

Common Laboratory Values

CBC			
Test	Normal value	Function	Significance
Hemoglobin	10.5-18 g/dL	Measures oxygen carrying capacity of blood	Low: hemorrhage, anemia High: polycythemia
Hematocrit	32-52%	Measures relative volume of cells and plasma in blood	Low: hemorrhage, anemia High: polycythemia, dehydration
Red blood cell	4-6 million/mm ³	Measures oxygen-carrying capacity of blood	Low: hemorrhage, anemia High: polycythemia, heart disease, pulmonary disease
White blood cell		Measures host defense against inflammatory agents	Low: aplastic anemia, drug toxicity, specific infections High: inflammation, trauma, toxicity, leukemia
Infant	6,000-14,000/mm ³		
4-7 y	4,000-12,000/mm ³		
8-18 y	4,000-10,500/mm ³		
Differential Counts			
Test	Relative counts	Absolute counts	Significance
Neutrophils (segs)	54-62%	3,000-5,800/mm ³	Increase in bacterial infections, hemorrhage, diabetic acidosis <1,000/mm ³ : patient at increased risk for infection – defer elective dental treatment
Neutrophils (bands)	3-5%	150-400/mm ³	Increase in bacterial infections, trauma, burns, surgery, acute hemolysis or hemorrhage
Lymphocytes	25-30%	1,500-3,000/mm ³	Viral and bacterial infections, acute and chronic lymphocytic leukemia, antigen reaction
Eosinophils	1-3%	50-250/mm ³	Increase in parasitic and allergic conditions, blood dyscrasias, pernicious anemia
Basophils	0-0.75%	15-50/mm ³	Increase in types of blood dyscrasias
Monocytes	3-7%	285-500/mm ³	Hodgkin's disease, lipid storage disease, recovery from severe infections, monocytic leukemia
Bleeding Screen			
Test	Normal value	Function	Significance
Prothrombin time	12.7-15.4 sec	Measures extrinsic clotting of blood	Prolonged in liver disease, impaired Vitamin K production, surgical trauma with blood loss
Partial thromboplastin time	By laboratory control	Measures intrinsic clotting of blood, congenital clotting disorders	Prolonged in hemophilia A, B, and C and Von Willebrand's disease
Platelets	150,000-400,000/mL	Measures clotting potential	Increased in polycythemia, leukemia, severe hemorrhage; decreased in thrombocytopenia purpura
Bleeding time (adult)	<7.1 min	Measures quality of platelets	Prolonged in thrombocytopenia
International Normalized Ratio (INR)	Without anticoagulant therapy: 1; Anticoagulant therapeutic range: 2-3	Measures extrinsic clotting function	Increased with anticoagulant therapy
Urinalysis			
Test	Normal value	Function	Significance
Volume	1,000-2,000 mL/day		Increased in diabetes mellitus, chronic nephritis
Specific gravity	1.015-1.025	Measures the degree of tubular reabsorption and dehydration	Increased in diabetes mellitus; decreased in acute nephritis, diabetes insipidus, aldosteronism
pH	5.0-9.0	Reflects acidosis and alkalosis	Acidic: diabetes, acidosis, prolonged fever Alkaline: urinary tract infection, alkalosis
Casts	1-2 per high power field		Renal tubule degeneration occurring in cardiac failure, pregnancy, and hemoglobinuric-nephrosis
Electrolytes			
Test	Normal value	Function	Significance
Sodium (Na)	134-143 mmol/L		Increased in Cushing's syndrome
Potassium (K)	3.3-4.6 mmol/L		Increased in tissue breakdown
Bicarbonate (HCO ₃)	22-29 mmol/L	Reflects acid-base balance	
Chloride (Cl)	98-106 mmol/L		Increased in renal disease and hypertension
Markers			
Test	Normal value	Significance	
C-reactive protein (CRP) <i>range is age dependent</i>	M: 0.08-1.12 mg/dl F: 0.08-1.0 mg/dl	Increase in infection; indicates an acute phase of the inflammatory metabolic response	

References

- Kliegman, RM, Stanton BF, St Geme JW, Schor NF. Nelson Textbook of Pediatrics, 20th ed. Philadelphia, Pa.: Elsevier; 2016.
- Kasper DL, Fauci AS, Hauser SL, Longo DL, Jameson JL, Loscalzo J, eds. Harrison's principles of internal medicine. 19th ed. New York, N.Y.: Mc Graw-Hill; 2015.