Lab Values Chart

Name of Test	Purpose	Normal Range (Adult)	High Results Mean	Low Results Mean
Albumin (blood)	Diagnose, evaluate, and monitor disease state of cancer, intestinal/renal protein-wasting states, immune disorders, liver dysfunction, impaired nutrition, and chronic edematous states	3.5 - 5	Dehydration	Malnutrition, liver disease, pregnancy, and overhydration
Alkaline phosphatase (ALP) (blood)	Used to detect and monitor diseases of the liver or bone	30-120	Primary cirrhosis, liver tumor, Paget's disease, Rheumatoid arthritis, myocardial infarction	Scurvy (Vitamin C deficiency), pernicious anemia, malnutrition, hypophosphatemia, milk-alkali syndrome
ALT	Identify diseases of the liver	4-36	Hepatitis, hepatic necrosis, cirrhosis, hepatic tumor, obstructive jaundice	No low results available
Ammonia (NH3)	Supports diagnosis of liver disease	80-110	Liver disease, Reye's Syndrome	Essential or malignant hypertension
Amylase (AMS)	Detects and monitors the course of pancreatitis	60-120	Pancreatitis	No low results available
Antidiuretic Hormone (ADH)	Performed on people complaining of increased thirst or frequent urination	1-5 or 1.5 (depends on unit of measure)	Syndrome of Inappropriate Antidiuretic Hormone (SIADH), Diabetes Inspidus (DI), Central nervous system tumors	Low in people who have had the pituatary removed, Increased blood volume
Antinuclear Antibody (ANA)	Diagnose lupus and other autoimmune diseases	Negative (< 1:20)	Lupus, rheumatoid arthritis, scleroderma	No low results available
AST	Used to evaluate suspected coronary artery occlusive disease or hepatocellular disease	0-35	Heart diseases, liver diseases, skeletal muscle diseases, anemia, pancreatitis	Acute renal disease, beriberi, diabetic ketoacidosis, pregnancy, chronic renal dialysis
Basic Metabolic Panel (BMP)	Detects various chemical components in blood-includes electrolytes, BUN, Creatinine. Measures sugar glucose levels, electrolyte, fluid balance and kidney function.	Per each individual test-see components - Sodium, Potassium, Calcium, Chloride, Carbon Dioxide or Bicarbonate, Glucose, Blood Urea Nitrogen(BUN), Creatinine	Dependent on test – refer to each component	Dependent on test – refer to each component

Bilirubin (blood)	Evaluates liver function and patients with hemolytic anemias	0.3-1.0	Gallstones, extrahepatic duct obstruction (tumor, inflammation, gallstones, scarring, surgical trauma), lover metastasis, cholestasis from drugs, Dubin-Johnson syndrome, Rotor's syndrome, anemias, cirrhosis	No low results available
Blood Urea Nitrogen (BUN)	Indirect measurement of kidney function	10-20 mg/dl	Low blood volume, shock, kidney disease, drug toxicity to the kidney	Liver failure, overhydration, nephrotic (kidney) syndrome
Calcium (Ca)	Evaluates parathyroid function and calcium metabolism	9.0-10.5	Hyperparathyroidism, metastatic tumor to bone, Paget's disease	Hypoparathyroidism, renal failure, vitamin D deficiency
Carbon Dioxide (CO2)	measures levels of carbon dioxide in the blood	23-30	vomiting, COPD, use of some diuretics	diarrhea, use of some diuretics, kidney disease
Chloride (Cl)	used with other electrolytes to determine acid-base status and hydration status	98-106	Dehydration	Overhydration
Cholesterol (CH, Chol) (Part of lipid panel)	Determines risk factor for coronary artery disease	< 200	Familial high cholesterol and lipids	Malabsorption, malnutrition
Complete Blood Count with Differential (CBC with diff)	Provides information about various organ systems-major components listed below	Per each individual test-see components on this list – RBC, hemoglobin, hematocrit, WBC, Platelet	Dependent on test – refer to components	Dependent on test – refer to components
Creatinine (Cr)	Used to diagnose impaired kidney function	Male: 0.6-1.2 Female: 0.5-1.1	Kidney disease	Debilitation, decreased muscle mass
Electrolytes (lytes)	Measures levels of active chemicals in the body-see individual components below	Per each individual test-see components on this list	Dependent on test	Dependent on test

