

Decoding your Full Blood Count (FBC)

A Full Blood Count (FBC), or Complete Blood Count (CBC), is the most common blood test healthcare providers request. It gives a quick snapshot of your general health and well-being. It examines the three main cell types in your blood: red blood cells, white blood cells and platelets.

This article helps you understand this blood test, its components, and how to read your values.

What is your blood made of?

Blood consists of two main parts: cells and a liquid part called plasma.

The three types of cells are:

-Red Blood Cells (RBCs): RBCs are the main cell type in the blood; 45% of your blood is RBCs. They carry oxygen from the lungs to the tissues in your body. Hemoglobin (Hb) is the protein in RBCs that carries oxygen.

-White Blood Cells (WBCs): WBCs are your body's defence system. They act like a security system, protecting your body against foreign organisms and helping regulate immunity and inflammation.

There are five different types of white blood cells:

- Neutrophil: fights germs.
- Lymphocyte: produces antibodies and creates immune memory.
- Monocyte: breaks down cells and helps remove germs, foreign particles and dead cells.
- Eosinophil: fights parasites and is involved in allergies.
- Basophil: releases chemical signals to control inflammation and immune response.

-Platelets: Small cell fragments that help blood clot. When an injury occurs, platelets clump together to form a clot and stop the bleeding.

Plasma: The liquid part of the blood in which the cells float. It carries nutrients, proteins, and chemical signals.

Inside a Centrifuged Blood Sample: Blood Components Breakdown

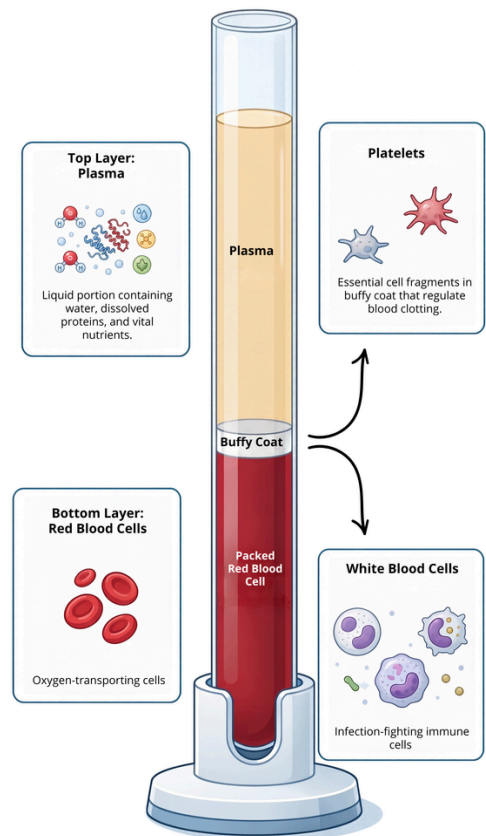


Fig. 1: Image of a blood tube after centrifugation, which separates blood parts and shows blood composition. Plasma is the top layer, the middle layer is the buffy coat, which contains WBCs and platelets, and the bottom layer is RBCs.

Why is an FBC requested?

Healthcare providers request an FBC for a couple of reasons:

- To diagnose certain medical conditions, such as anemia and infection
- To monitor the progress of some medical conditions
- To monitor medical treatments and evaluate how your body responds to specific medicines

What does your Full Blood Count (FBC) test measure?

Blood Cells	What is measured	What high or low results mean
Red Blood Cell (RBC)	• RBC count: Total number of red blood cells • Hemoglobin (Hb/Hgb): Oxygen-carrying protein • Hematocrit (Hct): Measures the percentage of total blood volume occupied by red blood cells. • Mean Cell Volume (MCV): The average size of red cells. • MCH/MCHC: Hb content/concentration • RDW: Variation in the cell size • Reticulocyte count: Immature red cells	• Low : It may mean Anemia, causing tiredness and weakness. • High: May be caused by dehydration or other health conditions
White Blood Cell (WBC)	• Total WBC Count: total number of infection-fighting cells • White cell differential: Breakdown of different white cell types	• High: Shows that your body is fighting an infection or inflammation • Low: may increase infection risk, and can be caused by certain medicines or other conditions.
Platelet (PLT)	• Platelet Count (PLT): total number of clotting cells • Mean Platelet Volume (MPV): Average size of your platelets.	• Low: makes it harder for blood to clot, causing easy bruising and nosebleeds. • High: Increases risk of unwanted blood clots or inflammation.

How to read an FBC test and understand high and low values?

Receiving out-of-range results can cause unnecessary worry. Understanding how to read your FBC and how normal ranges work can help you feel more at ease.

When reading your blood test, you should focus on two main things:

- **Comparing numbers against normal ranges:**

Laboratory reports list your values alongside the normal ranges. Normal ranges are the expected limits for an individual, showing the low and high values that your result should fall within. Remember that normal ranges reflect the middle 95% of healthy people, so 5% of healthy individuals fall outside the range without any medical condition. When you read your result, compare your values with the normal ranges.

Standard FBC Ranges for Adults:

Blood Test Component	Adult Male Range	Adult Female Range
Red Blood Cell Count (RBC)	4.35 – 5.65 × 10 ¹² cells/L	3.92 – 5.13 × 10 ¹² cells/L
Hemoglobin (Hb / Hgb)	132 – 166 g/L	116 – 150 g/L
Hematocrit (Hct)	38.3% – 48.6%	35.5% – 44.9%
White Blood Cell Count (WBC)	3.4 – 9.6 × 10 ⁹ cells/L	3.4 – 9.6 × 10 ⁹ cells/L
Platelet Count (PLT)	135 – 317 × 10 ⁹ cells/L	157 – 371 × 10 ⁹ cells/L

Important Notes:

These normal ranges apply to healthy adults. Children, older adults, and people with chronic health conditions will have different ranges.

- **Interpret out-of-range values:**

A value slightly above or below the normal range does not necessarily indicate a medical condition. Sometimes a healthy individual can fall outside the normal range.

Doctors evaluate your result alongside your symptoms, medical history and other clinical findings. Sometimes doctors also request other tests.

Conclusion:

FBC tests provide a quick look at your overall health. A high or low value shouldn't cause you to panic or overthink. Always seek professional help to interpret your blood test results and diagnose your condition.

Questions to Ask Your Doctor:

- Do my results require any follow-up testing?
- When should i repeat the test?
- Are there any lifestyle factors or medications can affect my results?

To Read More:

- [Healthdirect Australia](#) — Full Blood Count (FBC).
- [Leukaemia Foundation Australia](#) — Blood Tests & Patient Support
- [Pathology Tests Explained \(Lab Tests Online-Australasia\)](#)

References:

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