Intensification and consolidation treatment for acute lymphoblastic leukaemia (ALL)

Treatment for acute lymphoblastic leukaemia (ALL) happens in phases. The first main phase is induction treatment. After induction treatment, you may have intensification and consolidation treatment. It involves having chemotherapy and steroids, sometimes with targeted medicines. You usually have most of your treatment as an outpatient but you may need some hospital stays. Find out more about what intensification and consolidation treatment is, what it involves, and some of the more common side effects.

This information is aimed at people in the UK. We do our best to make sure it is accurate and up to date but it should not replace advice from your health professional.

This leaflet includes addresses and QR codes that link to webpages for further support. If you cannot access the webpages, please email **information@leukaemiacare.org.uk** or call **08088 010 444**.

Summary

- Treatment of ALL happens in phases. The first main phase is induction treatment. After this, you may have intensification and consolidation treatment.
- There are several treatment options for intensification and consolidation. Your team will work out the most suitable one for you.
- Before you start your treatment, tell your team if you are still having side effects from induction therapy or if your health has changed in any way.
- Most people have intensification treatment. This usually involves having high-dose chemotherapy and sometimes a targeted medicine.
- After this, you have consolidation treatment in cycles or blocks.
- Your team will let you know how many cycles they recommend for you. Most people have between one and four. You usually have treatment on a day unit and go home afterwards.
- You usually have a combination of chemotherapy medicines, by mouth or through a drip. You usually have a steroid, and medicines through an injection in your lower back.
- Depending on the type of ALL you have, you may also have targeted treatment or antibody therapies. You might have these between cycles of consolidation treatment.
- You'll also have medicines to prevent or manage symptoms or side effects.
- You will have blood and bone marrow tests to check how well your ALL is responding to treatment.
- You may get some side effects while you are having your treatment. Some people have very few side effects, whereas other people experience more serious side effects.
- **Tell your haematology team about any side effects you have. They may be able to suggest things you can do or give you medicines to help.**

What is intensification and consolidation treatment?

Treatment for ALL happens in phases. The first main phase is induction. After induction you may have intensification and consolidation. This is sometimes called post-induction therapy. It aims to kill any leukaemia cells that might be left after induction.

If you have a stem cell transplant after induction, you do not have intensification and consolidation treatment. Most people who do not have a stem cell transplant will have intensification and consolidation therapy.

We have more **information on stem cell transplants**. Scan the QR code, or search 'stem cell transplants' at **leukaemiacare.org.uk**

There are a few different treatment options.

Your medical team will work out the most suitable treatment for you based on many factors. These include:

- Your age and overall fitness
- Your subtype of ALL
- The genetic changes and proteins in your leukaemia cells
- Any other medical conditions you have
- How you responded to induction therapy
- Your preference on how you wish to be treated

They will tell you what treatment they recommend for you and what you can expect.

Leukaemia and its treatment can be difficult to cope with. Make sure to ask your team any questions you have. Let them know if you are worried about anything.

We are here for you if you need support. Scan the QR code or search 'support and community' at **leukaemiacare.org.uk**

We have more **information on your feelings**. Scan the QR code or search 'your emotions' at **leukaemiacare.org.uk**

We have more **information on living well with leukaemia**. Scan the QR code or search 'living with leukaemia' at **leukaemiacare.org.uk**

Before treatment

Before starting intensification and consolidation treatment, you'll have tests and scans to check how well your leukaemia responded to induction therapy. You'll also have tests to make sure your blood counts have recovered and that you're fit enough to have intensification and consolidation treatment. These tests might include:

- Blood tests to check your blood cell counts and liver and kidney function
- A bone marrow test to see how your leukaemia has responded to induction therapy
- A lumbar puncture to check for leukaemia cells in the fluid around your brain and spinal cord
- A pregnancy test because some treatments can be harmful to unborn babies

Your team might suggest other tests or scans. They will let you know what they recommend and what you can expect.

