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Acute Myeloid Leukaemia

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About this booklet

This booklet is about a type of leukaemia called acute myeloid leukaemia (AML). It is for anyone who has been diagnosed with AML, or who wants to know more about it. It also has information for carers, family members and friends.

The booklet explains:

- what AML is
- symptoms and how AML is diagnosed
- how AML is treated
- coping with AML

We hope it helps you deal with some of the questions or feelings you may have. We cannot give advice about the best treatment for you. You should talk to your doctor, who knows your medical history.

The blood and AML

What is leukaemia?

Leukaemia is a cancer of the blood cells. If you have leukaemia, your body makes some abnormal blood cells. These leukaemia cells behave differently from healthy blood cells. There are different types of leukaemia. This information is about acute myeloid leukaemia (or AML). Acute means that it develops quickly and needs to be treated straight away.To help you understand AML and its treatment, it is useful to know how blood cells are made and what they do.

The blood

Blood is made up of blood cells, which move around the body in a liquid called plasma.

Blood cells are made in the bone marrow. This is a spongy material found inside our bones. Some bones, such as the pelvis and backbone (spine), contain a type of bone marrow that makes blood cells.

Normally, your bone marrow makes millions of new blood cells every day to replace ones that are old or damaged. This keeps the numbers of each type of blood cell at the right level so your body can work properly.

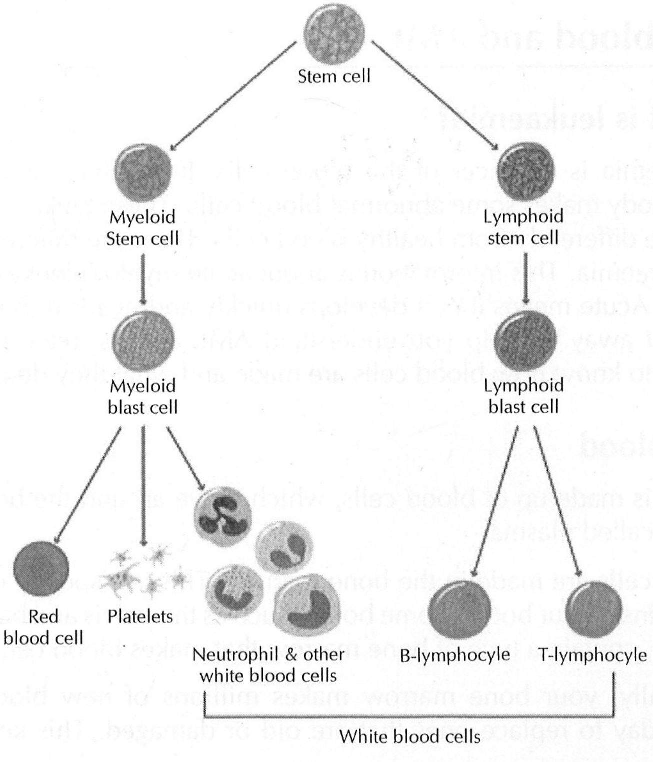
Every blood cell grows from a 'stem cell' in the bone marrow. These "stem cells" are the parent cells in bone marrow

There are two types of blood stem cells:

- lymphoid stem cells – make a type of white blood cell called lymphocytes
- myeloid stem cells – make red blood cells, platelets and all other types of white blood cell. Myeloid stem cells are the cells affected in AML.

The stem cell divides to make an early stage of the blood cell called a blast. Blast cells are young and not fully developed. They cannot do the job of a normal cell. Usually, they stay in the bone marrow until they are fully developed.

How blood cells divide



When a cell is ready, it moves from the bone marrow into the blood to do different jobs:

- Red blood cells contain haemoglobin (Hb). This carries oxygen from your lungs to all the cells in your body.
- Platelets are very small cells that help blood to clot. They prevent bleeding and bruising.
- White blood cells help fight and prevent infection. There are several types of white blood cell. The two most important types are neutrophils and lymphocytes.

Measuring your full blood count

The levels of these cells in your blood can be measured with a blood test called a full blood count (FBC). The figures below are a guide to the levels usually found in a healthy person.

Type of cell	Levels found in a healthy person
Red blood cells – measured in haemoglobin (Hb) levels	130–180g/l (men)
	115–165g/l (women)
Platelets	150–400 x 10^9/l
White blood cells (WBC)	4.0–11.0 x 10^9/l
Neutrophils	2.0–7.5 x 10^9/l
Lymphocytes	1.5–4.5 x 10^9/l

These numbers can vary depending on:

- your age
- whether you are male or female
- your ethnic background.

Because of this, your hospital may use slightly different levels to the table on the previous page. Your doctor or nurse can explain what levels they use.

The numbers might look complicated when they are written down, but doctors and nurses often use them in a simple way. For example, you may hear them saying things like, 'your haemoglobin is 140' or 'your neutrophils are 4'.

Most people with leukaemia soon get used to these numbers and what they mean. But you can always ask your medical team to explain in more detail.

Acute myeloid leukaemia (AML)

Acute myeloid leukaemia (AML) is a cancer that affects myeloid cells.

Normally, myeloid stem cells make blasts that develop into healthy blood cells. But in AML, some blasts are abnormal and do not develop fully. These abnormal blasts are called leukaemia cells. In most types of AML, blasts that should become white blood cells are affected. In less common types of AML, blasts that should become platelets or red blood cells are affected.

The abnormal blasts cannot do the job of a normal cell. They also fill up the bone marrow. This means there is not enough space to make the usual numbers of healthy white blood cells, red blood cells and platelets your body needs.

Types of AML

AML can be grouped into different types. This depends on:

- the type of blood cells affected
- gene changes inside the leukaemia cells
- whether you had a blood disorder called myelodysplasia before developing AML
- whether the AML is linked to previous chemotherapy treatment (called treatment-related AML or t-AML).

Treatment for most types of AML is usually the same. A type called acute promyelocytic leukaemia (APL) is treated differently. APL affects about 6 in 100 (6%) adults with AML.

Causes and risk factors

The cause of AML is not known. But research is going on all the time to find out more about it. Like other cancers, AML is not infectious and cannot be passed on to other people.

There are some things that may increase your risk of developing AML. Having one or more risk factors does not mean you will get AML. People with no known risk factors can still develop it.

Age

AML is more common in people aged 60 and over.

Radiation

Exposure to very high radiation levels increases the risk of developing AML. For example, there might be high levels of radiation after a nuclear accident. Very few people will be exposed to radiation levels high enough to increase their risk.

Exposure to chemicals

Rarely, AML is diagnosed in people who have been exposed to certain chemicals over many years. This includes people who have worked in jobs using benzene and other solvents.

Smoking

Smoking increases the risk of developing AML. Researchers think this may be because there is benzene in cigarette smoke.

Chemotherapy and radiotherapy

Rarely, people who have had certain types of chemotherapy or radiotherapy develop AML a few years later. This is called secondary leukaemia or treatment-related AML.

