

Isolation

A patient is contagious and must be in isolation as long as TB bacteria are seen in the sputum. The duration is very variable. Isolation for drug resistant tuberculosis often must take place in a hospital, while the proper treatment is found and tolerability and response to the treatment ensured. If isolation occurs **outside of hospital**, the patient must:

Cover the nose and mouth while coughing/sneezing using a handkerchief or disposable napkin. Cloth handkerchiefs should be washed at 60°C. Single use napkins should be disposed of in a trash bag that the patient must close securely.

Sleep alone in a room that others do not enter **for the duration of isolation**.

Eat and drink alone using facilities that others do not enter **while the patient is present**. Such facilities must be thoroughly aired out before others enter them (all windows opened). It is permitted to eat and drink out of doors, the patient must take care to maintain at least 2 metres distance from others while outside.

Avoid all contact with others indoors or in conveyances. If proximity to others is unavoidable, the patient must wear a facemask covering both nose and mouth securely, an FFP2/N95 mask. Health care providers should give the patient a supply of such masks and explain their use. Use of **indoor** fitness facilities in use by others is **not permitted** during isolation.

Air out the rooms they use by opening windows or using air conditioning equipment as much as possible. It is not permitted to use rooms during isolation, where the air from the room enters spaces used by others.

Spend as much time as possible outdoors and exercise regularly to maintain or improve their own health, but not in crowded places. If other people are within 2 metres distance outdoors, the patient should wear an FFP2/N95 mask.

The duty to avoid infecting others is codified in Icelandic law, in the Act on Health Security and Communicable Diseases, no. 19/1997.

The ExplainTB mobile application for Android or iPhone or website
<https://www.explaintb.org/site/en> are recommended for more information
in 41 languages.

Instructions for patients with contagious tuberculosis outside of hospital



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What is tuberculosis (TB)?

Tuberculosis (TB) is an infectious disease, often lung disease (pulmonary TB), caused by bacteria (*Mycobacterium tuberculosis*; MTB). TB causes a lot of illness worldwide but has become rare in Iceland since effective antibiotics were found in the latter half of the 20th century.

We get infected with TB if we breathe in the bacteria, into our lungs. TB bacteria can spread from the lungs to cause disease in any part of the body. If the bacteria cause disease in the lungs or other parts of the respiratory system, they can be spread to others by cough, sneeze etc.

Who pays for health care for TB?

All cost of diagnosis and treatment of tuberculosis is paid for by the Icelandic state, also for people who are not covered by the Icelandic Health Insurance.

Contact tracing and TB infection

People who have been in contact with a patient with pulmonary TB may be infected with TB even though they are not yet ill. The immune system is able to contain the infection but not eradicate the bacteria. Most people infected with TB will become ill at some point, even healthy people. For children and immune suppressed people, it is particularly important to look for the infection if they have been in contact with a contagious person with TB (contact tracing), as they may quickly become dangerously ill. People with TB infection but **not** TB disease are offered a simpler antibiotic therapy to reduce the risk of illness from the infection.

In Iceland, **all** contacts of people with contagious TB are advised to get tested with a skin test or blood test. All infected persons are offered antibiotics. The tests are usually done soon after tracing identifies the contact and again in 10-12 weeks to ensure that the test is reliable.

Drug resistant TB

Some MTB bacteria are resistant to many of the antibiotics that worked well against TB previously (multi-drug resistant TB = MDR-TB). If resistance is likely or confirmed, treatment is usually started in hospital, due to the risk of spread to others and uncertainty about the best combination of antibiotics.

Diagnosis of TB

Pulmonary TB is diagnosed using chest X-ray. To assess whether a patient is contagious and likely to spread the infection to others, a sample to look for MTB is necessary. Usually a sputum sample (expectorated mucus) is sufficient, but it may be necessary to get a sample from the lungs, using bronchoscopy. For children stool samples or stomach fluid (gastric aspirate) are used. The samples are stained to identify the MTB bacteria and tests for genetic material of MTB (PCR) and genetic markers for resistance against the most important antibiotics performed. Results from these tests are available within a few days of sample collection. If MTB is found in these tests, the patient is contagious and contact tracing must be done. If MTB is not found immediately, there is less chance of spread to others. The sample is cultured so that the best drugs may be identified. Culture takes 6-12 weeks. If MTB is found in early samples from adults, sputum samples are collected every few weeks until no bacteria can be found, and isolation can be lifted. Children who are

not yet in puberty are rarely contagious even when they have pulmonary TB, isolation is rarely necessary before puberty.

How is TB treatment done?

A health care worker must go over the details with each patient, with an interpreter if needed. TB treatment is difficult for most people. Contagious TB patients must be isolated to avoid spread to others. Treatment is always started with 4 or more drugs to increase chance of cure and avoid development of resistance. If drug susceptible TB is confirmed, the regimen is simplified to 2 drugs after 2 months and is complete after 6 months total. Usually, the drugs can be taken together, once daily. Most people notice nausea and/or abdominal pain which resolves after the first two weeks.

Treatment of drug resistant TB

Treatment for MDR-TB is typically longer and other drugs, sometimes several more drugs, are used than for drug susceptible TB. How the drugs affect the disease, and the patient, plays a role in the duration of treatment. This cannot be certain before starting treatment. Typically, at least 4 drugs are used for the entire duration of treatment. Treatment has evolved and may be as short as 9-12 months, but that short treatment is not possible for all patients with resistant TB. Sometimes the combination of drugs must be chosen specifically for the patient, based on results of drug testing against the MTB cultured from their specimen.

It is necessary to take all the doses of all the drugs to be cured of TB.

If you notice side effects, contact a health care provider.

Do not stop taking the drugs unless advised to do so by a physician. If it is necessary to halt the treatment, all the drugs should be halted at once.