The NHS have more **information on lumbar punctures**. Scan the QR code, or search 'lumbar puncture' at **nhs.uk**

Things to tell your haematology team

Before starting intensification and consolidation treatment, you should tell your haematology team if you:

- Are still experiencing side effects from your induction treatment
- Have any new health problems they are not aware of, including physical or mental health conditions
- Have or think you have an infection, or have been in recent contact with someone who has an infection
- Are due to have or recently had any vaccines
- Are pregnant or breastfeeding

Some medicines or drugs may interact with your intensification and consolidation therapy. It is important to tell your haematology team about any medicines or supplements you're taking. This includes prescribed medicines and any medicines you have bought yourself without a prescription.

Having treatment

Most people have intensification treatment followed by consolidation treatment. But if intensification treatment is not suitable for you, you may go straight to consolidation treatment.

> “Treat each day of your treatment process as a small victory. The recovery from all three treatment regimens I experienced was a marathon, not a sprint.”
>
> **Julie, diagnosed with ALL in 2019**

Intensification treatment

Intensification treatment usually lasts around 4 weeks with treatment on some days and not on others. This is followed by time to recover.

You usually stay in hospital on treatment days but may be at home the rest of the time.

Your haematology team will tell you what medicines they recommend and what you can expect. Here we list some common options.

Chemotherapy medicines

Chemotherapy medicines you may have include:

- **A high-dose chemotherapy medicine called methotrexate.** You have this through a drip.
- **A chemotherapy medicine called asparaginase.** You may have this if you have Philadelphia chromosome-negative ALL. You have it through a drip or as an injection.

Targeted medicines

Depending on the genetic changes and proteins in your leukaemia cells, you might have targeted medicines as part of intensification treatment. These might include:

- **A targeted medicine called a tyrosine kinase inhibitor (TKI).** You might have this if you have Philadelphia chromosome-positive ALL. Examples include imatinib, ponatinib and dasatinib. These are tablets or capsules that you take by mouth at home.
- **An antibody medicine called rituximab.** You might have this if you have B-cell ALL. You have it through a drip.

Consolidation treatment

You have consolidation treatment in cycles or blocks. Each cycle involves a few days or weeks when you have treatment most days. This is followed by time to recover. Each cycle is usually 3 to 6 weeks.

Your haematology team will tell you how many cycles they recommend for you. Most people have between one and four.

You usually have consolidation treatment on a day unit and go home afterwards. Sometimes, you may need to stay in hospital for the treatment days of each cycle or to manage side effects.

Consolidation treatment involves a combination of medicines. You might have different medicines in different cycles. We list some of the most common options here.

> Your haematology team might suggest a different combination of medicines. They will tell you what they recommend and what you can expect.

Chemotherapy medicines

You have a combination of chemotherapy medicines. The exact medicines vary. Your team will tell you what medicines they recommend and when and how you have them.

Some of them might be the same medicines you had for induction treatment.

You have some of these chemotherapy medicines through a drip, some as an injection and some as tablets or capsules to take by mouth. You might have different combinations in different cycles.

Common combinations include medicines called:

- Cytarabine and etoposide
- Daunorubicin, vincristine, cyclophosphamide, cytarabine and mercaptopurine
- Idarubicin and vincristine, sometimes with methotrexate and mercaptopurine
- Doxorubicin and vincristine

If you have Philadelphia chromosome-negative ALL, you might have a chemotherapy medicine called asparaginase too.

Intrathecal medicines

Most people have one or two doses of intrathecal medicine in each consolidation cycle. This is medicine you have through an injection into your lower back (a lumbar puncture). It aims to prevent or treat ALL in your central nervous system.

Most people have a chemotherapy medicine called methotrexate. Other medicines are sometimes used. Your team will tell you what they recommend for you.

The NHS have more **information on lumbar punctures**. Scan the QR code, or search 'lumbar puncture' at **nhs.uk**

Steroids

You might have steroids in some of your consolidation cycles. They can help kill leukaemia cells and help your chemotherapy medicines to work better. You might have steroids called dexamethasone or prednisolone. They are both tablets you take by mouth.

Targeted medicines

Depending on the genetic changes and proteins in your leukaemia cells, you might have targeted medicines as part of consolidation treatment.