Blood disorders

People with certain blood disorders, such as myelodysplasia or myeloproliferative neoplasms (MPNs) which include essential thrombocythaemia (ET), polycythaemia vera, and myelofibrosis, have a higher risk of developing AML. These specific types of AMLs are called as "secondary leukaemia".

Rarely, chronic myeloid leukaemia (CML) may change (transform) into AML.

Genetic conditions

People with certain genetic conditions have a higher risk of developing leukaemia. This includes Down's syndrome and Fanconi's anaemia.

Family history

Sometimes AML or another blood cancer affects several relatives in a family. If you are worried about leukaemia in your family, talk to your GP or specialist doctor.

Symptoms of AML

Most symptoms of acute leukaemia are caused by leukaemia cells filling the bone marrow. This means healthy blood cells do not move into the blood as normal.

Low numbers of red blood cells

A low number of red blood cells is called anaemia. If you have anaemia, you might:

- look pale
- feel very tired
- feel short of breath
- feel dizzy or lightheaded
- have palpitations (feel your heart is beating quickly).

Low numbers of white blood cells

If you have too few healthy white blood cells, you might:

- keep getting infections
- feel unwell and run down
- have a sore throat or mouth
- have a fever or high temperature.

Low numbers of platelets

This can cause unusual bleeding such as:

- bruising without any obvious cause
- bleeding gums

- nosebleeds
- blood spots or rashes on the skin (petechiae)
- heavy periods in women.

Other symptoms

Other symptoms may include:

- having a fever and sweats at night
- unexplained weight loss
- swollen lymph nodes
- bone pain
- swelling in the liver or spleen, causing a swollen or uncomfortable tummy.

Some people have no symptoms and the leukaemia is found after a routine blood test. More often, symptoms appear over a few weeks and people feel ill quite quickly.

If you have any of these symptoms, you should always tell your doctor and have them checked. But remember, these symptoms can also be caused by many other illnesses.

Diagnosing AML

How AML is diagnosed

Some people are diagnosed with AML after being taken to hospital with symptoms developed quickly. Others go to see their GP about symptoms.

Your GP will examine you and arrange a blood test. If the result of the test is abnormal, your GP or a haematologist from the local hospital will contact you. A haematologist is a doctor who specialises in treating blood problems. They will arrange for you to be seen quickly at the hospital for further tests and possible treatment.

If you think you may be pregnant, let your doctor know. Some tests and treatments for leukaemia can be harmful to an unborn baby. Pregnant women can often still have tests and some treatment for leukaemia. But it is important to talk to your doctor so they can plan your care safely.

At the hospital

The haematologist will ask you about your general health and any medical problems you have had. They will examine you and do a blood test to:

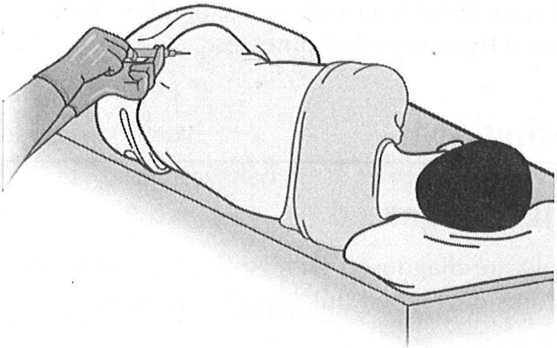
- check the numbers of the different types of blood cell – called a full blood count
- look for leukaemia cells.

If the haematologist thinks you might have leukaemia, they will arrange to take a sample of your bone marrow.

Bone marrow biopsy

A doctor or nurse takes a small sample of bone marrow from the back of the hip bone (pelvis). The sample is sent to a laboratory to be checked for abnormal cells.

Having a bone marrow biopsy



You may have this test on a ward or in an outpatient clinic. It takes about 20 to 30 minutes.

Before the bone marrow sample is taken, you have local anaesthetic injections around the area to numb it. You can ask for medicine to help you relax.

The doctor or nurse passes a needle through the skin into the bone. They then draw a small sample of liquid from inside the bone marrow into a syringe. This is called a "bone marrow aspirate". It can feel uncomfortable for a few seconds when the marrow is being taken.

They may also take a small sample of the spongy bone marrow tissue. This is called a "trephine biopsy". To do this, the doctor or nurse passes a thicker hollow needle through the skin into the bone marrow. When they take the needle out, it contains a small piece of bone marrow tissue.

You may feel bruised or sore for a few days after this test. Mild painkillers can help. If the pain gets worse, or you notice any bleeding from the area, tell your doctor.

Testing blood and bone marrow samples

Your blood and bone marrow samples are looked at under a microscope in the laboratory. Then tests are used to find out more about any abnormal cells. Tests may include the following.

Immunophenotyping

This is also called as flow cytometry. This test looks for specific proteins on the surface of cancer cells or leukaemia cells. It helps identify whether cells are normal or abnormal and thereby tells the type of leukaemia. This test can also be used to look for very small amounts of leukaemia during, and at the end of, treatment.

Cytogenetics and molecular tests

These tests look for gene changes inside the leukaemia cells. Cytogenetic means studying the chromosomes in cells. Chromosomes carry all the genetic information for each of our cells. The results tell your doctor the AML subtype you have and which drug treatments are likely to work well for you.

Tests may include:

- Conventional cytogenetics / conventional karyotyping – this is where the chromosomes in leukaemia cells are examined
- FISH (fluorescence in situ hybridisation) – this looks for specific chromosome changes in cancer cells. FISH looks at about 200 cells.
- PCR (polymerase chain reaction) – this is a very sensitive test that looks for specific gene changes that cannot be seen under a microscope. This test can also be used to look for very small amounts of leukaemia during, and at the end of treatment.

- Next-generation sequencing (NGS) – this describes techniques that allow doctors to quickly test for many different gene changes in the leukaemia cells at the same time. It can help doctors find different markers or proteins that are helping the leukaemia cells grow. It can also help them find medicines to block this. NGS looks at about a million or more cells.

Your test results

Your doctor or nurse can explain which tests will be useful for you. The results give your team more information about the exact type of AML you have, and help them plan the best treatment for you. You may get some test results within a few hours. But it will probably be several days before all your results are ready. This can be an anxious time. It may help to talk to a family member, close friend or your specialist nurse.

After diagnosis

Checking your general health

Your doctor will also arrange for you to have tests to check your general health. This will include blood tests for infections such as HIV and hepatitis.

You may also have:

- x-rays / CT scans to check if there are any infections in lungs
- 2D echo to check heart function before starting treatment
- more blood tests to check how your liver and kidneys are working.

Your doctor or nurse can give you more information about any tests you need. The results help them plan your treatment safely.

Tissue (HLA) typing

You will have this blood test if you might need a donor stem cell transplant as part of your treatment. Your healthcare team use information about your tissue type to find a possible stem cell donor for you.

Your tissue type is made up of different proteins on the surface of your cells. These are called human leukocyte antigen (HLA) markers. Doctors use your HLA markers to match you with a donor. They compare your tissue type with close relatives, or with volunteer unrelated donors on a registry. Doctors look for the best matched donor available for you.

