

# Acute Lymphocytic Leukemia (ALL): Overview



## What is ALL?

Cancer starts when cells change (mutate) and grow out of control. The changed (abnormal) cells often grow to form a lump or mass called a tumor. Leukemia is different from most other types of cancer.

Leukemia cells don't usually form tumors. Leukemia is cancer that starts in the bone marrow. The marrow is where new blood cells are made. The bone marrow is a thick, sponge-like tissue in the center of certain bones.

When a person has leukemia, the body makes too many abnormal blood cells. They can crowd out healthy cells in the bone marrow. This leads to not making enough of all the different types of blood cells. Leukemia cells travel throughout your body in your blood. So leukemia can affect organs all over your body.

Acute lymphocytic leukemia (ALL) is when white blood cells called lymphocytes grow out of control. ALL is also called acute lymphoid leukemia and acute lymphoblastic leukemia.

ALL starts when changes happen in very early or immature forms of lymphocytes. These white blood cells help fight infections. The changed immature cells are called lymphoblasts or blasts. These cells aren't normal and don't help fight infection. In fact, people with ALL are more likely to get infections. And because the blasts fill up the bone marrow, people with ALL can also have low levels of other blood cells, such as red blood cells or platelets. This leads to other problems. Not having enough red blood cells is called anemia, which can cause tiredness (fatigue). Low platelet levels can lead to easy bleeding and bruising.

## Who is at risk for ALL?

A risk factor is anything that may increase your chance of having a disease. The exact cause of someone's cancer may not be known. But risk factors can make it more likely for a person to have cancer. Some risk factors may not be in your control. But others may be things you can change.

The risk factors for ALL include:

- Being exposed to certain chemicals
- Having had certain kinds of chemotherapy or radiation therapy in the past
- Being accidentally exposed to very high levels of radiation
- Having certain rare genetic diseases
- Being a certain age (ALL is most common in people under age 15 and older than age 70.)
- Being male

Talk with your healthcare provider about your risk factors for ALL and what you can do about them.

## Can ALL be prevented?

There's no sure way to prevent ALL. Few risk factors can be controlled to help reduce your risk. But you can limit exposure and protect yourself if you work with chemicals.

## Are there screening tests for ALL?

There are currently no regular screening tests for ALL. Screening tests are done to check for disease in people who don't have symptoms.

## What are the symptoms of ALL?

Common symptoms of ALL can include:

- Easy bleeding and bruising
- Pale skin
- Rashes of tiny flat red spots, caused by bleeding
- Fevers with no clear cause
- Feeling weak
- Feeling tired even after rest (fatigue)
- Frequent infections or infections that don't go away
- Trouble breathing or shortness of breath
- Dizziness
- Aches in bones and joints, your back, or your belly
- Swollen lymph nodes, liver, or spleen (may feel like fullness under your ribs)
- Loss of appetite
- Unplanned weight loss
- Night sweats

Many of these may be caused by other more common health problems. But it's important to see a healthcare provider if you have these symptoms. Only a healthcare provider can tell if you have cancer.

## How is ALL diagnosed?

ALL may be diagnosed when you see your healthcare provider because of symptoms. If your healthcare provider thinks you may have ALL, exams and tests will be needed to be sure. Your healthcare provider will ask you about your health history, symptoms, risk factors, and family history of disease. A physical exam will be done.

You may have 1 or more of these tests:

- Blood tests (many different kinds)
- Bone marrow aspiration and biopsy
- Spinal tap (lumbar puncture)

After a diagnosis of ALL, you'll likely need other tests. These help your healthcare providers learn more about your cancer. They can help determine the subtype of the ALL and the chromosome changes in your ALL cells. Tests can also show if the ALL is affecting any organs, such as your spleen or liver. All this information helps your healthcare team figure out the best treatment plan for you.

## How is ALL treated?

ALL tends to grow very quickly and often needs to be treated right away.

Your treatment choices depend on:

- The type of ALL you have
- Test results
- Your age
- Your overall health

- If ALL has spread to your brain or spinal cord
- Chromosome changes found in your ALL cells

The goal of treatment may be to cure you, control the cancer, or help ease problems caused by cancer. Talk with your healthcare team about your treatment choices, the goals of treatment, and what the risks and side effects may be.