- **If you have Philadelphia chromosome-positive ALL, you might have a targeted medicine called a TKI.** Examples include imatinib, ponatinib and dasatinib. These are tablets or capsules that you take by mouth.
- **If you have B-cell ALL and your leukaemia cells make a protein called CD19, you might have an antibody therapy called blinatumomab.** You go home wearing a pump in a bag or on a belt. Sometimes you may need to stay in hospital for a few days first.
- **If you have B-cell ALL and your leukaemia cells make a protein called CD20, you might have an antibody therapy called rituximab.** You have it through a drip into a vein.

We have more **information on blinatumomab**. Scan the QR code, or search 'blinatumomab' at **leukaemiacare.org.uk**

Medicines for symptoms or side effects

During intensification and consolidation therapy, you'll also have medicines to prevent or manage symptoms or side effects. These might include:

- Blood transfusions
- Growth factor injections to boost your blood counts
- Anti-sickness medicines
- Medicines to prevent or treat infections
- Medicines to protect your bladder, kidneys and gut

Monitoring your treatment

You will have frequent blood tests during treatment to check your blood cell counts and liver and kidney function. These check how your body is coping with treatment.

You may also have other tests and scans, such as bone marrow tests or a lumbar puncture.

Measuring your response to treatment

Your team will tell you how often you will have blood and bone marrow tests to check how well your ALL is responding to treatment.

The tests will measure:

- Your blood cell counts. This is sometimes called your **haematological response**. It checks if your blood cell counts have returned to normal and whether specialists can see any leukaemia cells under a microscope.
- The level of leukaemia markers or leukaemia genetic changes in your white blood cells. This is called your **molecular response**. It can detect very low levels of leukaemia cells. This is called **measurable residual disease (MRD)**.

The results of these tests help your haematology team work out the most suitable next treatment for you.

If you are MRD negative, it means sensitive molecular tests cannot find any leukaemia cells in your body.

We are here for you if you need support whilst you are waiting for your results. Scan the QR code or search 'support and community' at **leukaemiacare.org.uk**

Precautions during treatment

There are some precautions to be aware of when you are having intensification and consolidation therapy.

- Some treatments can cause side effects like dizziness, drowsiness, blurred vision or make you feel tired or confused. Take care if you are driving or operating tools or heavy machinery.
- Some treatments can change the colour of your pee. This should only last for a few days. If you are worried, or have other problems with your pee, tell your haematology team.
- Some treatments can make your skin more sensitive to the sun. Try to avoid the sun at peak times, if you can. If you need to go outside, try to cover up, wear protective clothing and use sunscreen with a high protection factor (SPF 50) on exposed areas.
- Some treatments can increase your risk of developing another type of cancer. Tell your team if you develop any signs or symptoms of cancer. It is important to go to any screenings you may be invited to.

Cancer Research UK have more **information on the signs and symptoms of cancer**. Scan the QR code, or search 'signs and symptoms' at **cancerresearchuk.org**

Contraception

The medicines used for intensification and consolidation treatment may harm unborn babies.

- If you could get pregnant, it is important to use effective contraception. You need to do this while you are having treatment, and possibly for some time after you stop treatment.
- If you could make someone pregnant, it is important to use effective contraception. You need to do this while you are having treatment, and possibly for some time after you stop treatment.
- If you think you might be pregnant, tell your haematology team as soon as possible. They may recommend stopping treatment for a while. They could also recommend switching to a different treatment.
- If you are planning to get pregnant, or make someone pregnant, tell your haematology team. They can discuss your treatment options with you.

How long you need to use contraception for varies based on what treatment you are having. Your haematology team will let you know how long to use contraception and what to do if you are pregnant or planning to get or make someone pregnant.

Breastfeeding

Scientists are not sure if medicines used for intensification and consolidation treatment pass into breast milk. If they do, they could be a risk for breastfed babies and children. You should not breastfeed while you are having treatment and possibly for some time after you stop treatment.

How long to avoid breastfeeding can vary depending on what treatment you are having. Your haematology team will let you know.

Possible side effects

Like all medicines, intensification and consolidation treatment can cause side effects. Some of these may be serious. Side effects are different for everyone, and we cannot predict what side effects you may or may not get.

Tell your haematology team about any side effects you have. They may be able to suggest things you can do or give you medicines to help.