Lumbar puncture

This test may be advised by your doctor only under special circumstances in AML. A lumbar puncture is a test that checks for leukaemia cells in the fluid around the brain and spinal cord. You may have this test but it is not always needed. Together, the brain and spinal cord are called the central nervous system (CNS). The fluid is called cerebrospinal fluid (CSF).

You usually have a lumbar puncture done on the ward or in the day unit. The doctor numbs the area of skin over the lower spine with a local anaesthetic injection. They then feel for a space between two bones (vertebrae) in the lower spine and put in a thin needle. They collect a sample of CSF and send it to the laboratory for tests.

A lumbar puncture can also be used to inject chemotherapy into the CSF. This is called intrathecal chemotherapy. It may be done to treat leukaemia in the CNS.

After the lumbar puncture, the doctor takes the needle out and puts a small dressing over the skin.

Most people do not have any problems with this test, although it may cause tingling down the back of your legs when the needle is put in. This is normal and does not cause any damage, but it can be worrying if you are not expecting it. Some people have a headache afterwards. It can help to drink plenty of water before and after the test. You can ask your nurse for some mild painkillers.

Treating AML

Treatment overview

Treatment for AML usually starts as soon as possible after diagnosis. It will depend on different factors, such as:

- the subtype of AML
- whether there are gene changes in the leukaemia cells
- your general health.

The main aim of treatment is to get rid of the leukaemia cells as quickly as possible, so your bone marrow can work normally again. This is called remission. You may have different treatments:

- Chemotherapy is the main treatment for AML for most people.
- ATRA and arsenic trioxide are non-chemotherapy drugs used to treat APL, at times in combination with chemotherapy.
- A stem cell transplant may be done using stem cells from a donor. This treatment is given to reduce the risk of AML coming back or if AML comes back.
- Targeted therapy may be given with chemotherapy or on its own. This depends on the type of gene change in the leukaemia cells.

Phases of treatment

Intensive treatment

The aim of intensive treatment is to cure AML. It is usually given in two main phases.

- Induction phase – treatment is given to get rid of the leukaemia cells in your blood and bone marrow.
- Consolidation phase – treatment is given to get rid of any remaining leukaemia cells to prevent the leukaemia coming back.

In each phase, you may have different treatments. You will have some treatment as an inpatient in hospital. You will stay in hospital for a few weeks at a time. You may stay in for longer if you need treatment to manage side effects, or if you have a stem cell transplant. Your doctor and nurse will explain your exact treatment plan and what to expect in each phase.

Non-intensive treatment

Non-intensive treatment uses lower doses of chemotherapy or other drugs to control AML for as long as possible. You may be able to have some treatments as an outpatient and go home the same day.

You may have non-intensive treatment if you have other medical conditions or health problems. Non- intensive treatment has less risk of serious side effects and may be easier to cope with.

Your doctors will take regular blood and bone marrow samples to see how treatment is working. This helps them decide on any further treatment you may need.

Having tests during treatment

During treatment, your healthcare team will take blood and bone marrow samples to check for leukaemia cells.

The results of these tests help doctors:

- see how well your treatment has worked
- make decisions about your next treatment
- see if the leukaemia is more likely to come back.

If the tests show very small numbers of leukaemia cells, or none at all, the doctor will say you are in remission.

Sometimes very small numbers of leukaemia cells are still found after chemotherapy. This is called minimal residual disease (MRD).It can affect the treatment you need to have.

If AML comes back

If AML comes back after treatment, it may be possible to have more treatment with chemotherapy and targeted or immunotherapy drugs. The aim is to get a second remission. If remission is achieved, your doctor will advise you to go ahead with a stem cell transplant.

Supportive care

Leukaemia and treatment for leukaemia can cause symptoms and side effects. Your doctor will monitor these and give you supportive treatment to prevent or manage them.

This may include having:

- red blood cells or platelets given into a vein if you have low numbers of these cells – called a blood or platelet transfusion
- drugs to prevent infections if you have low numbers of healthy white blood cells
- drugs to prevent or manage side effects of treatment.

Sometimes leukaemia treatment does not get rid of the leukaemia or cannot control it any longer. You may have supportive or palliative care to help control any symptoms.

Planning your treatment

Your treatment will be planned by a team of specialists. This team is called the multidisciplinary (MDT) team. It usually includes:

- one or more haematologists – doctors who specialise in blood cancers and disorders
- specialist haematology nurses – who give information and support
- a transplant consultant – an expert in managing and arranging stem cell transplants
- radiologists – who specialise in scans and x-rays
- pharmacists – who specialise in chemotherapy and other drugs.

The team may also include other healthcare staff, such as social workers, dietitians, counsellors and physiotherapists.

Your treatment plan may depend on:

- the type of AML you have
- your general health.

During your treatment, someone from the MDT will be your main contact. Often this is a specialist haematology nurse. Their name and contact details should be recorded in your case notes and given to you. If you have questions or need advice about your treatment, they will be able to help.

Talking about treatment decisions

Before you have any treatment, your doctor will explain its aims. They will usually ask you to sign a form saying that you give permission (consent) for the hospital staff to give you the treatment. No medical treatment can be given without your consent. Before you are asked to sign the form, you should be given full information about:

- the type and extent of the treatment
- its benefits and disadvantages

- any significant risks or side effects
- any other treatments that may be available.

If you do not understand what you have been told, tell the staff straight away. Leukaemia treatments are complex, so it is common to need to go over it again. It is a good idea to have a family member or friend with you to help you remember the discussion.

You will usually be given written information about your treatment, including a treatment schedule

Making treatment decisions

Treatment for AML usually has to start quickly. If you do not feel ready to make a decision about your treatment, ask your doctor how long you can have to think about it.

Without treatment, acute leukaemia is life-threatening. You may decide not to have treatment even when your doctor advises you to have it. If you refuse treatment, your decision must be respected. But your doctor needs to make sure you have all the information you need to make your decision. You need to understand all your treatment options and what will happen if you do not have the treatment. Always talk to your doctor about any concerns you have, so they can give you the best advice.

Benefits and disadvantages of treatment

Treatment for leukaemia has possible benefits but also possible risks. You may want to think carefully about these before you make a decision about your treatment plan.

You may be offered treatment that aims to cure the leukaemia. This may involve some disadvantages such as:

- some longer stays in hospital – often for several weeks at a time
- short-term side effects that may need treatment
- a risk of permanent side effects such as infertility.

Many people decide to have this treatment because the chance of curing the leukaemia outweighs these disadvantages. However, there is still a risk the leukaemia may not be cured.

Some people will have treatment that aims to control the leukaemia rather than cure it. This involves lower doses of chemotherapy and a lower risk of side effects. It may also mean less time in hospital. These benefits make this treatment suitable for people who:

- are not fit enough to cope with more intensive treatment
- do not want the risks of more intensive treatment.