Types of treatment for cancer are either local or systemic. Local treatments remove, destroy, or control cancer cells in one area. Surgery and radiation are local treatments that are rarely used for ALL.

Systemic treatment is used to destroy or control cancer cells that have traveled around your body. When taken by pill or injection, chemotherapy is a systemic treatment. This is the way most people with ALL are treated.

You may have just one treatment or a combination of treatments. Tests will be done during treatment to see how well it's working.

Treatments for ALL may include:

- Chemotherapy
- Targeted therapy
- Stem cell transplant with high-dose chemotherapy
- Radiation therapy

Chemotherapy treatment is commonly done in 3 phases:

- **Induction therapy** is done to kill as many cancer cells as possible. More than one kind of chemotherapy medicine is used and the doses are strong. Most people stay in the hospital for this part of treatment. The goal is to put the ALL in remission, which means no ALL cells can be found.
- **Consolidation therapy** is used to kill any ALL cells that may be left in the body after induction. It's also called intensification. High doses of chemo are given in cycles over 4 to 6 months.
- **Maintenance therapy** lasts about 2 years. In most cases, the medicines are pills you can take at home. Lower doses are used, so side effects tend to be better. This treatment is done to help keep ALL from coming back.

Talk with your healthcare providers about your treatment options. Make a list of questions. Think about the benefits and possible side effects of each option. Talk about your concerns with your healthcare provider before making a decision.

## What are treatment side effects?

Cancer treatment can damage normal cells, as well as cancer cells. This causes side effects like hair loss, mouth sores, appetite loss, and vomiting. Many side effects get better after treatment ends, but some can last the rest of your life.

Talk with your healthcare provider about side effects linked to your treatment. Be sure you know what to watch for. There are often ways to manage and even prevent side effects.

## Coping with ALL

Many people feel worried, depressed, and stressed when dealing with cancer. Getting treatment for cancer can be hard on your mind and body. Keep talking with your healthcare team about any problems or concerns you have. Work together to ease the effect of cancer and its symptoms on your daily life.

Here are tips:

- Talk with your family or friends.
- Ask your healthcare team or social worker for help.

- Speak with a counselor.
- Talk with a spiritual advisor, such as a minister or rabbi.
- Ask your healthcare team about medicines for depression or anxiety.
- Keep socially active.
- Join a cancer support group.

Cancer treatment is also hard on the body. To help yourself stay healthier, try to:

- Eat a healthy diet with a focus on high-protein foods.
- Drink plenty of water, fruit juices, and other liquids.
- Keep physically active.
- Rest as much as needed.
- Talk with your healthcare team about ways to manage treatment side effects.
- Take your medicines as directed by your team.

## When should I call my healthcare provider?

Your healthcare provider will talk with you about when to call. You may be told to call if any of the following occur:

- New symptoms or symptoms that get worse
- Signs of an infection, such as a fever or chills
- Side effects of treatment that affect your daily function or don't get better with treatment

Ask your healthcare provider what signs to watch for and when to call. Know how to get help after office hours and on weekends and holidays.

## Next steps

Tips to help you get the most from a visit to your healthcare provider:

- Know the reason for your visit and what you want to happen.
- Before your visit, write down questions you want answered.
- Bring someone with you to help you ask questions and remember what your provider tells you.
- At the visit, write down the name of a new diagnosis and any new medicines, treatments, or tests. Also write down any new instructions your provider gives you.
- Know why a new medicine or treatment is prescribed, and how it will help you. Also know what the side effects are.
- Ask if your condition can be treated in other ways.
- Know why a test or procedure is recommended and what the results could mean.
- Know what to expect if you do not take the medicine or have the test or procedure.
- If you have a follow-up appointment, write down the date, time, and purpose for that visit.
- Know how you can contact your healthcare provider if you have questions.

© 2000-2027 The StayWell Company, LLC. All rights reserved. This information is not intended as a substitute for professional medical care. Always follow your healthcare professional's instructions  
This information is not intended as a substitute for professional medical care. Always follow your Healthcare professional's instructions. Copyright Krames LLC.