If you are getting side effects that are difficult to cope with, your haematology team might suggest:

- Treatment to help manage your side effects
- Lowering your dose of treatment
- Changing how often you have treatment
- Stopping one or more of your medicines

Here we cover some of the common short-term side effects of ALL treatment. You may experience some of these side effects, or none at all. You may have different side effects altogether.

Your team can give you information about the specific treatments you are having and what to expect. They will also give you more information about side effects and what to look out for. Make sure to ask them any questions you have if you are unsure.

Infections

ALL and its treatment can cause a low level of white blood cells called neutrophils. This is called neutropenia. It means your body can't fight infections as well as usual. So you have a higher chance of getting infections, and any infections you do get may be more serious.

Tell your medical team straight away if you think you have an infection. Signs include:

- A high temperature (37.5°C or 38°C or higher). You may need a thermometer so you can check your temperature.
- Aching muscles, shivering or chills.
- Sore throat, blocked or runny nose or cough.
- Burning or stinging when you pee, or peeing more often than usual.
- Diarrhoea, being sick or tummy pain.
- Headache or stiff neck.
- Pain or redness around any cuts, wounds or drips.
- Feeling very tired or generally unwell.

Infections can get worse quickly if you have a weakened immune system, so it is important to get treatment as soon as possible.

Your haematology team should tell you who to contact if you think you have an infection. If you can't contact your team, you should go to your nearest emergency department and let them know you are having chemotherapy.

It is also important to contact your team if you feel unwell, even if your temperature is normal.

Lowering your risk of infection

If your white blood cell count is low, there are things you can do to lower your risk of getting an infection. These include:

- Washing your hands frequently
- Avoiding touching your face with your hands
- Avoiding crowded spaces and considering wearing a mask
- Avoiding people who are unwell
- Storing and preparing food correctly to reduce the risk of food poisoning
- Regularly cleaning surfaces you touch a lot, like your mobile phone, light switches or door handles

Your haematology team might also prescribe medicines to help prevent infections.

Low blood counts

ALL and its treatment can cause very low blood cell counts. You will have regular blood tests so your team can monitor this.

If your red blood cell count is low, you may feel tired and breathless. You might get a fast or uneven heart rate. You may have blood transfusions to top up your red blood cells.

If your platelet count is low, you might bleed or bruise easily. You might get small blood spots on your skin. You may have platelet transfusions to top up your platelets.

Tell your medical team straight away if you have signs or symptoms of low blood cell counts.

Hair loss

Some treatments can lead to hair thinning or complete hair loss. This can be very emotional because your hair may feel like an important part of you. It can be distressing, but this feeling may pass with time.

It can help to be prepared, and to tell your loved ones you might lose your hair. This can help them understand and support you better, as they know what's going on. If you have children, it can help to get them to touch your head and ask questions so they know it is normal and not something bad.

You may wish to cut your hair short or shave it when the hair loss starts. This can give you a feeling of control and reduce the emotional impact of it falling out. It can also help reduce itching and help with not having to wash your hair. You could also cover your hair loss, if you choose to. There are lots of options like hats, headscarves, wraps, turbans or wigs. Do what feels best for you and allows you to feel the most confident.

Cancer Hair Care UK has more **information on hair loss**, including how to care for Afro-textured hair during chemotherapy. Scan the QR code, or visit **cancerhaircare.co.uk**

Nerve damage

Some treatments for ALL can lead to nerve damage.

Tell your medical team straight away if you think you have nerve damage. Signs include:

- Pins and needles sensation
- Burning, tingling or numbness
- Muscle cramps
- Problems with intricate movement (like finding it hard to write or button a shirt)
- Struggling with your balance
- Dizziness or blurry vision
- Constipation
- Finding it hard to pee

Nerve problems can continue even after treatment finishes, but they do usually get better with time. Sometimes, they may not get better. Your team can help provide you with support and ways to manage any side effects you may get.

Mouth ulcers, oral thrush and sore mouth

Mouth problems are a common side effect of many cancer treatments. You may get mouth ulcers, sores, or oral infections, which can be painful.

