to become pregnant

Adverse Drug Reactions:

Patients on treatment for LTBI should be instructed to report any signs and symptoms of adverse drug reactions to their health care provider, including

- Unexplained loss of appetite, nausea or vomiting, dark urine (color of coffee or cola), or yellowing of skin
- Persistent aches or tingling of hands or feet
- Persistent weakness, fatigue, fever, or abdominal tenderness
- Easy bruising or bleeding
- Blurred vision or decreased visual acuity
- Rash, fever, head/body aches or dizziness

Vitamin B6 (pyridoxine) 25-50 mg daily may be recommended to prevent INH induced neuropathy, especially in pregnant and breast-feeding women.

Patients taking RPT will notice a normal orange discoloration of body fluids, including urine and tears. Contact lenses may be permanently stained.

Certain foods such as fish (skipjack, tuna, and sardines) or cheese (Swiss and Cheshire) have caused reactions in some people while taking INH. This may present as redness or itching of the skin, hot flashes, rapid heartbeat, sweating, chills or lightheadedness and should be reported.

It is recommended that you do not consume alcohol while on this medication due to increased risk of liver injury and/or Hepatitis.

These medications may interact with other medications that you are taking. Please inform your providers of any medication you are taking or start taking during your treatment.

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- INH increases blood levels of phenytoin (Dilantin) and disulfiram (Antabuse)
- RPT decreases blood levels of many drugs including oral contraceptives, warfarin, sulfonureas, and methadone
- RPT is contraindicated in HIV-infected individuals being treated with protease inhibitors (PIs) and most nonnucleoside reverse transcriptase inhibitors (NNRTIs)

Prior to starting any treatment of LTBI, all patients undergo an individual health history review and physical exam. The health care provider is particularly interested in identifying if a person has any history of drug allergies, liver or kidney disease, alcohol use, diabetes, seizure disorder, is or has taken any prescription or over the counter medications or has any other medical conditions. Occasionally blood testing is required prior to starting LTBI treatment.

If the 9 month treatment with INH is chosen, the individual will be followed regularly to check for any signs of problems.

If the 12 dose option is chosen, the individual will be directly observed when taking his/her medication.

It is very important that full course of treatment be completed to adequately kill the TB bacteria and to prevent resistant strains of TB.

Any reactions that may be possibly related to the use of these medications should be reported immediately.

In an emergency go to Mount Nittany Medical Center or call 911 for an ambulance.

Test Results and Advice Nurse

Send secure message to advice nurse via the UHS website or call 814- 863-4463.

Appointments

Appointments can be made online via the UHS website, by phone 814-863-0774, or in person. If you are unable to keep your appointment, please call or go online to cancel. Otherwise you will be charged for the visit.

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