However, this treatment is less effective. The leukaemia is less likely to go into remission or to stay in remission.

There is no right or wrong way to feel about the benefits and disadvantages of treatment. Everyone has different things that are important to them. Your doctor or nurse is the best person to talk to for clear and detailed information about your treatment.

Giving your consent

Before you have any treatment, your doctor will explain its aims. They will usually ask you to sign a form saying that you give permission (consent) for the hospital staff to give you the treatment. No medical treatment can be given without your consent. Before you are asked to sign the form, you should be given full information about:

- the type and extent of the treatment
- its advantages and disadvantages
- any significant risks or side effects
- any other treatments that may be available.

If you do not understand what you have been told, tell the staff straight away. Leukaemia treatments are complex, so it is normal to need something explained again. It is a good idea to have a family member or friend with you when the treatment is explained, to help you remember the discussion.

Most doctors will give you written information about your treatment, including a treatment schedule. This can help you understand your treatment and plan when you may be at home or staying in hospital. If you are not given a schedule, you can always ask for one.

You may sometimes feel that hospital staff are too busy to answer your questions, but it is important for you to know how the treatment is likely to affect you. The staff should be willing to make time for your questions.

Second opinion

A second opinion is an opinion from a different doctor about your treatment. It can take some time to arrange, and treatment for AML usually needs to be started as soon as possible.

If you think you want a second opinion, talk to your specialist doctor or GP first. Tell them your concerns or ask them to explain anything you do not understand. This might help reassure you.

You may have to travel to another hospital to get a second opinion. Getting a second opinion could delay your treatment. Check with your doctor if this delay could be harmful to you. If the doctor you see for the second opinion gives you the same advice, this can reassure you. Sometimes they give you other treatment options to think about.

Before treatment starts

After you are diagnosed with AML, your doctors will want to start treatment straight away. Your doctor or specialist nurse will talk to you about what to expect. You may have questions you want to ask them or concerns you want to talk over. It is important to talk about these with your hospital team.

Where treatment is given

You will usually have your treatment in a hospital that offers specialist treatments, such as chemotherapy and stem cell transplants. These are usually larger multispeciality hospitals or tertiary cancer hospitals, so you may have to travel for your treatment and appointments.

Fertility

Some drugs used to treat leukaemia can affect being able to get pregnant or make someone pregnant (your fertility). Your doctor or nurse will talk to you about this before you start treatment. They will explain how your fertility may be affected. Treatments such as stem cell transplants have a high risk of causing permanent infertility. If you have a partner, you may want them to be involved in these discussions. This is a lot to think about when you are already dealing with leukaemia.

You may be able to have fertility preservation before treatment. But because treatment needs to start quickly, this is not always possible.

It may be possible to collect and save sperm. But the process for collecting and storing eggs takes time. This would delay the start of your treatment and may not be safe for you.

Contraception

Even if your treatment is likely to affect your fertility, you may still be able to get pregnant or make someone pregnant. You should use contraception to prevent a pregnancy if you have sex during treatment and for several months after treatment finishes. The drugs used to treat leukaemia can be harmful to an unborn baby. Ask your doctor or specialist nurse for more information.

Getting your line put in

Many treatments for AML are given into your bloodstream through a line put into a vein. Before you start your treatment, you have a central line or PICC line put in:

- A central line is a long, thin tube that goes into a vein in the chest.
- A PICC line goes into a vein in the upper arm. It is threaded through to a vein in the chest.

These are used to give you chemotherapy and other treatments. They stay in place for several months. Your doctor or nurse can take blood samples from your line. You can have antibiotics, fluids and blood transfusions through it too.

A doctor or nurse puts your line in. They use a local anaesthetic to numb the area first. You may also be given a sedative to help you relax. The doctor or nurse will explain how to look after the line. They will arrange any support you need. If you are worried about your line, contact your team in the chemotherapy clinic or on the ward.

We have more information about lines on our website and in our booklet Chemotherapy.

Chemotherapy

Chemotherapy uses anti-cancer (cytotoxic) drugs to destroy leukaemia cells. Cytotoxic means toxic to cells. The drugs disrupt the way leukaemia cells grow and divide, but they also affect normal cells.

Chemotherapy is the main treatment for AML. You usually have it in 2 main phases. You may also have a targeted therapy drug along with chemotherapy.

If you are not well enough to cope with intensive chemotherapy, your doctor may advise less intensive chemotherapy.

If you have acute promyelocytic leukaemia (APL), your treatment will include drugs called All-Trans Retinoic Acid (ATRA) or Arsenic Trioxide (ATO). We have more information about treating APL.

How you have chemotherapy

You have several different chemotherapy drugs during treatment. You have most of the drugs through your line into a vein (intravenously). Some people may also have chemotherapy as a small injection under the skin.

Rarely, chemotherapy is given into the fluid around the spine, using a lumbar puncture. This is called intrathecal chemotherapy.

We have more information about chemotherapy on our website and in our booklet Chemotherapy.

Induction treatment (Initial chemotherapy)

The aim is to quickly get rid of the leukaemia cells. This allows your bone marrow to work normally again. This is called remission. You usually need to stay in hospital during treatment and possibly for a few weeks after until your blood cells recover. You will need a lot of support from nursing and medical staff. They will monitor you closely for side effects, such as infection. You may need blood or platelet transfusions because your blood cell count will be low for a few weeks. You may also need antibiotics and antiviral drugs to prevent or treat infection. This is called supportive therapy.

You may need 1 or 2 cycles of induction treatment. While chemotherapy typically lasts for 7 days, count recovery takes approximately 3 weeks, and you doctor will advise you to stay admitted during this time. Induction chemotherapy usually includes:

- cytarabine
- daunorubicin.

Sometimes you have cytarabine along with another chemotherapy drug called fludarabine (Fludara®).

Depending on the results of tests on the leukaemia cells, you may also have targeted therapy drugs.

You may have a chemotherapy drug called liposomal cytarabine–daunorubicin (Vyxeos®) if:

- AML is linked to previous cancer treatment or to myelodysplastic syndrome (MDS)
- the leukaemia cells have certain genetic changes.

Testing for remission

After chemotherapy, your aspirate, marrow and blood cells start to recover. You will have a bone marrow aspirate and blood tests to check whether you are in remission. If tests show very small numbers of leukaemia cells (minimal residual disease) or none, your doctor will say you are in remission.

Consolidation treatment

You usually have consolidation treatment after 1-2 cycles of induction, if you are in remission. It aims to get rid of any remaining leukaemia cells and prevent the leukaemia coming back. It starts when your blood cell count is normal. You may have consolidation treatment as an outpatient. You have it for a few months.

The most common drug used in this phase is high-dose cytarabine (HiDAC). You usually have it on its own or sometimes with other chemotherapy drugs.

Some people go on to have a stem cell transplant after 1 or 2 cycles of chemotherapy. This is usually a donor (allogeneic) transplant. Your doctor will advise you if it is required for your case.