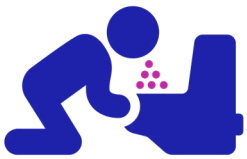
It's important to let your medical team know if your mouth is sore. They may be able to give you mouthwashes, gels or painkillers, as well as medicines to prevent mouth infections.

To cope with sore mouth or other mouth problems you could try:

- Brushing your teeth with a soft toothbrush at least twice a day.
- Using an antimicrobial mouthwash. Alcohol mouthwashes can dry your mouth, so it is best to avoid these.
- Sucking on ice chips and drinking water often.
- Chewing food slowly and drinking plenty of fluid with meals.
- Avoiding hot, spicy, acidic or hard foods, like crusty breads, pineapple or lemons.

Tell your team if you are having problems with your mouth and if you are struggling to manage. They can help you and provide support.

Feeling or being sick



Feeling sick or being sick is a common side effect of many cancer treatments. Let your medical team know if you are feeling or being sick. They may be able to suggest things to help or give you medicines to prevent you feeling sick.

Anti-sickness medicines work best the sooner they are taken, so tell your team straight away.

To help with feeling or being sick, you could try:

- Drinking plenty of fluids. This can include water, broth, fruit juices, ginger ale, tea or sports drinks.
- Avoiding foods that are greasy, spicy, sweet or have a strong smell.
- Eating little but often. Having smaller meals and snacks when you are feeling hungry can help.
- Eating cold and room temperature foods. Try foods like toast, rice, plain pasta, yoghurt, crackers and biscuits.
- Avoiding lying down after eating.

Other short-term side effects

This is not a complete list of side effects you might get. Your haematology team will give you information about your exact treatment, including possible side effects.

Other common side effects of intensification and consolidation therapy include:

- Changes in your liver function. Your team might notice this on a blood test. If this happens, your team might adjust your treatment.
- Problems with your pancreas. You might get tummy pain, swelling or bloating. You may also feel sick or be sick.
- High blood sugar levels. Your team might notice this on a blood test. You may get symptoms like feeling thirsty, tired, or needing to pee often.
- High cholesterol levels. Your team might notice this on a blood test.
- Indigestion, heartburn, tummy pain or diarrhoea. Your team can give you medicines to help.
- Headaches.
- Changes in your mood or mood swings.
- Swelling of your hands, feet, ankles and tummy due to your body holding on to water.
- Itchy, dry, flaky or scaly skin.
- Muscle spasms, cramps or pain in your muscles, joints or bones.

When you finish treatment

You will have blood tests and sometimes bone marrow tests after your last cycle of consolidation treatment. This is to check your response to treatment and your blood counts.

If you have responded well to treatment, you will move to the next phase of treatment. This is normally called maintenance treatment.

If consolidation treatment hasn't worked as expected, this is known as refractory ALL. Your haematology team will talk to you about your options.

We have more information on:

Maintenance treatment

Refractory ALL

Scan the QR codes, or search 'maintenance treatment for ALL' or 'refractory ALL' at **leukaemiacare.org.uk**

We'd like to thank the expert reviewers and patient contributors who helped us with this information:

- Dr Clare Rowntree, haematologist
- Dr Eleni Tholouli, consultant haematologist
- Caroline Kerr, clinical nurse specialist
- Patient reviewers, Julie, Karis and Maria

Tell us what you think of our information.

Follow the link or scan the QR code to complete a **short survey** about how we can improve our information.

We used an AI tool to help identify relevant evidence sources for this webpage, such as scientific journals and clinical guidelines. A human checked the reliability of these sources. Contact us if you'd like a list of the sources we used.

Email **information@leukaemiacare.org.uk** or call **08088 010 444**.

Need support or more information?

- Scan the QR code or visit **leukaemiacare.org.uk**
- Call our freephone helpline on **08088 010 444**
- Send a WhatsApp to **07500 068065**
- Email **support@leukaemiacare.org.uk**

Trusted Information Creator
Patient Information Forum

Version: 2. Reviewed 08/2026. Next review: 08/2029. Leukaemia Care is registered as a charity in England and Wales (no. 1183890) and Scotland (no. SCO49802). Company number: 11911752 (England and Wales). Registered office address: One Birch Court, Blackpole East, Worcester, WR3 8SG