

Lab Results Decoded (*)

Source: AARP Magazine-Feb/Mar 2012 Issue

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Blood Test #1: Comprehensive Metabolic Panel**What it does: Measures kidney and liver function, electrolyte levels**

	What It Is	Normal Results	What a low number may mean	What a high number may mean
Glucose (Fasting)	Sugar in the blood	70 - 99 mg/dl	Hypoglycemia, liver disease, adrenal insufficiency, excess insulin	Hyperglycemia, certain types of diabetes, prediabetes, pancreatitis, hyperthyroidism
Sodium	An electrolyte, which keeps your body in balance	136 - 144 mEq/L	Use of diuretics, diarrhea, adrenal insufficiency	Kidney dysfunction, dehydration, Cushing's syndrome
Potassium	An electrolyte and mineral	3.7 - 5.2 mEq/L	Use of diuretics or corticosteroids (such as prednisone or cortisone)	Acute or chronic kidney failure, Addison's disease, diabetes, dehydration
Chloride	An electrolyte	96 - 106 mmol/L	Emphysema, chronic lung diseases	Dehydration, Cushing's syndrome, kidney disease
Carbon Dioxide	Gaseous waste product from metabolism	20 - 29 mmol/L	Kidney disease, certain toxic exposures, severe infection	Lung diseases, including COPD
BUN: Blood urea Nitrogen	A waste product formed in liver and carried to kidneys, filtered out of blood, excreted through urine.	7 - 29 mg/dL	Malnutrition	Liver or kidney disease, heart failure
Creatinine	A chemical waste produced by muscle metabolism	0.8 - 1.4 mg/dL	Low muscle mass, malnutrition	Chronic or temporary decrease in kidney function
Bun/Creatinine Ratio		10:1 to 20:1	Malnutrition	Blood in bowels, kidney obstruction, dehydration
Calcium	A mineral stored in the hard part of bones	8.5 - 10.9 mg/dL	Calcium, magnesium, or Vitamin D deficiency; malnutrition; pancreatitis; neurological disorders	Kidney disease, hyperparathyroidism, cancer, excess vitamin D int

Blood Test #1: Comprehensive Metabolic Panel - Continued

	What It Is	Normal Results	What a low number may mean	What a high number may mean	
Protein	Chains of amino acids essential for the growth and repair of cells	6.3 - 7.9 g/dL	Malnutrition, liver or kidney disease	Liver or kidney disease, dehydration, multiple myeloma	
Albumin	Protein that keeps fluid from leaking out of blood vessels and that nourishes tissues and transports nutrients through the body	3.9 - 5.0 g/dL	Liver or kidney disease, malnutrition	Dehydration	
Bilirubin	A pigment in the bile, a digestive fluid produced by the liver	0.2 - 1.9 mg/dL	Generally not a concern	Liver disease, bile duct disorder or red cell destruction	
Alkaline Phosphatase (ALP)	Enzyme found in the liver and bones	44 - 147 IU/L	Malnutrition	Paget's disease or certain cancers that spread to bone, bile duct obstruction, liver cancer	
Alanine Aminotransferase (ALT)	Enzyme found mostly in the liver	8 - 37 IU/L	Generally not a concern	Certain toxins such as excess acetaminophen or alcohol, hepatitis	
Aspartate Aminotransferase (AST)	Enzyme found in liver, muscle, and other tissues	10 - 34 IU/L	Generally not a concern	Excess acetaminophen, hepatitis, muscle injury	

Key-mg:milligram g:gram mmol:millimole mEq:milliequivalent dL:deciliter IU:international unit L:liter mL:microliter pg:picogram fL:femtoliter

Blood Test #2: Complete Blood Count (CBC)		What it does: Measures essential components of the blood			Pg 3/4
	What It Is	Normal Results	What a low number may mean	What a high number may mean	
White Blood Cell Count (WBC)	White blood cells defend the body against infection	4,500 - 10,000 cells/mcL	Autoimmune illness, bone marrow failure, chemotherapy, viral infections	Infection, inflammation, cancer, leukemia, intense exercise, stress, corticosteroids	
Red Blood Cell Count (RBC)	Red blood cells pick up oxygen from the blood and deliver it to tissues throughout the body	Male: 4.7 - 6.1 Mill/mcL Female: 4.2 - 5.4 Mill/mcL	Iron, vitamin B ₁₂ , or folate deficiency; bone marrow damage	Dehydration, renal problems, pulmonary or congenital heart disease	
Hemoglobin	Oxygen-carrying pigment in red blood cells	Male: 13.8 - 17.2 g/dL Female: 12.1 - 15.1 g/dL	Iron, vitamin B ₁₂ , or folate deficiency; bone marrow damage	Dehydration, renal problems, pulmonary or congenital heart disease	
Hematocrit	The percentage of red blood cells in the blood	Male: 40.7% - 50.3% Female: 36.1% - 44.3%	Iron, vitamin B ₁₂ , or folate deficiency; bone marrow damage	Dehydration, renal problems, pulmonary or congenital heart disease	
Mean Corpuscular Volume (MCV)	Average size of red blood cells	80 - 95 fL	Iron deficiency	Vitamin B ₁₂ or folate deficiency	
Mean Corpuscular Hemoglobin (MCH)	The amount of hemoglobin in red blood cells	27 - 31 pg	Iron deficiency	Vitamin B ₁₂ or folate deficiency	
Platelet Count	Measures number of platelets — colorless blood cells integral to clotting	150 - 400 Thous/mcL	Viral infections, lupus, leukemia, chemotherapy, pernicious anemia (due to vitamin B ₁₂ deficiency)	Leukemia, myeloproliferative disorders (which cause blood cells to grow abnormally in bone marrow), inflammatory conditions	
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Blood Test #3: Lipid Panel		What it does: Measures coronary artery disease risk			Pg 4/4
	Desired Levels				
Total Cholesterol	<200 mg/dL				
HDL	>40 mg/dL				
LDL	<130 mg/dL				
Triglycerides	<150 mg/dL				
* Abnormal test results are fairly common, especially among older adults. Schedule a doctor's appointment after undergoing lab work.					