Infectious Diseases

Tuberculosis (TB)

What is TB?

TB is an infection caused by a germ (bacteria) called mycobacterium tuberculosis. It is mostly found in the lungs but can affect any part of the body. If you have symptoms or a doctor finds signs of infection, then this is called active TB. If you have TB infection without any symptoms or signs then this called latent TB. The most common symptoms of TB are a cough that lasts for more than three weeks, weight loss, fever and night sweats.

How is TB caught?

The TB germs usually live in the lung. When you cough or sneeze, droplets of the germ spread in the air and other people can catch the infection by breathing the droplets in. When this happens, most people will be unaware and their immune system will deal with the germs. If the immune system cannot cope, symptoms will develop six to eight weeks later. TB can cause symptoms years after the infection was caught and reactivate when the immune system is weak. You usually have to have contact with a person for a considerable amount of time for TB to be caught and therefore this usually means living in the same house or being from the same family. Anyone can get TB, however, factors which increase your risk of catching TB are if you or your family are from a country where TB is common, live or work where TB is more common, or have other medical conditions which may make it harder for your immune system to fight the germs.

When am I infectious?

You are infectious only if you have TB in your lungs or throat and you are coughing up TB germs in your sputum. Sputum is the phlegm that you cough up from your lungs and throat.

Usually a total of three samples of sputum are sent to the laboratory and are looked at under a microscope. This test can be done quite quickly with a result available within 24-48 hours.

If TB germs can immediately be seen by looking with a microscope this is called 'smear positive'.

If TB germs cannot immediately be seen by looking through a microscope this is called ‘smear negative’. This does not mean that you do not have TB, only that there are not enough TB germs in the sputum to be seen on the quick look down the microscope.

You are more infectious when you are ‘smear positive’, because there are more germs being coughed out in your phlegm/ sputum.

The laboratory will also try to grow TB germs from the sputum.
This process is much like growing a seed in your garden, which involves creating an environment that allows the TB germs to increase in number making them easier to see. This is called a culture test. TB germs grow and multiply very slowly and therefore a culture test may take **up to eight weeks** for a result.

You are not infectious if you have TB elsewhere in your body but sometimes it can be in your lungs without you feeling it, so it is important that a chest x-ray or a CT scan is done to ensure the TB is not in your lungs. If there are signs of TB from your chest x-ray or CT scan but you are unable to cough out sputum, then samples from the lung can be taken by doing a bronchoscopy – a procedure in which a chest doctor looks inside the lungs using a thin instrument to collect samples which can be sent to the laboratory.

TB is **not** spread by shaking someone’s hands, sharing food or drink, touching bed linens or toilet seats, sharing toothbrushes or kissing.

**What happens if I am infectious?**

**Admission to hospital:**  
If you are infectious, it is important you are admitted to hospital and isolated in a special room where air flows into the room such that the TB germs in the air will not escape into the corridor (called a **negative pressure room**). This will prevent the spread of infection to others. If you move out of this special room it is important that you wear a mask to stop any TB germs from your mouth reaching other people.

**D10 Ward:**  
In Addenbrooke’s hospital, D10 is an 11 bedded isolation ward, found on level 10 of the hospital for patients who require care from the infectious diseases team. Each of the rooms has toilet and shower facilities and Hospedia, a pay per view system installed at your bedside that includes telephone, television and radio. You can also use your own electrical devices in these rooms. However, WI-FI is not available. Chaplaincy and pastoral care is available to all patients admitted to Addenbrooke’s hospital. The chaplaincy and pastoral care team can be contacted via the hospital switch-board. For those where English is not their first language, consultations can be done **via LanguageLine**, a telephone interpreter service to ensure you understand what is happening during your hospital stay as well as being able to share questions and concerns you may have.

Anyone who visits your room will wear a mask over their nose and mouth to prevent TB infection being passed to them. Before leaving your room for any purpose (i.e. investigations, clinic or for own personal reasons) it is important you wear a mask to cover your nose and mouth to prevent passing the infection to others. The only place where a mask does not have to be worn by the patient with TB infection is their own room. Visitors are allowed as per the wards visiting times but they must follow the above precautions. Visitors should be limited to those who you have had close contact with prior to the admission. Children are generally discouraged from visiting.
You are allowed to leave your room and ward for 30 minutes on each occasion but initially, on the first few occasions, will be accompanied by a health care member. It is important you sign in and out of the ward book when coming and going. This book can be found at the main nurse’s station.

The senior nurse in charge of the ward is Louise Avery, and any concerns or questions about the ward can be directed at Louise or other members of the ward staff.

**TB nursing team:**
These are specialist TB nurses who provide support to the doctors and patients. Their role tends to be more focused on following-up the patients in the community once discharged from the hospital and also in any future clinic appointments.

**Tests and treatment:**
During your stay on D10, you will be reviewed by our infectious disease doctors on their ward round on a daily basis, and with a consultant review twice a week. The consultant is the lead doctor for the team and in charge of your medical care. You might meet several different infectious disease doctors during your admission as we have a number of doctors who rotate their roles depending on their work schedules.

