

Blood Serum Chemistry- Normal Values

Constituent	Typical Normal Range
<u>Electrolytes</u>	
Bicarbonate (total)	18-30 mEq/L
Calcium (total)	9-11 mg/dL; 4.5-5.5 mEq/L
Chloride	98-106 mEq/L
Magnesium	1.8-3.6 mg/dL; 1.5-3.0mEq/L
Phosphorus	3-4.5 mg/dL; 1.8-2.3 mEq/L (adults) 4-6.5 mg/dL; 2.3-3.8 mEq/L (children)
Potassium	3.5-5.5 mEq/L
Sodium	135-147 mEq/L
<u>Enzymes</u>	
Alkaline Phosphatase	50-60 U/L
Amylase	53-123 U/L
Creatine Kinase (CK, CPK)	38-174 U/L (males) 96-140 U/L (females)
Lipase	10-150 U/L
ALT (GPT)	0-30 U/L
Alanine aminotransferase (Glutamic-pyruvate transaminase)	
AST (GOT)	0-40 U/L
Aspartate aminotransferase (Glutamic-oxaloacetic transaminase)	
<u>Other</u>	
Albumin	3.5-5.5 g/dL
Bilirubin	< 1.0 mg/dL total < 0.4 mg/dL direct (glucuronide- or sulfate-conjugated)
Cholesterol	<225 mg/dL (depends on age)
Creatinine	1.0-2.0 mg/dL
Glomerular Filtration Rate (GFR)	90 - 120 mL/min/1.73 m ²
Globulin	1.5-3.5 g/dL
Glucose	80-120 mg/dL
Hemoglobin A1c (HbA1c)	< 5.7%
Protein (total)	6.3-8.0 g/dL
C-Reactive protein (CRP)	< 1.0 mg/dL; < 10 mg/L
Triglycerides	40-200 mg/dL
Urea (Blood Urea Nitrogen- BUN)	6-20 mg/dL
Uric Acid	2.0-4.0 mg/dL
mEq/L- milliequivalents of solute per litre of solvent	mg/dL- milligrams per deciliter
U/L- Units/Liter	g/dL- grams per deciliter

Notes: The normal ranges in each laboratory depend on the local population, test methodology and conditions of assay, units, and a variety of additional circumstances. * The units for enzyme activities are especially sensitive to such circumstances. The normal ranges above are typical, but the normal ranges established for each laboratory should be used for most purposes. The units g/dL (grams per deciliter) and mg/dL are sometimes expressed as g% and mg%, or g/100 mL and mg/100 mL.

Blood Hematology- Normal Values

Measure (abbreviations, synonyms)

Typical Normal Range

Whole Blood

Hematocrit (HCT; packed cell volume)	38-54% (men) 36-47% (women)
Hemoglobin (Hb)	14-18 g/dL (men) 12-16 g/dL (women) 12-14 g/dL (children) 14.5-24.5 g/dL (newborns)

Complete Blood Count (CBC)

per mm³

percentage

Erythrocytes (Red blood cells; RBCs)	4.5-6 x10 ⁴ 4.3-5.5 x 10 ⁴ (women)	
Reticulocytes		0-1 % of RBCs
Leukocytes (total)	5000-10000	
Myelocytes	0	0 % of leukocytes
Juvenile neutrophils	0-100	0-1 %
Band neutrophils	0-500	0-5 %
Segmented neutrophils	2500-6000	40-60 %
Lymphocytes	1000-4000	20-40 %
Eosinophils	50-300	0-5 %
Basophils	0-100	0-1 %
Monocytes	200-800	4-8 %
Platelets	200,000-500,000	

RBC Measurements

Diameter	5.5-8.8 μm
Mean corpuscular volume (MCV)	80-94 μm ³
Mean corpuscular hemoglobin (MCH)	27-32 pg
Mean corpuscular hemoglobin concentration	33.4-35.5 g/dL

Miscellaneous

Prothrombin time (PT)	10-20 seconds	0.8-1.2 INR (Internal Normalized Ratio)
Activated Partial Thromboplastin Time (aPTT)	30-45 seconds	

μm- micrometers

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