

## Fact Sheet – Tuberculosis (TB)

### What is TB?

Tuberculosis (TB) is a serious but treatable disease caused by a bacterium (germ) called *Mycobacterium tuberculosis* (occasional cases may be caused by *Mycobacterium bovis*). TB usually affects the lungs ('pulmonary TB'), but it can also affect other parts of the body, such as lymph nodes, brain, kidneys, bowel, or bones ('extrapulmonary TB').

### How is TB spread, and can I catch it easily?

TB spreads from person to person through the air. TB germs get into the air when a person with TB disease of the lungs or throat coughs, sneezes, speaks or sings. These germs can stay in the air for several hours, especially in enclosed spaces. Persons breathing in air containing TB germs can become infected. However, TB is not easy to catch – it usually takes many hours of close contact with a person who has infectious TB, for close contacts to be infected.

### What is the difference between latent TB infection (LTBI) and TB disease?

The initial infection with the TB germ is called latent TB infection (LTBI). Only 5-10% of people who have LTBI go on to develop active TB disease at some stage in their lives – therefore 90-95% of people with LTBI will never develop active TB disease.

People with latent TB infection (LTBI) have TB germs in their bodies, but they are not sick, because the germs are not active. The germs are dormant or 'asleep'. People with LTBI are not infectious to others and do not have symptoms of TB disease. However, they do have a small risk of developing TB disease in the future. For this reason, LTBI is often treated, to reduce the person's chance of developing TB disease in the future. The risk of developing active TB disease is higher within the first two years of becoming infected, and for people whose immune systems are weak (for example, people with HIV infection, cancer, kidney disease, diabetes, or who are taking chemotherapy or long term steroid treatment).

People with TB disease (active TB) are sick from TB germs that are active in their body. They usually have symptoms of TB disease. People with TB disease of the lungs or throat (larynx) are capable of spreading the germ and are infectious to others. TB disease can be cured by taking special TB medication. TB disease is a serious condition, and should be diagnosed and treated early. Anyone who has symptoms of TB disease should see their family doctor (GP) as soon as possible.

### What are the symptoms of latent TB infection (LTBI)?

A person with latent TB infection (LTBI) has no symptoms caused by the LTBI.

### What are the symptoms of TB disease?

The general symptoms of TB disease include unexplained weight loss, unexplained fever, loss of appetite, sweating (especially at night), and feeling tired or weak all the time. The symptoms of TB disease of the lungs also include prolonged coughing (a persistent cough lasting 3 weeks or more, and not getting better), coughing up of blood (or blood in the spit), chest pain and shortness of breath. The symptoms of TB disease elsewhere in the body depend on the part of the body affected (for example, enlarged lymph nodes or glands if the TB disease is in the lymph nodes). People with TB disease may have no symptoms early on in the course of the disease, but usually develop at least some or all of the symptoms above as the disease progresses.

### What should I do if I have been exposed to someone with TB disease or LTBI?

A person with LTBI is not infectious – they cannot spread TB germs to other people. You do not need to be tested if you have spent time with someone with LTBI.

If you have spent time with someone recently diagnosed with TB disease, especially someone with TB disease of the lungs or throat, you will usually need to be tested. People with TB disease are most likely to spread the infection to those closest to them with whom they spend a lot of time, such as family members or close co-workers or close schoolmates. Not all co-workers or schoolmates will need to be tested – it

depends on how infectious the person with TB disease is, and how much contact they had with their co-workers or schoolmates while they were infectious. Once people with TB disease are taking TB medication, they quickly become non-infectious to others, and can return to work or school.

If you are in the greater Auckland region and you believe you are a close contact of a person with TB disease, you should contact the Auckland Regional Public Health Service (ARPHS) directly on (09) 623-4600, and tell us that you think you may be a contact of a TB case.

### **How do people get tested for latent TB infection (LTBI) and TB disease?**

The test most commonly used to diagnose latent TB infection (LTBI) is the Mantoux test (a type of tuberculin skin test). The skin test involves injecting a very small amount of tuberculin fluid into the skin in the lower part of the arm. The result of the Mantoux test must be read (measured) after 72 hours by a trained health care worker, who looks for a reaction of a certain size on the arm. The Quantiferon-TB Gold (QFT) test is a blood test to diagnose infection with TB germs. This test can help us to decide if a positive Mantoux test is due to a past BCG vaccination or to infection with non-tuberculous mycobacteria (neither of which need treatment), or due to infection with TB germs.

Tests for TB disease include chest X-rays, sputum tests, blood tests, urine tests and biopsies (for example, sending a sample of a lymph node to the laboratory for examination).

### **What does a positive Mantoux test mean?**

A positive Mantoux test only means that a person has probably been infected with TB germs. It does not tell us whether or not the person has active TB disease. A person with a positive Mantoux test always needs a chest X-Ray, blood and urine tests, and possibly other additional tests, to confirm whether or not the person has TB disease or LTBI.

### **What about BCG vaccination? Doesn't that prevent TB?**

The vaccination against TB is called BCG. The main role of BCG vaccination is that it may prevent or modify the development of severe or widespread forms of TB (TB meningitis and miliary TB) in young children. Therefore the current New Zealand policy is that BCG vaccination should be offered only to infants at increased risk of TB. BCG should be given soon after birth. Eligible children under five years of age who were not vaccinated soon after birth can also be given BCG.

### **Why is latent TB infection (LTBI) treated?**

If you have LTBI, your doctor may still advise you to take medicines to prevent you from developing TB disease. The decision to offer someone treatment for LTBI is based on their likelihood of developing TB disease. Some people are more likely than others to develop TB disease once they have LTBI. This includes people who have recently been exposed to TB disease, and people with certain chronic medical conditions or taking certain medications.

### **How is TB disease treated?**

TB disease can be cured. To be cured, people with TB disease must take special TB medicines regularly for 6 to 12 months (or even longer). It is very important that people with TB disease finish their course of medicines, and take the medicines exactly as prescribed. If they stop taking the medicines too soon, they often become ill again. If they do not take the medicines correctly, any TB germs that are still alive may become resistant. TB that is resistant to one or more first-line medicines is much more difficult and more expensive to treat, and treatment takes much longer.

### **What role does the Auckland Regional Public Health Service (ARPHS) play?**

Tuberculosis is a notifiable disease in New Zealand. Any doctor who suspects or confirms a diagnosis of TB disease is required to notify the local public health service. TB treatment is prescribed by the person's TB specialist (a chest or infectious diseases specialist).

Auckland Regional Public Health Service (ARPHS) is the public health service for the greater Auckland region. The responsibility of ARPHS is to assist and supervise all Auckland residents with TB to complete their treatment, and to follow up any close contacts who may need testing. Public health nurses supervise TB treatment in the community and meet regularly with patients. Often the nurse will give the medicines to the patient and watch them take it. This is called directly observed therapy (DOT). DOT ensures that medicines are taken exactly as intended and without any breaks in treatment. This has been shown to maximise cure rates and to minimise the development of drug resistant strains of TB.