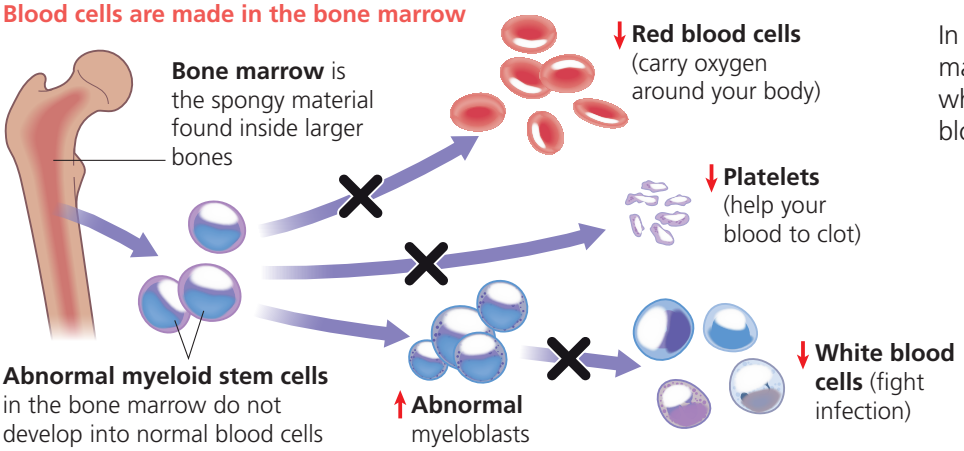
What is Acute Myeloid Leukemia?

Acute myeloid leukemia, also known as AML, is a cancer of myeloid blood stem cells. 'Myelo' means bone marrow and 'acute' means that it develops quickly. Normal myeloid stem cells go on to develop into red blood cells, white blood cells and platelets that circulate in your blood. So, AML affects the production of all these blood cells.

AML is rare, but it is the most common acute leukemia in adults. It can occur at any age but is most common in people in their 60s and 70s. It is slightly more common in men than women. It's more common in white populations than in other ethnic groups.

Blood cells are made in the bone marrow



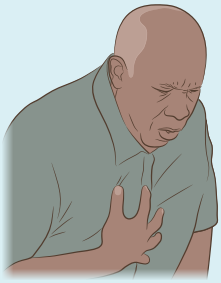
In AML, your bone marrow makes too many abnormal myeloid stem cells, which do not develop into normal blood cells. This means that you have:

- Too few red blood cells
- Too few platelets
- Too few normal white blood cells
- Too many under-developed blood cells called myeloblasts (AML cells)

How will AML affect me?

Symptoms are often vague at first

Anemia: tiredness, breathlessness



↓ Red blood cells

More frequent infections: fever, cough, headache

↓ White blood cells

Abnormal bleeding: nose bleeds, bleeding gums, bruising, blood clots

↓ Platelets

Bone pain in your back or hips

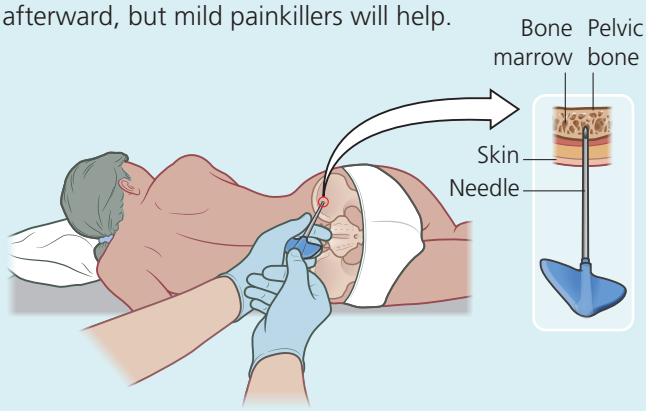
↑ AML cells in your bone marrow

Other symptoms include weight loss, loss of appetite, swollen glands and headaches

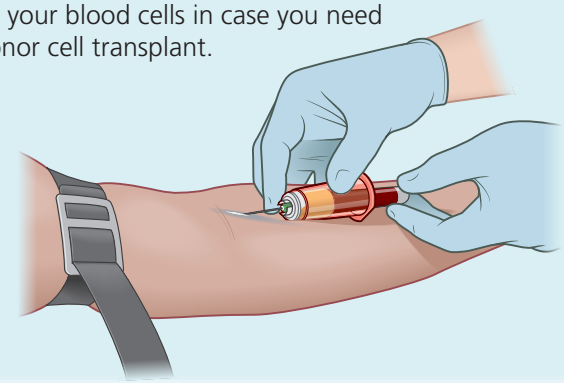
What tests will I need to have?

To diagnose and manage AML, you will need…

Bone marrow biopsy to get a sample of AML cells for gene testing (see overleaf). A needle is put into a prominent part of your pelvic bone (not your hip or spine) under local anesthetic. It takes about 15–20 minutes. You may ache or feel bruised afterward, but mild painkillers will help.



Regular blood tests to measure your blood cell counts, check the health of your liver and kidneys, and tissue type your blood cells in case you need a donor cell transplant.