Sputum samples which contain TB germs will be tested in the laboratory to **see if they can be killed by a range of different medicines.** Based on these results, you will be started on a **combination of at least four medications.** It is common for at least one medication to be given through the vein (intravenously) and therefore a **PICC line will be arranged.** A PICC line is a thin tube inserted and positioned into a large vein that carries blood to the heart and allows long term antibiotics to be given.

Due to the side effects of each drug and using them together, **your vision, hearing and the rhythm of your heart** will be checked before starting TB treatment and at regular intervals during treatment. Frequent blood tests (usually from the PICC line) will be done to monitor your **kidney and liver function as well as drug levels** to ensure the correct doses of the TB drugs are being given.

As having TB can increase your risk of having other infectious diseases, a blood test to check for **hepatitis and HIV will also be advised.**

Once treatment for TB is started, it is important that **weekly sputum samples are collected** to monitor response to treatment and determine if you are infectious or not.

**Notification and public health:**
Each case of TB needs to be informed (notified) to the Public Health Authorities. Public Health is an organisation which is part of the Department of Health in the United Kingdom that aims to prevent the spread of disease, protect the nation from health problems and improve the health of the whole population. Notification allows TB control and prevention of spread. The Public Health Authorities also provide guidance to the doctors and nurses on when discharge from hospital is appropriate and how your TB infection can be best managed when you are at home. This information is available through our TB nurses who will be made aware of you when you are admitted to hospital.
Multi-disciplinary team:
A variety of health workers will be involved in caring for you whilst you are in hospital and they can be described as a multi-disciplinary team. This will include the infectious disease team on D10, the respiratory (chest) team, microbiologists (primarily working in the laboratory), TB nurses and public health staff.

What should those who I have had contact with do?
Our TB nurses will make the necessary arrangements to contact those you live with to check if they have any symptoms of TB or if they could be infected but not yet have developed symptoms. They may be offered a skin test, blood test and/or chest x-ray to determine this to ensure treatment is started if needed and to prevent further spread of infection.

What is multi-drug resistant tuberculosis (MDR-TB)?
MDR-TB is when the TB germs cannot be killed (drug resistant) by two of the strongest medicines normally used to treat TB. This can develop as a result of previous inadequate treatment or if the person the infection was caught from was drug resistant. Inadequate treatment could mean not taking your medications when supposed to, taking the wrong dose or if the medicines are of poor quality.

The medicines used against MDR-TB are less strong and have more side effects. It is therefore not uncommon that patients with MDR-TB will feel more unwell, be infectious for a longer time and need hospital admission associated with a longer stay.

How long do I need to stay in hospital?
Patients with TB may need to stay in hospital for a variety of reasons and the length of stay is dependent on the following:

1. If they are unwell with either drug sensitive or resistant TB
2. If MDR-TB is suspected or confirmed.
3. To determine if they are infectious or not. If infectious and requiring admission to hospital for treatment and monitoring.
4. For housing and social reasons that are preventing a safe discharge or the safe administration of their TB drugs.

A person with drug sensitive TB is considered not infectious when two weeks of treatment has been received with good compliance and tolerance to their TB drug regime.

A person with MDR-TB is considered not infectious when three consecutive sputum samples are culture negative and there has been good compliance and tolerance to their TB drug regime. It can take up to eight weeks for a TB culture result to become available, and therefore the earliest possible time three sputum samples would be available would be after 11 weeks in hospital. It can take longer than this in cases of MDR-TB as the medication requires longer to kill the germs.
Patients are not required to stay in hospital to finish their full course of TB treatment.

How long will I need to take treatment?

TB infection which is drug sensitive and in the lung requires at least six months of treatment. For drug resistant TB, the treatment course can be variable and can last 18 months or longer. Treatment for TB infection affecting the brain or spine is at least 12 months.

It is crucial to ensure you complete your treatment plan and take your medications as prescribed. This maximises the chances of curing your TB. Missed doses that interrupt the medication schedule can unfortunately result in us needing to re-start your treatment from the beginning, and you may also become infectious to others which would lead to another hospital admission. Assuming good compliance with treatment, more than 90% of people with drug sensitive TB (TB that is not resistant to our first line medications) can be cured.

When you are discharged from hospital you will be followed up in clinic by a TB consultant and TB nurse based in the area you live. They will monitor your progress with your TB treatment and review any further tests that you may need to complete your treatment.

Useful sources of Information on tuberculosis:

TB Alert: A UK based charity which works to tackle TB in the UK and the developing world.


We are a smoke-free site: smoking will not be allowed anywhere on the hospital site. For advice and support in quitting, contact your GP or the free NHS stop smoking helpline on 0800 169 0 169.

Other formats:

If you would like this information in another language, large print or audio, please ask the department where you are being treated, to contact the patient information team: patient.information@addenbrookes.nhs.uk

Please note: We do not currently hold many leaflets in other languages; written translation requests are funded and agreed by the department who has authored the leaflet.

Document history

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