

## Blood tests

This page is about blood tests you might have before and after being diagnosed with lymphoma.

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We have separate information about the topics in **bold font**. Please get in touch if you'd like to request copies or if you would like further information about any aspect of lymphoma. Phone 0808 808 5555 or email [information@lymphoma-action.org.uk](mailto:information@lymphoma-action.org.uk).

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## What is a blood test?

A blood test is a simple procedure that involves taking a sample of blood to be tested in a laboratory. Blood contains:

- red blood cells, which carry oxygen around your body
- white blood cells, which help fight infections
- platelets, which help your blood clot if you are injured
- proteins, such as antibodies, enzymes and chemical messengers
- salts, such as sodium, calcium, potassium and chloride, which help keep your body fluids in balance
- sugars and fats.

The levels of each of these in your blood can give your medical team useful information about your health.

## Why might I need a blood test?

Most types of lymphoma can't be diagnosed by a blood test. However, blood tests can help your medical team find out how lymphoma and its treatment are affecting your body. They can also be used to find out more about your general health.

Most people affected by lymphoma have blood tests as part of their diagnosis and frequently throughout treatment. If you are in **follow-up**, you are likely to have blood tests less frequently.

You might have blood tests to:

- find out more about the exact **type of lymphoma** you have and how it is affecting your body
- check your general health
- see how your treatment is affecting you
- check whether you have recovered enough from one round of treatment before starting the next one
- monitor how your body is **recovering after treatment**
- check for **late effects** that might develop after lymphoma treatment
- look for any signs that might suggest your lymphoma has come back (**relapsed**) – although the person who has lymphoma usually notices this first and it is very rare for relapse to be picked up on a routine blood test.

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## What blood tests might I have if I'm affected by lymphoma?

Many different blood tests are used for people with lymphoma. The most common is the full blood count.

### Full blood count

A full blood count (FBC) is a test that measures how many blood cells you have in your blood. The number of each type of blood cell is often called the 'count'. Lymphoma and many treatments for lymphoma can cause low blood counts, such as:

- **anaemia** – low levels of red blood cells or haemoglobin (the protein in your red blood cells that carries oxygen)
- **thrombocytopenia** – low levels of platelets

- **neutropenia** – low levels of a particular type of white blood cell called a neutrophil.

A full blood count is used to check this. It also checks for high levels of particular types of blood cell. For example, if you have an infection or **chronic lymphocytic leukaemia** (CLL), you might have a high lymphocyte count (lymphocytosis).

## Other blood tests

There are lots of different blood tests you might have, depending on your symptoms, the type of lymphoma you have, and the results of your other tests and scans. Although some of these tests use complicated laboratory techniques, they only need a small sample of blood. The process of taking the blood sample is the same.

You might have blood tests to find out more about your lymphoma. These could include:

- A **blood film** to see what your blood cells look like under a microscope. It is used to check for abnormal or unhealthy cells.
- A test called **immunophenotyping, immunohistochemistry or flow cytometry** to find out what proteins your white blood cells are making. This can help your medical team diagnose the type of lymphoma you have.
- A **plasma viscosity** test to measure how thick your blood is. This is an important test if you have **Waldenström's macroglobulinaemia**.
- A **serum immunoglobulin** test to measure your antibody levels. Antibodies usually help your body fight infection. In some types of lymphoma, certain antibodies might be high. With some types of lymphoma, or after some lymphoma treatments, antibody levels might be low. This can increase your risk of getting infections. If your antibody levels are low and you have severe or recurrent infections, you might have **immunoglobulin replacement therapy**.

- Tests to check if you have any abnormal antibodies in your blood. This might involve a test called **serum protein electrophoresis** or a test to measure levels of particular abnormal antibodies called **cryoglobulins**. Tests to measure the levels of certain proteins in your blood, such as **lactate dehydrogenase (LDH)** or **β2-microglobulin**. Levels of these proteins can be high in people who have lymphoma. However, they can also be high for lots of other reasons, such as inflammation, infection or kidney problems. Having high levels of these proteins does not mean you definitely have lymphoma.