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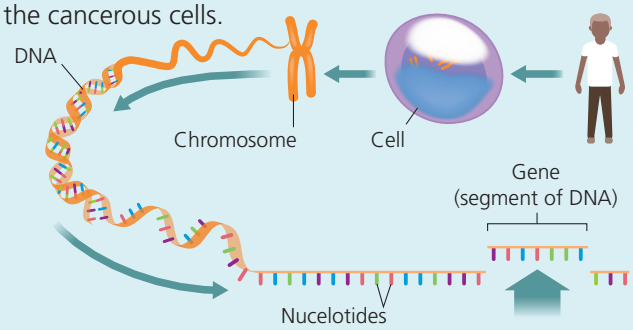
What treatment will I need to have?

Your treatment will depend on many factors including your age and fitness, and the nature of the gene changes inside the leukemia cells.

Genes and AML

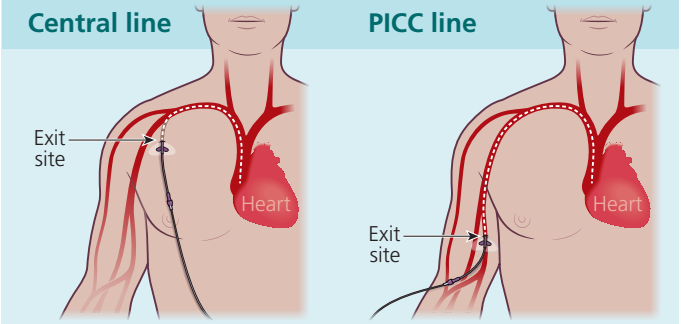
Leukemia is caused by changes in genes (mutations). These changes are not inherited and are only found in the cancerous cells.



Your doctors will send some of your AML cells to a lab for gene testing (also called molecular profiling). The gene mutations can show what treatment you need and how likely it is that your AML will be cured.

Before you start treatment...

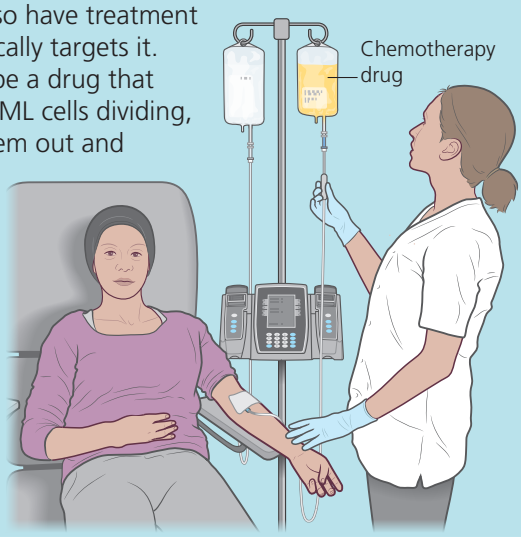
You may have a central line or a PICC (peripherally inserted central catheter) line put in.



A central line comes out of your chest and a PICC line out of your arm. Both are used to give treatments directly into your bloodstream (intravenous treatment) or take blood for testing without using a needle.

Induction chemotherapy kills the AML cells so your normal blood cell counts recover (remission).

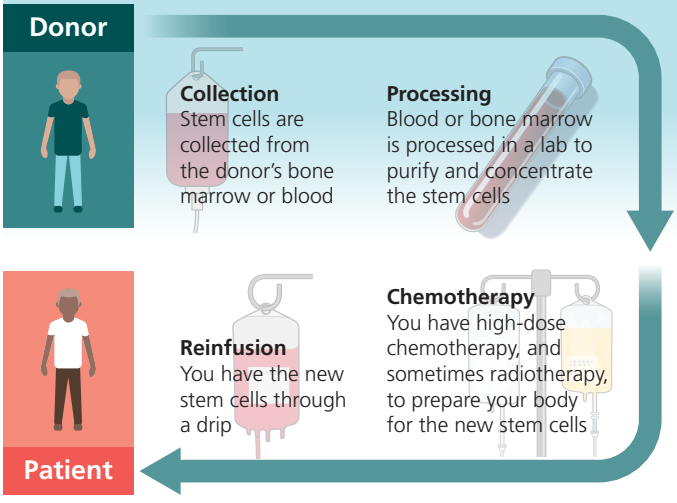
If your AML cells show a change in a gene (a mutation), you may also have treatment that specifically targets it. This could be a drug that stops the AML cells dividing, or seeks them out and kills them.



When your AML is in remission, you will have **consolidation treatment** to get rid of any remaining AML cells and stop the AML coming back. You may have:

- More chemotherapy
- Intensive chemotherapy followed by an allogeneic **blood stem cell transplant**

Allogeneic means that the stem cells come from a donor. The donor may be a family member or someone you don't know whose blood cells closely match yours.



Questions to ask your doctor(s)

- Have you done molecular profiling on my AML cells?
- How does this affect the type of treatment I need?
- What is the aim of my treatment?
- What are the possible short- and long-term side effects of the treatment?
- How will you know if the treatment is working?
- Will I be in hospital for treatment?
- Can I have visitors and are there any precautions they should take?

Treatment side effects depend on the drugs you have

- Increased risk of infection
- Abnormal bruising or bleeding
- Sickness or diarrhea
- Sore mouth
- Fatigue
- Hair loss
- Loss of fertility

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