

# About Acute Lymphoblastic Leukaemia (ALL)

## A Quick Guide

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This is a brief summary of 'About Acute Lymphoblastic Leukaemia (ALL)' from our website. You will find more detailed information on there. In this information there are sections on

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You can view this information in a larger print on our website.

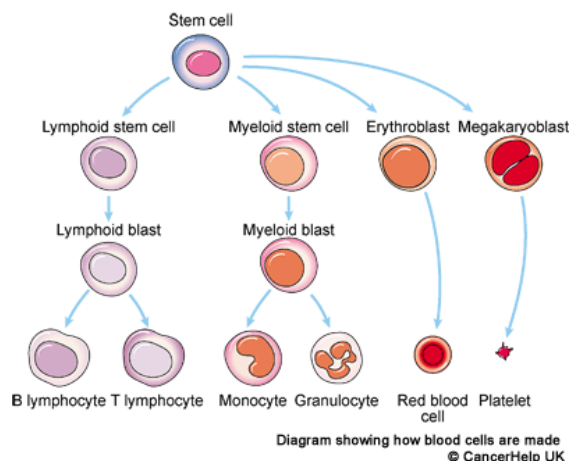
### The blood and acute lymphoblastic leukaemia

Leukaemia is a cancer of the white blood cells and bone marrow (the spongy substance in the centre of the bones where red and white blood cells and platelets are made). There are several types and subtypes. Acute lymphoblastic leukaemia (ALL) affects white blood cells called lymphocytes. There are two types of lymphocytes, B lymphocytes and T lymphocytes. They are part of the body's defense against disease, the immune response. B lymphocytes produce antibodies, helped by T lymphocytes.

### Blood cells and leukaemia

Your body makes blood cells in the bone marrow. You make blood cells in a controlled way, as your body needs them. All blood cells start as the same type of cell, called a stem cell. Stem cells then develop into one of four different types, which in turn become red blood cells, platelets, or different types of white blood cells.

The diagram below helps to explain this



In acute lymphoblastic leukaemia, the bone marrow makes too many immature white cells called lymphoblasts. These lymphoblasts are not fully developed and are not able to work normally.

### How leukaemia affects you

White blood cells help fight infection. If your body makes abnormal white blood cells, you are more likely to get infections. You can find it difficult to get rid of the infections.

If there are too many white blood cells, the bone marrow gets overcrowded and there is not enough space for other types of blood cells. So you may have a lower than normal count of red blood cells and platelets. Abnormal white blood cells can also build up in parts of the lymphatic system (the spleen and lymph nodes) and in the liver.

### Acute lymphoblastic leukaemia risks and causes

Acute lymphoblastic leukaemia (ALL) is rare overall. But it is the most common type of leukaemia in children. It is more common in males than females. We don't know what causes most cases of leukaemia. But there are some factors that may increase your risk of ALL.

The only really major risk factor that we know of is being exposed to high levels of radiation. Survivors of the atomic bomb explosions in Japan had higher than normal levels of leukaemia. Other possible risk factors include exposure to benzene, past chemotherapy, some genetic conditions and a virus called HTLV-1 (human T cell leukaemia virus) that increases the risk of developing a rare type of adult T cell ALL.

Some research seems to show that people who are breastfed or who have particular infections in childhood have a lower risk of ALL.

### Screening

Screening means testing people for early stages of a disease before they have any symptoms.

Before doctors can screen for any type of cancer, there must be an accurate test to use. The test must be reliable in picking up cancers that are there. And it must not give a positive result in people who do not have cancer. It must also be simple, safe and not too expensive.

At the moment, we don't have a screening test that is reliable enough to use for acute lymphoblastic leukaemia (ALL). So there is no UK screening programme.

### Symptoms

Many symptoms are vague. You may feel as if you have flu. Symptoms can include:

- General weakness or feeling tired (fatigue)
- High temperature (fever)
- Weight loss
- Frequent infections
- Bruising or bleeding easily
- Blood in your urine or stools
- Pain in the bones or joints
- A fine rash of dark red spots (called purpura)
- Breathlessness
- Swollen lymph glands (a network of glands found throughout the body)
- A feeling of fullness or discomfort in the tummy from a swollen liver or spleen

These symptoms are caused by too many abnormal white blood cells and not enough normal white cells, red cells and platelets. But most people with these symptoms don't have leukaemia.

### Particular symptoms of T cell ALL

A type of leukaemia called T cell ALL can cause swollen lymph glands in the centre of your chest. Or it may make the thymus gland in the neck swell. The swollen glands may press on the windpipe, causing breathlessness and coughing. Or they can press on the veins carrying blood from the head. This causes pressure in the blood vessels and makes the face, neck and arms swell and go red.

### Types of acute lymphoblastic leukaemia

Doctors divide acute leukaemias into myeloid and lymphoblastic leukaemias. Lymphoblastic leukaemia can also be called lymphocytic leukaemia. But they also divide them into even smaller groups or subtypes. This is called classification.

Doctors mostly use the World Health Organisation (WHO) system. It is based on the type of lymphocyte that has become cancerous. This system helps doctors to plan treatment and predict how well the treatment will work. There are three different subtypes:

- Pre (precursor) B cell ALL is the most common type in adults
- Mature B cell ALL - this type is identified by particular genetic changes
- Pre (precursor) T cell ALL is more likely to affect young adults and is more common in men

Your doctors look at your leukaemia cells under a microscope to find which group your leukaemia is in.

### Mixed type leukaemia

Some leukaemias seem to be a mixture of ALL and acute myeloid leukaemia (AML). Doctors call these acute biphenotypic leukaemias. Biphenotypic just means both types.

### Should I see a leukaemia specialist?

It can be very difficult for GPs to decide who may have a leukaemia and who may have something much more minor. But it is very important for ALL to be diagnosed and treated quickly. Your GP may do a blood test. If the results show signs of ALL your GP should refer you to a blood specialist (haematologist) straight away.

### NICE guidelines for urgent referral

The National Institute for Health and Care Excellence (NICE) has produced guidelines help GPs decide who needs to see a specialist and how soon. An urgent referral means you should get an appointment with a specialist within 2 weeks. If you have a combination of some of the symptoms below, your GP should take blood tests and make an urgent referral to a doctor specialising in blood diseases.

- An enlarged spleen for no obvious reason
- Unexplained extreme tiredness
- Weight loss
- Night sweats that drench you
- Itching all over
- Breathlessness
- Bruising easily
- Infections that keep coming back
- Bone pain
- Bleeding
- Pain in the tummy (abdomen)
- Swollen Lymph glands

## Questions for your doctor about acute lymphoblastic leukaemia

- What type of leukaemia do I have?
- What does this mean for me?
- How can you tell if I have acute lymphoblastic leukaemia?
- Am I more likely to get acute lymphoblastic leukaemia than anyone else?
- Someone in my family has had leukaemia. Does this mean I am more likely to get it?
- How common is acute lymphoblastic leukaemia?
- What else might be causing the symptoms I have?
- Do I need to have any tests done?
- Should I see a specialist?

**For more information**, visit our website <http://www.cruk.org/about-cancer>

You will find a wide range of detailed, up to date information for people affected by cancer, including a clinical trials database that you can search for trials in the UK. Our information is based on the best current scientific evidence and reviewed regularly by leading clinicians and experts in health and social care.

For answers to your questions about cancer call our Cancer Information Nurses on 0808 800 4040 9am till 5pm Monday to Friday.

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