How Does Leukaemia Develop?

The blood process is essential for maintaining health, and disruptions in it, such as those caused by DNA mutations in bone marrow cells can lead to leukaemia. This complex cancer requires prompt diagnosis and a specialised treatment plan tailored to the type and genetic profile of the leukemia.

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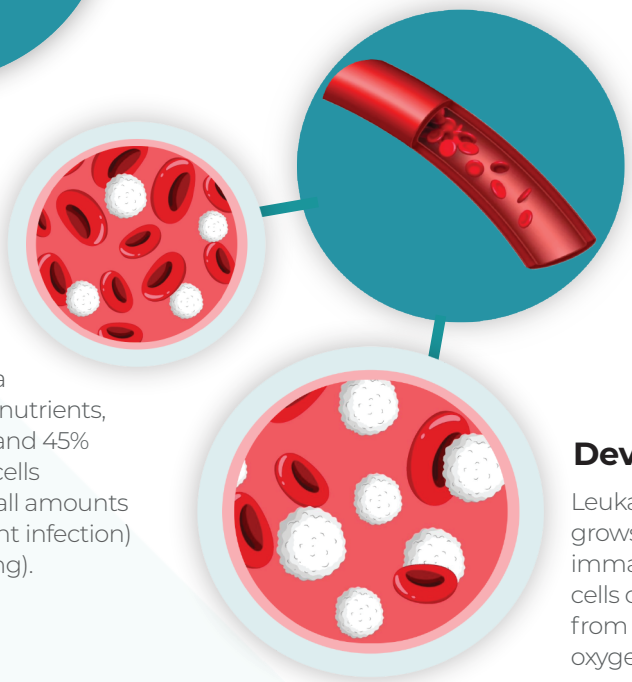
Blood Cell Formation

Bone marrow is the spongy tissue inside the bones that contains immature stem cells. In a healthy individual, these stem cells develop into either lymphoid or myeloid stem cells.



Maturation and Circulation

Lymphoid stem cells develop into immune cells and natural killer cells, while myeloid stem cells give rise to red blood cells, platelets, and other types of white blood cells. After forming in the bone marrow, mature blood cells enter the bloodstream. The body regulates how many are produced based on demand.

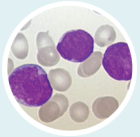
Normal Blood

Normal blood is made up of about 55% plasma (a watery fluid carrying nutrients, hormones, and waste) and 45% cells, mainly red blood cells (carry oxygen), with small amounts of white blood cells (fight infection) and platelets (aid clotting).

Development of Leukaemia

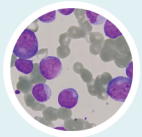
Leukaemia starts when a mutated blood cell grows uncontrollably, producing abnormal, immature cells known as leukemia cells. These cells crowd out healthy ones, stopping the body from making enough normal blood cells to carry oxygen, fight infection, or clot properly.

The Main Types of Leukaemia



Acute lymphoblastic leukaemia (ALL)

- A fast-growing cancer of the lymphoid cells.
- Symptoms often include fatigue, frequent infections, bruising, and bone pain.

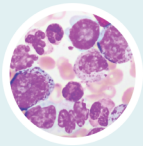


Acute myeloid leukaemia (AML)

- A rapidly progressing cancer of the myeloid line of blood cells.
- Causes anaemia, infections, and bleeding due to bone marrow failure.

Chronic lymphocytic leukaemia (CLL)

- A slow-growing cancer of the lymphocytes.
- Can cause swollen lymph nodes, fatigue, and weight loss over time.



Chronic myeloid leukaemia (CML)

- A cancer that affects the myeloid cells and progresses slowly at first.
- Associated with the Philadelphia chromosome mutation.

INS LifeGuard provides 24/7 nurse-led emergency response, health monitoring, and in-home TeleHealth services. This allows individuals especially those at higher risk, like blood cancer patients to access timely care, track vital signs in real-time, and receive medical support without needing to travel long distances.