



Multiple Myeloma: Tests to Assess Blood Cells

Myeloma is a cancer of the plasma cells. A multiple myeloma blood test is crucial for effective diagnosis, treatment, and management of the disease. If you have just been diagnosed or are already navigating the experience of multiple myeloma, it helps to understand the nuances of the test.

Does Multiple Myeloma Show Up in Blood Tests?



A blood test can detect markers and products of abnormal plasma cells, such as M-proteins and free light chains, which are indicators of multiple myeloma. It can also detect the effects of the disease, including low blood counts due to bone marrow involvement and elevated calcium levels resulting from bone destruction, or abnormal kidney tests due to kidney damage. While multiple myeloma shows up in blood tests, a [specialized bone marrow biopsy \(/node/1066/\)](/node/1066/) is necessary for a definitive diagnosis, as it allows for more in-depth examination of specific features of the disease.

Blood tests are routinely done during diagnosis and throughout the disease course. These tests assess:

- response to treatment

- side effects

- signs of possible relapse

What Is the Most Important Blood Test for Multiple Myeloma?

The Serum Protein Electrophoresis (SPEP) test, Serum Free Light Chain (SFLC) test, Complete Blood Count (CBC), and a biochemical panel (sometimes called a metabolic panel) are the most important blood tests for multiple myeloma.

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plasma cells that characterize multiple myeloma. The SPEP test is often followed by immunofixation electrophoresis (IFE), which confirms the type of M-protein in the blood — a test also essential for diagnosis and prognosis.

Serum Free Light Chain (SFLC) Assay

This test measures the levels of kappa and lambda free light chains in the blood and monitors abnormal free light chain ratios. Since myeloma cells typically overproduce one of these free light chains relative to the other, this test can serve as an indicator of the disease.

Complete Blood Count (CBC)

The Complete Blood Count (CBC) is a basic test done during every medical check-up. It is one of the most important blood tests used for diagnosing and monitoring people living with myeloma.



A routine blood test may identify a case of:

- multiple myeloma

- smoldering multiple myeloma

- monoclonal gammopathy of undetermined significance (MGUS)

The CBC is a blood test that quantifies all the cells that make up the solid parts of blood.

The bone marrow is where myeloma grows. All your blood cells – red blood cells (RBC), white blood cells (WBC), and blood-clotting cells called platelets – are made in the bone marrow.

Both myeloma itself and the many treatments for myeloma affect the ability of new blood cells to grow in the bone marrow.

Your CBC will be monitored carefully throughout your treatment course to ensure that your blood cell counts are not decreasing to dangerous levels.

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What Does a Complete Blood Count Measure?

Red blood cells (RBC)

REFERENCE RANGE ($10^{12} = 1$ trillion)

For males $4.32\text{--}5.72 \times 10^{12}/\text{L}$

For females $3.90\text{--}5.03 \times 10^{12}/\text{L}$

Red blood cells are also called erythrocytes. These cells in the blood contain hemoglobin, deliver oxygen to all parts of the body, and take away carbon dioxide. Red blood cells are usually the first to decrease in number in response to active myeloma.

Hemoglobin (hgb)

REFERENCE RANGE



For males $13.5\text{--}17.5 \text{ g/dL}$ ($135\text{--}175 \text{ g/L}$)

For females $12.0\text{--}15.5 \text{ g/dL}$ ($120\text{--}155 \text{ g/L}$)

Hemoglobin, the most important part of the red blood cell, is a protein that transports oxygen to the organs and tissues of the body. A low hemoglobin count can be a sign of anemia, one of the CRAB criteria that are characteristic of active myeloma: elevated **C**alcium, **R**enal (kidney) dysfunction, **A**nemia, and **B**one disease. The doctor will keep a close watch on your hemoglobin throughout your myeloma disease course, as it can be an early indicator of myeloma activity in the bone marrow.

Hematocrit (hct)

REFERENCE RANGE

For males $38.8\%\text{--}50.0\%$

For females $34.9\%\text{--}44.5\%$

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3.5–10.5 x 10⁹/L

White blood cells make up the body's immune system. They fight foreign substances that enter the body, including bacteria, viruses, and toxins. Low WBC counts can result from many types of treatment for myeloma, which can further diminish your ability to fight the disease. Your WBC count will be followed carefully during your treatment for myeloma.