Less intensive chemotherapy

You will have lower doses of chemotherapy or other drugs. The aim is to control AML for as long as possible and to avoid the side effects of intensive chemotherapy. If you have other medical conditions or health problems, this type of treatment may be an option for you. It has a lower risk of serious side effects and may be easier to cope with. You may be able to have some treatments as an outpatient.

Some drugs that may be used include:

- low-dose cytarabine
- azacytidine.

Some people have a targeted therapy drug called venetoclax (Venclyxto®) with chemotherapy.

Your doctors will take regular blood and bone marrow samples to see how treatment is working. This helps them decide on any further treatment you may need.

Side effects of chemotherapy

Chemotherapy can cause side effects. Your doctor, nurse or pharmacist will explain what to expect. Different drugs cause different side effects.

The main side effects are described here, as well as some ways to reduce or control them. You may get some of these side effects but you are very unlikely to get them all. Always tell your doctor or nurse about any side-effects you have so they can help.

Risk of infection

Chemotherapy usually reduces the number of white blood cells in your blood. These cells normally fight infection. If the number of white blood cells is low, you are more likely to get an infection. A low white blood cell count is called neutropenia.

Your doctor may give you the following:

- antibiotics to help prevent an infection
- injections of a drug called G-CSF under the skin – this may help your bone marrow make a type of white blood cell called neutrophils.

When you are in hospital, your nurse will check your temperature regularly and monitor you for signs of infection. Always let them know if you feel unwell or cold and shivery.

When you are at home contact the hospital straight away on the 24-hour contact number you have if:

- your temperature goes over 37.5°C (99.5F)
- you suddenly feel unwell, even with a normal or low temperature

- you have symptoms of an infection.

Symptoms of an infection include:

- feeling shivery
- a sore throat
- a cough
- diarrhoea
- needing to pass urine often
- pain when passing urine.

It is important to follow any specific advice your team gives you.

You will have regular blood tests to check the levels of all your blood cells. Your treatment may need to be delayed if the number of your white blood cells is too low or you develop an infection.

Bruising and bleeding

Chemotherapy can reduce the number of platelets in your blood. Platelets are cells that help the blood to clot. Contact the hospital straight away if you injure yourself or develop any unexplained bruising or bleeding.

This includes:

- nosebleeds
- bleeding gums
- blood spots or rashes on the skin.

If your platelets are low, try to avoid injuries. Here are some tips that might help:

- wear protective gloves when doing housework
- be careful not to bump into things or trip
- use a soft toothbrush to protect your gums and do not floss.

You will probably need platelet transfusions at times during your treatment. These are given by a drip (infusion).

Anaemia (reduced number of red blood cells)

Chemotherapy may reduce the number of red bloods cells (haemoglobin) in your blood. A low level of red blood cells is known as anaemia, which can make you feel very tired and lethargic. You may also become breathless.

Anaemia can be treated with blood transfusions. This should help you to feel more energetic and ease the breathlessness.

Tumour lysis syndrome

When you first have chemotherapy, large numbers of leukaemia cells die and break down quite quickly. This releases large amounts of a waste chemical called uric acid into your blood. The kidneys usually get rid of uric acid, but may not be able to cope with large amounts. This can cause a side effect called tumour lysis syndrome (TLS).

TLS can lead to kidney problems, muscle cramps, an abnormal heartbeat, or in rare cases, seizures.

To prevent or manage TLS, you may be given either of two tablets called Allopurinol / Febuxostat or a drip (infusion) called rasburicase. Your doctor or nurse may also ask you to drink plenty of fluids. Or they may give you extra fluids as a drip.

Feeling sick

Some chemotherapy drugs can make you feel sick (nauseated) or possibly be sick (vomit). Your doctor will prescribe anti-sickness (anti-emetic) drugs to prevent this. Let your doctor or nurse know if your anti- sickness drugs are not helping, as there are several different types you can take. We have more information about nausea and vomiting.

Sore mouth

Your mouth may become sore or dry, or you may notice small ulcers during treatment. Drinking plenty of fluids, and cleaning your teeth regularly and gently with a soft toothbrush, can help to reduce the risk of this happening. Tell your nurse or doctor if you have any of these problems, as they can prescribe mouthwashes and medicine to prevent or clear mouth infections.

We have more information about:

- mouth care during chemotherapy
- coping with eating problems if your mouth is sore.

Constipation

Some chemotherapy drugs and also anti-sickness drugs and pain killers can cause constipation. Let your nurse or doctor knows if this happens so they can prescribe drugs to prevent or treat this. Try to eat more fibre, raw fruits, cereals and vegetables and drink plenty of liquid. Gentle exercise, such as short walks, can help to improve constipation.

Diarrhoea

Rarely, some chemotherapy drugs may cause diarrhoea. Tell your doctor if this happens. They will check if you need treatment for an infection and give you drugs to control diarrhoea if needed. Always tell them if it is severe or it if does not get better. It is important to drink plenty of fluids if you have diarrhoea.

Tiredness (fatigue)

You will probably feel very tired and need a lot of rest. Try to balance this with some gentle exercise, such as short walks, which will help. You'll probably tire easily for some months after your treatment, but this will gradually get better. We have a booklet called Coping with fatigue that you may find helpful.

Hair loss

Most people lose all the hair on their head during treatment. Eyebrows, eyelashes and other body hair may also thin or fall out. Hair loss usually starts about 2 weeks into the induction phase of treatment. It is almost always temporary. Your hair will usually grow back over a few months after your treatment has finished or during maintenance (if you have this).

We have a booklet called Coping with hair loss that you may find helpful.

Skin changes

If your skin feels dry, try using an unperfumed moisturiser every day. During treatment, and for several months afterwards, you will be more sensitive to the sun. Your skin may burn more easily than usual. You can still go out in the sun. But use a suncream with a sun protection factor (SPF) of at least 50, and cover up with clothing and a hat.

Your skin may darken during treatment. It will return to its normal colour after you finish treatment. Always tell your doctor or nurse about any skin changes. They can give you advice and may prescribe creams or medicines to help.

Effects on the heart

Some of the drugs used to treat leukaemia can affect the way the heart works. Your doctors plan your treatment carefully to reduce the risk of this happening. You may have tests to check how well your heart is working before, during and after treatment.

Stem cell transplants

Some people with AML have a treatment called a donor or allogeneic stem cell transplant.

You have this treatment when you are in remission. It depends on:

- the risk of AML coming back
- whether a donor is available.

If AML comes back (relapses), some people have a stem cell transplant when they are in remission again.

Donor stem cell transplants may increase the chances of curing AML or may keep it in remission for longer. But this treatment is not suitable or necessary for everyone. It can have serious risks.

If your doctor thinks you need a donor transplant, they will arrange for you to talk to the transplant team.

Having a donor stem cell transplant

There are different stages to a donor stem cell transplant:

- You have high doses of chemotherapy, sometimes with a type of radiotherapy called total body irradiation (TBI). This is called conditioning treatment. The intensity of the treatment depends on your age and your general health. Your donor's stem cells are collected from their blood or bone marrow.
- After the conditioning treatment, you are given the donor's stem cells into your line as a drip. They replace the cells that have been destroyed by the conditioning treatment.

