


RBC Evaluation

 Expand Table

TEST	FULL NAME	EXAMPLES OF CAUSES OF LOW RESULT	EXAMPLES OF CAUSES OF HIGH RESULT
RBC	Red Blood Cell Count	<p>Known as anemia</p> <ul style="list-style-type: none"> Acute or chronic bleeding RBC destruction (e.g., hemolytic anemia, etc.) Nutritional deficiency (e.g., iron deficiency, vitamin B12 or folate deficiency) Bone marrow disorders or damage Chronic inflammatory disease Kidney failure 	<p>Known as polycythemia</p> <ul style="list-style-type: none"> Dehydration Lung (pulmonary) disease Kidney or other tumor that produces excess erythropoietin Smoking Genetic causes (altered oxygen sensing, abnormality in hemoglobin oxygen release) Polycythemia vera—a rare disease
Hb	Hemoglobin	Usually mirrors RBC results, provides added information	Usually mirrors RBC results
Hct	Hematocrit	Usually mirrors RBC results	Usually mirrors RBC results; most common cause is dehydration
RBC indices			
MCV	Mean Corpuscular Volume	Indicates RBCs are smaller than normal (microcytic); caused by iron deficiency anemia or thalassemias , for example.	Indicates RBCs are larger than normal (macrocytic), for example in anemia caused by vitamin B12 or folate deficiency
MCH	Mean Corpuscular Hemoglobin	Mirrors MCV results; small red cells would have a lower value.	Mirrors MCV results; macrocytic RBCs are large so tend to have a higher MCH.
MCHC	Mean Corpuscular Hemoglobin Concentration	May be low when MCV is low; decreased MCHC values (hypochromia) are seen in conditions such as iron deficiency anemia and thalassemia.	Increased MCHC values (hyperchromia) are seen in conditions where the hemoglobin is more concentrated inside the red cells, such as autoimmune hemolytic anemia, in burn patients, and hereditary spherocytosis, a rare congenital disorder.
RDW (Not always reported)	RBC Distribution Width	Low value indicates uniformity in size of RBCs	Indicates mixed population of small and large RBCs; immature RBCs tend to be larger. For example, in iron deficiency anemia or pernicious anemia, there is high variation (anisocytosis) in RBC size (along with variation in shape – poikilocytosis), causing an increase in the RDW.
Reticulocyte Count (Not always done)	Reticulocytes (absolute count or %)	In the setting of anemia, a low reticulocyte count indicates a condition is affecting the production of red blood cells, such as bone marrow disorder or damage, or a nutritional deficiency (iron, B12 or folate)	In the setting of anemia, a high reticulocyte count generally indicates peripheral cause, such as bleeding or hemolysis , or response to treatment (e.g., iron supplementation for iron deficiency anemia)