Neutrophils

REFERENCE RANGE

1.7–7.0 x 10⁹/L

 Neutrophils are a type of WBC that helps fight infections, particularly those caused by bacteria and fungi. A low neutrophil count is called neutropenia, a condition that results in susceptibility to infection. Your doctor will check your neutrophil count, sometimes expressed as ANC (Absolute Neutrophil Count, which measures both mature and immature neutrophils), to make sure that it is safe to give you a dose of a particular treatment.

Platelets

REFERENCE RANGE

150–450 x 10⁹/L

Platelets are blood cells that help the blood to clot and prevent bleeding. Low hemoglobin is a more common blood-related symptom of myeloma than a low platelet count (thrombocytopenia) is. Yet, some people do have low platelets at diagnosis as a result of their myeloma. In addition, certain treatments for myeloma can also cause low platelets. These treatments include these proteasome inhibitors:

[Velcade® \(bortezomib\) \(/velcade-bortezomib\)](#)

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To learn more about these blood cell types and subcategories, visit the [Understanding Your Test Results](https://s3.us-west-1.wasabisys.com/imf-d8-prod/resource/u-testresults_0.pdf) booklet, pp. 9–11 (https://s3.us-west-1.wasabisys.com/imf-d8-prod/resource/u-testresults_0.pdf) .

What Does a Comprehensive Metabolic Panel Measure?

A comprehensive metabolic panel (CMP) provides information about your body's chemical balance and metabolism. It measures:

Electrolytes: Sodium, potassium, chloride, and bicarbonate (CO₂) help maintain fluid balance and proper muscle function.

Creatinine and blood urea nitrogen (BUN): CMP measures these substances, which indicate how well your kidneys are filtering waste from your blood.

Calcium: This mineral is essential for bones, muscles, nerves, and hormone function.

Blood sugar: CMP tests measure the amount of sugar in your blood.

Liver markers: These markers, including albumin, bilirubin, total protein, and alkaline phosphatase (ALP), help assess liver function.

Understanding Your Multiple Myeloma CBC Results

Your Complete Blood Count (CBC) provides vital, detailed information for diagnosing and managing multiple myeloma. Understanding your CBC results, including measurements of red blood cells, white blood cells, and platelets, is crucial for your ongoing health and for making treatment adjustments. Your medical team relies on these regular CBC checks to proactively manage potential side effects, such as anemia, infection risk, or bleeding.

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safe and stable.

Dosage adjustment: If blood counts drop too low, your provider might temporarily reduce or pause your treatment to allow your bone marrow to recover.

Supportive therapies: Depending on the affected blood cells, your provider may prescribe supportive therapies. These may include medications to stimulate white blood cell production or platelet transfusions to prevent excessive bleeding.

Further tests: If your test results are abnormal, additional investigation may be necessary to guide treatment.

Understanding your CBC results empowers you to make timely decisions and recognize complications early. Note that each multiple myeloma situation is different. A medical expert is in the best position to help you understand your CBC results. This is where the International Myeloma Foundation comes in.



Navigating the Experience of Myeloma Together

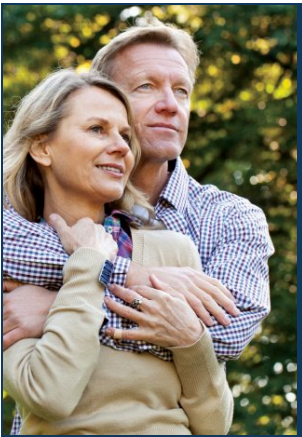
At the International Myeloma Foundation, we provide several comprehensive communication tools to help you navigate the experience of myeloma. To get immediate answers and expert guidance, call our free InfoLine at 1-800-452-CURE or interact with our proven generative AI chatbot, Myelo, today.

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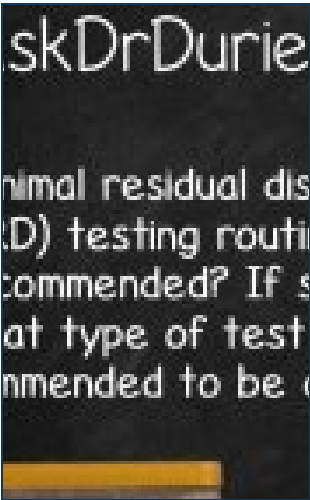
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Foundation medical and editorial content team

Comprised of leading medical researchers, hematologists, oncologists, oncology-certified nurses, medical editors, and medical journalists, our team has extensive knowledge of the multiple myeloma treatment and care landscape.

Additionally, the content on this page is medically reviewed by myeloma physicians and healthcare professionals.

Last Medical Content Review: April 3, 2026.



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