- The donor stem cells start making new healthy red blood cells, white blood cells and platelets in your bone marrow. The new white blood cells help your immune system find and destroy any remaining leukaemia cells.

A stem cell transplant can cause side effects. Some of these can be serious. It is only done in specialist transplant units. You may need to stay in hospital for 4 to 6 weeks, or sometimes longer. Recovery may take many months. There are likely to be times when you feel very unwell.

We have more information about having a donor stem cell transplant in our booklet Stem cell transplants using donor cells (allogeneic).

Targeted therapy

Different types of targeted therapy drugs may be used to treat AML. These drugs target something that is helping leukaemia cells grow and survive. They are sometimes given along with chemotherapy. Some drugs are only effective in treating certain types of AML and may only be available in some situations. Your doctor or nurse will explain whether they are suitable for you.

Monoclonal antibodies

Gemtuzumab ozogamicin (Mylotarg®) is a type of targeted therapy called a monoclonal antibody. It delivers chemotherapy to the leukaemia cells. You may have this as part of your first treatment for AML if cytogenetic tests show it is suitable for you.

Gemtuzumab locks on to a protein called CD33 on the surface of some leukaemia cells. It then releases chemotherapy (ozogamicin) to the leukaemia cells. You have it as a drip into a vein (intravenously).

Medicines which inhibit cancer proteins

These drugs block certain proteins that help the leukaemia cells to grow. Different types are used depending on the protein the leukaemia cell makes.

Some people with AML have a faulty (mutated) FLT3 gene. It makes a protein that helps the leukaemia cells to grow. Drugs that target and block (inhibit) the FLT3 protein are used to treat some types of AML:

- Midostaurin (Rydapt®) is given along with chemotherapy. You take it as a capsule for 14 days between cycles of chemotherapy. You may also have it on its own for up to a year (maintenance treatment). You take it as a tablet.
- Gilteritinib (Xospata®) is usually used if AML does not respond to other treatments or comes back after treatment. You take it as a tablet on its own.

Venetoclax is another cancer growth inhibitor drug. You may have it if the leukaemia cells make too much of protein called BCL2. It may be given with less intensive chemotherapy , but it is currently not standard treatment. You have it as a tablet.

Some people with AML have a fault (mutation) in the IDH1or IDH2 gene in the leukaemia cells. They make proteins that stop the blood cells developing normally. Enasidenib mesylate (Idhifa®) and ivosidenib are drugs that block these proteins. They may be used to treat AML that does not respond to other treatments or comes back after treatment. You take them as tablets.

Side effects

The side effects of targeted therapy depend on the type of targeted drug you have. Your doctor and nurse will explain more and tell you how side effects can be managed or treated.

We have more information on our website about these drugs and their side effects.

Drugs used to treat APL

If you have a type of AML called acute promyelocytic leukaemia (APL), your induction and consolidation treatment may include drugs called ATRA or ATO. These are not chemotherapy or targeted therapy drugs. They are sometimes called a differentiating agent. Your treatment depends on whether you have low-risk, intermediate-risk, or high-risk APL. Risk is based on the level of your white blood cells when you are diagnosed.

If you have low or intermediate risk, you usually have a combination of ATRA and ATO. You do not usually need any chemotherapy drugs.

If you have high-risk APL, you may have ATRA. You usually have it with a chemotherapy drug such as idarubicin. This combination is called AIDA. Or you may have ATRA and ATO together. You usually have maintenance treatment afterwards with ATRA on its own or with chemotherapy for about a year.

ATRA (All Trans-Retinoic Acid)

ATRA is also called tretinoin or Vesanoid®. It is a type of drug called a retinoid, which is like vitamin A.

ATRA helps make the leukaemia cells develop normally. You start taking it straight away. It can reduce leukaemia symptoms quickly. You take it every day as capsules with food. It may be given with chemotherapy or ATO.

Side effects can include:

- headaches
- dry skin and mouth
- feeling sick (nausea)
- bone pain
- dry eyes.

Arsenic trioxide (ATO, Trisenox®)

ATO is sometimes called Trisenox®. It damages the leukaemia cells. It is given into a vein through a drip.

Side effects can include:

- heart changes
- diarrhoea
- tiredness
- muscle and bone pain
- a high temperature
- raised blood sugar.

Both ATRA and ATO can lead to a specific problem called in scientific terms as "Differentiation syndrome". This includes swelling over legs, increase in weight, breathing difficulty – at times needing oxygen, high temperature or rarely, a drop in blood pressure. This is a serious problem, and your doctor may hold these medicines (ATRA and ATO), and also give certain injections for treating it.

Supportive care

Leukaemia and its treatment can have symptoms and side effects which may cause some complications. Your doctor and nurse will monitor you for these. They will give you supportive treatments to prevent or manage them.

Possible complications may be caused by infection, bleeding and low blood cell counts. Supportive care is an important part of treatment for leukaemia.

Blood products

If your red blood cells or platelets are low, you can have a blood or platelet transfusion to increase the number of these cells in your blood. The blood or platelets you are given are from carefully screened blood donors. You have the blood or platelets through a drip into a vein.

Having a blood transfusion will increase your energy levels and reduce breathlessness. If your blood count goes down again, you may need another blood transfusion.

A platelet transfusion will reduce your risk of problems with bleeding.

Drugs to prevent or treat infections

You will have drugs to treat or prevent infections. You may get an infection because you have low numbers of healthy white blood cells. This can be because of the leukaemia or its treatments. Different types of drugs are used to treat or prevent different types of infections. They include antibiotics, antivirals and antifungal drugs.

Drugs to help make more white cells (growth factors)

Drugs called growth factors can be used to encourage the bone marrow to make white bloods cells.

These drugs include granulocyte-colony stimulating factors (G-CSFs), such as filgrastim (Neupogen®) and pegfilgrastim (Neulasta®). They:

- shorten the length of time you have a low white blood cell count
- lower your risk of infection.

Growth factors are also used before and after a stem cell transplant.

Removing extra cells from the blood (leukapheresis)

Very rarely, some people with an extremely high number of white blood cells have a process called leukapheresis. Doctors remove the blast cells from the blood to prevent them clogging up blood vessels. They use a machine called a cell separator to do this. This process is rarely done.

Research – clinical trials

These are usually large national and international studies that aim to find out more about leukaemia and treatment. They use drugs and treatments for leukaemia that are known to work well. But they may give them:

- in different combinations
- with newer types of drugs.

Clinical trials may:

- test new treatments, such as new chemotherapy drugs
- look at new combinations of existing treatments, or change the way they are given to make them more effective or reduce side effects
- compare the effectiveness of drugs used to control symptoms
- find out how cancer treatments work
- find out which treatments are the most cost-effective.

Trials are the only reliable way to find out if a different type of chemotherapy, radiotherapy, or other treatment is better than what is already available.