You might have other blood tests to find out more about your general health. These might check:

- How well your liver is working (**liver function tests**, or LFTs).
- How well your kidneys are working. This involves testing levels of salts ('electrolytes' – for example, potassium, calcium and chloride) and waste products in your blood using a test called **urea and electrolytes** or U&Es. You usually have levels of a waste product called **creatinine** measured at the same time.
- Whether you have any signs of inflammation in your body. This might involve measuring the levels of a protein called **C-reactive protein (CRP)** in your blood. CRP is a chemical that is released by damaged cells. Another test for inflammation involves measuring how quickly your red blood cells settle to the bottom of a test tube (your **erythrocyte sedimentation rate or ESR**). If there are inflammatory chemicals in your body, your red blood cells settle faster than usual.
- Whether you have, or have had, a viral infection that could be related to your lymphoma or that could flare up during your treatment. This is called viral serology. It can be used to check for several viruses, such as **HIV**, **hepatitis B or C virus**, **cytomegalovirus**, or **Epstein-Barr virus**.
- How well your thyroid gland is working (**thyroid function tests**). Some treatments for lymphoma can cause an underactive thyroid.
- Your **blood group** (if you need a **blood transfusion**).

Your medical team might suggest other blood tests depending on your individual circumstances. Lab Tests Online has an **index** with more detailed information on many different blood tests.

## Having a blood test

You might have blood tests at your local GP surgery or at a hospital outpatient department or clinic. Depending on where you're having your tests, you might need to book an appointment in advance or you might be able to go anytime that suits you. You'll be given all the information you need to book your tests.

If you're staying in hospital or you're having treatment on a day care unit, you usually have your blood tests on your ward.

### How should I prepare?

For most blood tests, you don't need to do anything to prepare.

For some blood tests, you might need to fast (not eat or drink anything except water) or stop particular medications for a certain amount of time before your test. Your medical team should tell you if you need to do this.

### How is the blood sample taken?

A doctor, nurse or phlebotomist (someone trained to take blood) takes the sample. The whole process only takes a few minutes.

- They clean the skin where they're going to take the sample – usually from a large vein in the inside of your elbow. For young children, they might apply some cream or spray to numb the skin. This is not usually offered to adults but if you are very concerned about the needle going in, ask if it is available.
- They wrap a tight band around your upper arm to make the vein swell. This makes it easier to take the sample.
- They insert a needle into your vein. This might sting a little but only for a moment. Tell the doctor, nurse or phlebotomist if you are in pain.
- They collect your blood in tubes connected to the needle. Depending on what tests you need, they might collect several tubes but each tube only contains a small amount of blood.
- They remove the band from your arm and take out the needle.
- They apply a plaster or small dressing. You can take this off after a few hours.

If you have a **central line or peripherally inserted central catheter (PICC) line**, they might take the sample through your line.

## What happens afterwards?

Most people go straight home after having a blood test, unless they need to stay for more tests, treatment or a clinic appointment.

Occasionally, some people feel faint or dizzy. If this happens to you, tell the person taking the blood sample. You might have to lie down until you feel better.

You might have a small bruise where the sample was taken. It might ache a little for a day or so.

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## What can I do if I am scared of having blood tests?

Most people dislike having blood tests. You might be anxious about the needle, or be uncomfortable with the sight of your own blood. Most people get used to it if they need lots of blood tests but it can still be hard.

If you're worried about having blood tests, tell your medical team. They can suggest ways to help you cope. For example:

- If you feel faint or dizzy when you have blood tests, ask if you can lie down when you have blood taken.
  - If you're concerned about the pain when the needle goes in, ask if you can have some cream to numb your skin first.
  - If you don't like the sight of blood, look away until your blood test is over.
  - If you feel anxious during the test, you could try some relaxation techniques, such as **breathing techniques** or distract yourself by listening to music. You could take someone with you to chat to help take your mind off the blood test.
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## Getting the results

Depending on what tests are done on the sample, it can take anywhere from a few minutes to a few weeks to get the results of your blood tests. Your medical team can advise you when to expect your tests results. **Waiting for test results** can be an anxious time, but it is important for your medical team to gather all the information they need in order to plan the best treatment for you.

## What do my blood test results mean?

Your medical team should tell you the results of your blood tests and explain what these results mean for you.

Blood test results usually list your own result along with a 'reference range' or 'normal range'. This is the range of values that are seen in most healthy people. If your result is lower or higher than the reference range, it might indicate a particular health issue. However, around 1 in 20 healthy people have results outside the reference range.

If you have a blood test result that is not within the reference range, it does not necessarily mean you have a health issue. Your medical team look at your individual circumstances to decide whether or not your blood test result is a cause for concern. They can explain what the results mean in your particular case.

Reference ranges often vary between different laboratories, depending on the way the test is performed and the equipment used.

Ask your medical team if anything about your results concerns you.

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## References

The full list of references for this page is available on our website. Alternatively, email [publications@lymphoma-action.org.uk](mailto:publications@lymphoma-action.org.uk) or call 01296 619409 if you would like a copy.

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✓	Evidence-based
✓	Approved by experts
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