Erythrocyte Sedimentation Rate (ESR)	Used to detect illnessess associated with acute and chronic infection, inflammation (Collagen-Vascular Disease), advanced neoplasm and tissue necrosis or infarction.	Male: up to 15mm/hr Female: up to 20mm.hr	Chronic renal failure, Malignant diseases, Bacterial infections, Inflammatory diseases, Necrotic diseases, Diseases associated with increased proteins, and Severe Anemias	Sickle cell anemia, Spherocytosis, Hypofibrinogenemia, and Polycythemia vera
Ferritin (FTN, Fer, FT, Fe, FRT Ferr, Fn)	Determines iron deficiency anemia	Male:12-300 Female 10-150	Diseases where there I too much iron stored, such as hemochromatosis	Iron deficiency anemia, hemodialysis
Glucose (GLU or BS)	Direct measurement of blood sugar level – maybe done as fasting	70-105	Diabetes, stress response	too much insulin production, hypothyroidism, insulin overdose
Hematocrit (Hct)	Indirect measurement of red blood cell number and volume	Male: 42%-52% Female 37%-47%; Values may be slightly decreased in the elderly	Congenital heart disease, dehydration, COPD	Anemia, cirrhosis, hemorrhage
Hemoglobin A1C (HbA1c)	Monitors diabetes treatment and provides a picture of glucose control over a 3 month period	Good diabetic control: 2.5-5.9 Fair diabetic control 6-8 Poor diabetic control >8	poorly controlled diabetes or newly diagnosed diabetes	anemia, chronic blood loss, chronic renal failure
Hemoglobin (Hb or Hgb)	Rapid indirect measurement of the red blod cell count	Male: 14-18 Female: 12-16 Values may be slightly decreased in the elderly	Congenital heart disease, dehydration, COPD	Anemia, hemorrhage, cirrhosis of the liver
Iron level (Fe)	Direct measurement of bound iron in the blood	Male: 80-180 Female: 60-160	Diseases where there I too much iron stored, such as hemochromatosis	Insufficient dietary intake of iron or poor absorption of iron, iron deficiency anemia
Lipase (LPL)	used to evaluate pancreatic disease	0-160	pancreatic disease, biliary disease, peptic ulcer disease	No low results available
Liver Function Tests (LFT)	Measures function of the liver	differs according to component of test – refer to each component - ALT, AST, Alkaline phosphatase, PT, INR, Albumin, and bilirubin	liver disease or decreased function	malnutrition, anemia

Test	Purpose	Normal Range	High Results	Low Results
Platelets (PLT)	Checks blood's ability to clot	150,000-400,000	Malignant disorders, rheumatoid arthritis, anemia	Hemorrhage, infection, cancer therapy
Potassium (K)	evaluates and monitors fluid and electrolyte status; provides information on heart function	3.5-5.0	Excessive dietary intake, kidney disease or failure, Addison's disease	Deficient dietary intake, use of diuretics, Cushing's syndrome
Prolactin (PRL)	Used to diagnose and monitor prolactin secreting tumors of the pituitary	Male: 0-20 Female: 0-25	Amenorrhea (no menstrual period), pituitary tumor	Sheehan's syndrome-death of pituatary gland due to circulatory collapse after having a child
Prostatic Specific Antigen (PSA)	Screening method for prostate cancer. Also monitors the disease after treatment	< 4	Prostate cancer, benign prostatic hypertrophy (BPH), Prostatitis	No low results available
Prothrombin Time (PT) with International Normalized Ratio (INR)	Checks blood clotting; regularly checked on people taking anticoagulants, such as Coumadin	>1.5-2.0 times the control. INR number is more specific, and physician dtermines what number should be based on why the individual takes Coumadin. Number will be higher for people with a prosthetic heart valve.	Blood too thin	Blood too thick
Red Blood Cell Count (RBC)	Used to evaluate anemia; tells number of circulating red blood cells	Male: 4.7-6.1 Female 4.2-5.4	Illness, high altitude, congenital heart disease, chronic obstructive pulmonary disease (COPD)	Anemia, hemorrhage, cirrhosis of the liver
Rheumatoid Factor (RF)	Helps diagnose rheumatoid arthritis	Negative	Rheumatoid arthritis or other autoimmune diseases	No low results available
Sodium (Na)	evaluates and monitors fluid and electrolyte status	136-145	increased dietary intake, Cushing's syndrome,	Decreased dietary intake, Addison's disease, excessive oral water intake
Thyroid Stimulating Hormone (TSH)	Used to diagnose hypothyroidism	2-10 mU	Hypothyroidism, thyroiditis,	Secondary hypothyroidism, hyperthyroidism

Thyroxine (T4)	Assess thyroid function and monitors replacement therapy or suppressive therapy (when someone is taking Synthroid or Tapazole, for example)	Male 4-12 Female: 5-12	Hyperthyrodisim (Grave's disease), Acute thyroiditis	Hypothyroidism, pituitary insufficiency
White Blood Cell Count (WBC)	Evaluates infection or immunosuppression	5,000-10,000	Infection, leukemic cancer, steroid usage	Drug toxicity, bone marrow failure, overwhelming infections
Drug Levels	Monitors level of medication in the blood		Too much medication	Too little medication
Depakote		50-100		
Digoxin		0.8-2.0		
Dilantin		10-20		
Lithium		0.8-1.3		
Phenobarbital		4.0-12.0		
Tegretol		10-20		
Reference: Mosby's Manual of Diagnostic and Laboratory Tests, Second Edition				

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