Taking part in a trial

Usually, several hospitals around the country take part in these trials. Your doctor or nurse will explain about what is involved in a trial before you make any treatment decisions.

If you decide not to take part in a trial or change your mind at any time, your doctor will respect your decision and you do not have to give a reason. However, it can help to let them know your concerns so that they can give you the best advice. There will be no change in the way that you are treated by the hospital staff, and you will be offered the standard treatment for your situation.

We have a booklet called Understanding cancer research trials (clinical trials) that you may find helpful.

Blood and bone marrow samples

Blood and bone marrow samples are taken to help make the right diagnosis. You may be asked for your permission to use some of your samples for research into cancer. If you take part in a trial, you may also give other samples. These may be frozen and stored for future use when new research techniques become available. Your name will be removed from the samples so you cannot be identified.

The research may be done at the hospital where you are treated, or at another one. This type of research takes a long time, and results may not be available for many years. The samples will be used to increase knowledge about the causes of leukaemia and its treatment. This will hopefully improve the outlook for future patients.

After treatment for AML

Follow-up

After your treatment, you will have regular check-ups. Your doctor or specialist nurse will tell you what to expect. These follow-up appointments will continue for several years. They are a good time to talk about any questions or worries you have.

If you had a stem cell transplant, we have more detail on follow-up and aftercare on our website.

Your doctor will ask you how you have been feeling. They will also ask if you have any new or ongoing side effects.

You will have regular blood tests to check:

- the number of normal cells in your blood, to make sure the leukaemia is still in remission
- your general health – for example, how well organs like your kidneys and liver are working.

Depending on the treatment you had, you may also have bone marrow samples taken to check for signs of leukaemia. Sometimes you may need other tests, such as x-rays or scans.

Many people find that they get very anxious before these appointments. This is normal. It may help to get support from family and friends.

If you have any problems, or notice any new symptoms between appointments, talk to your doctor or specialist nurse as soon as possible. Do not wait for your next appointment.

What if the leukaemia comes back?

For some people, leukaemia comes back after treatment. This is called a relapse. If this happens, you may have further treatment. Some people have the same chemotherapy drugs that were used during their induction treatment. Others are offered different types of chemotherapy or targeted drugs. With further treatment, a second remission may be possible. Some people may then be able to have a stem cell transplant from a donor.

Sometimes treatment can control the leukaemia but not cure it. The aim of treatment in this case is to reduce any symptoms and improve quality of life for as long as possible.

Possible long-term effects of treatment

Unfortunately, treatment for leukaemia can sometimes cause side effects that are permanent or happen months or years later.

These will not happen to everyone. Your doctor or specialist nurse can explain how likely they are to affect you. They may give you advice about ways to prevent or manage long-term effects.

This may include:

- telling them about certain symptoms
- having regular tests or check-ups with your GP or at a hospital clinic

- having treatments or medicines
- making lifestyle changes.

Changes to heart health

Some leukaemia treatments can increase your risk of heart problems later in life. After these treatments, your doctor may arrange tests to check your heart every few years. They may also advise you to have regular blood pressure checks and blood tests to check your cholesterol levels. Your GP can arrange this for you.

Second cancers

People who have had intensive chemotherapy or a stem cell transplant have a slightly higher risk of developing a different cancer years later. It is important to go for any cancer screening tests when you are invited.

Screening tests:

- look for early changes that can be treated to prevent cancer
- find cancer at an early stage when it is easier to treat.

We have more information about breast, bowel and cervical screening. Ask your doctor or specialist nurse what screening you should have and when you should have this.

Fertility

Treatment for AML can affect your fertility. If you are thinking about getting pregnant or trying to make someone pregnant, talk to your doctor. They can give you advice based on the treatment you had and your age. You may be able to have tests to check if your fertility has been affected. Your doctor may refer you to a fertility specialist for more advice if needed.

Tiredness (fatigue)

Feeling very tired is common after treatment for AML. It may take months to get your energy back. Recovery is a gradual process, so do not expect too much of yourself. Try to pace yourself and gradually increase what you do.

We have more information about managing tiredness in our booklet Coping with fatigue (tiredness).

Early menopause

The menopause usually happens between the ages of 47 and 53. But treatment for leukaemia can cause an earlier menopause. Your doctor can tell you whether this is likely.

Symptoms of the menopause can include:

- hot flushes
- night sweats
- joint pain
- reduced sex drive
- vaginal dryness
- disturbed sleep
- mood swings and anxiety.

Tell your doctor if you have any of these symptoms. You may have blood tests to check for signs of the menopause. If you are younger, you may have hormone replacement therapy (HRT) or the contraceptive pill to reduce menopausal symptoms. Your doctor will explain any possible benefits and risks of HRT.

Looking after yourself

It is important to look after yourself during treatment and while you recover. Some side effects may take weeks or months to improve, especially after intensive treatment. There are things you can do to manage some side effects and to improve your well-being.

Sex

Usually, there is no medical reason to stop having sex during treatment for leukaemia.

Your doctor may advise you to avoid penetrative sex until your platelets recover. You are more likely to bleed if your platelets are low or to get an infection if your neutrophils are low. Your doctor or nurse can give you more information about this.

Leukaemia and its treatment cause physical and emotional changes that can affect your sex life. Side effects may mean you feel too unwell or tired for sex. You may also have changes such as hair loss that affect your body image and self-esteem. We have more information in our booklet Body image and cancer.

Usually, difficulties slowly improve after treatment. If you have a partner, it can help to talk openly with them about how you feel. You may both need some time to adjust. If changes to your sex life do not improve, your specialist nurse can give you advice or arrange expert support if needed. We have more information in our booklet Cancer and your sex life.

Contraception

Even if your treatment is likely to damage your fertility, you may still be able to get pregnant or make someone pregnant. Drugs used to treat leukaemia can be harmful to an unborn baby. You should use contraception during treatment and for several months after. Ask your doctor or specialist nurse for more information.

Protecting a partner

Leukaemia is not contagious and not passed on during sex. But small amounts of chemotherapy or other drugs may get into your bodily fluids. This includes vaginal fluid and the fluid that carries sperm (semen). To protect your partner, your doctor may advise that during your treatment you:

- use a condom for vaginal or anal sex
- use a condom or a latex barrier such as a dental dam for oral sex.

This also helps protect you from sexually transmitted infections (STIs). This is important because your treatment may affect how your body fights infections.

Your diet

Having treatment can weaken your immune system. This means that you are more likely to get an infection. Try to avoid possible risks of infection from food. Here are some tips that might help. Your hospital may also give you further advice:

- eat freshly cooked food
- avoid reheating food

- make sure frozen foods are completely defrosted in the fridge, then cook them straight away, following cooking instructions
- wash salads, fruit and vegetables well.

Ask your doctor or specialist nurse for advice. They may give you a list of foods to avoid, such as raw meat and fish, undercooked eggs and unpasteurised cheese. When your blood counts recover, you can usually eat a normal diet. Eating a healthy, balanced diet and keeping to a healthy weight may help to:

- increase your energy levels
- improve your sense of well-being
- reduce the risk of new cancers, heart disease, stroke and diabetes.

Alcohol

If you drink alcohol, drinking a lot can slow your recovery. It can increase the risk of bleeding, especially if your platelet count is low. It can also affect how some drugs work. Ask your doctor if it is okay for you to drink alcohol.

Smoking

If you smoke, giving up is one of the healthiest decisions you can make. Smoking increases your risk of bone thinning (osteoporosis). It is also a major risk factor for smoking-related cancers and heart disease. Ask your doctor or nurse for advice. The NHS has a lot of information and support to help you give up smoking.

Keeping physically active

Regular gentle activity, such as walking, is a good way to build up energy levels. It can also help reduce stress and anxiety.

But you will need to build it up gradually and be careful about exercising while your blood count is still recovering. If your red blood cells are low (anaemia), you will feel very tired and will need to take things slowly. You will need to avoid swimming and high-impact or contact sports until you are no longer at risk of infection and bleeding. Ask your doctor or nurse about what kind of exercise is suitable for you when your blood count is still recovering.

We have more information in our booklet Physical activity and cancer.

Vaccinations

Your doctor may advise you to have vaccinations against illnesses such as flu and coronavirus. If you live with other people, your doctor may suggest they also have these vaccinations and keep up with other regular vaccinations.

If you had a donor stem cell transplant, you will lose the effect of any vaccinations you had as a child. You will need to have these vaccinations again. Your doctor will advise you about this. There are some types of vaccines that are not safe to have until your immune system recovers. These are called live vaccines. They include flu vaccines that are given as a spray up the nose. If you have young children, they should not have this type of flu vaccine. This is because it may affect you too. Ask your doctor or specialist nurse for advice about this or before you have any vaccinations yourself. It is important to get advice from your doctor if you are planning any travel abroad.

Social life

While your white blood cell levels are low, try to avoid crowded places such as cinemas, pubs and public transport. This may help reduce your risk of infections.

How quickly you get back to your full social life may depend on the treatment you had and how your blood cell levels recover. Your doctor or specialist nurse can give you advice and tell you what your full blood count is.

Avoid contact with people who have an infection such as chickenpox, shingles or measles. If you are worried you have had contact with someone with an infectious disease, contact your doctor.

Holidays and travel

If you are planning to go on holiday, talk to your doctor. For the first few months after treatment, you may still have regular check-ups or clinic appointments at the hospital. You may sometimes need blood or platelet transfusions.

If you had a stem cell transplant, it is best not to plan any holidays until at least 6 months after treatment has finished. Your doctor will usually advise you not to travel abroad in the first year after a transplant, unless there is a cancer treatment centre nearby.

Ask your doctor for advice about travel and any vaccinations you might need.

Going back to work or study

Your doctor or nurse can give you advice about when to start work or study again. It may depend on the treatment you had and how well you are recovering. If you had a stem cell transplant, your doctor or specialist nurse may advise you to wait until your blood count has gone back to normal or almost normal.

When you are ready to go back to work or study, you may want to start part-time and build up gradually. Talk to your employer, occupational health department, teacher or tutor about your plans for returning to work or study. There may be ways they can help.

You can also ask them to talk to the people you work or study with about your illness and treatment before you return. Check that you feel comfortable about the way they plan to do this.

Finding ways to cope

Leukaemia and its treatment can have a big impact on your life. There may be times when it is all you think about. It can also feel like you have little control over many of the things that are happening.

You may find you want things to be as normal as possible. This can involve staying in contact with friends and doing your usual activities. Or you may decide different things are important to you now and want to make changes. There are some things you can do that may help you cope.

Talk to someone

It can help to share how you are feeling and what is on your mind. There may be a few people you can talk openly to and ask anything. They could be family, friends or colleagues, or someone from a cancer support group.

Find ways to relax

Different things work for different people. Taking time to relax can help you cope with stress and anxiety. We have information about complementary therapies if you find these useful. We have information in our booklet Complementary therapies and cancer.

Remember some complementary therapies may not be suitable if you have leukaemia or are having treatment for leukaemia. It is important to talk to your doctor or specialist nurse before you have any complementary therapy. It is also important to tell your complementary therapist that you have leukaemia.

Your feelings and relationships

Your feelings

Relationships

Talking to children

What you can do

If you are a relative or friend

JASCAP has a range of booklets listed below with detailed information on the above subjects.

JASCAP has a series of booklets on the following topics relating emotional aspects of cancer.

Talking about cancer

Talking to children and teenagers when an adult has cancer

Talking with someone who has cancer

Making or changing your Will

When Cancer Returns

Emotional effects of cancer

JASCAP has a series of booklets on the following topics relating physical aspects of cancer.

Dietary advice for cancer patients

Eating Hints Before During and After Cancer Treatment

Cancer and your sex life

Looking after someone with cancer

Cancer Pain

Controlling the symptoms of cancer

Other symptoms and side effects of cancer and its treatments

Life After Cancer Treatment

Side effects of cancer treatment

Coping with fatigue

Physical activity and cancer treatment

Please also note that all these booklets (PLUS this booklet itself), in various Indian languages are available on our website www.jascap.org for free download.

Work and financial support

Financial help and benefits

The hospital social worker will help you in identifying sources for financial assistance and guide you the procedures for obtaining such help.

Work

You may not know how cancer will affect your work, now or in the future.

It is a good idea to talk to your manager early on. If your workplace has a human resources (HR) or personnel department, contact them as soon as you can. If they know how the cancer or treatment may affect your ability to work, they can support you better.

Some people stop working during cancer treatment and for a while after, until they feel ready to go back. Others carry on working, perhaps with reduced hours or other changes to their job.

Some people may decide not to go back to work. Or they may choose to do something different. Others may not be able to go back to work because of the effects of cancer on their health. Going back to work may depend on the type of work you do or how much your income is affected.

It is important not to take on too much, too soon. Your cancer doctor, GP or specialist nurse can help you decide when and if you should go back to work.

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NOTES

JASCAP is a charitable trust that provides information various aspects of cancer. This can help the patient and his family to understand the disease and its treatment and thus cope with it better.

JASCAP is registered under the Societies Registration Act, 1860 No. 1359/1996 G.B.B.S.D, Mumbai and under the Bombay Public Trusts Act 1950 No. 18751 (Mumbai). Donations to JASCAP qualify for deduction u/s 80G (1) of the Income Tax Act 1961 vide Certificate No. DIT (E)/BC/80G/1383/96-97 dated 28.2.97 subsequently renewed.

Contact: **Mr. Prabhakar Rao or Ms. Neera Rao**

JASCAP: We need your help

We hope that you found this booklet useful

To help other patients and their families we need and intend to extend our Patient Information Services in many ways.

Our Trust depends on voluntary donations. Please send your donation by cheque or D/D payable in Mumbai in favour of "JASCAP".

Important

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