

REFERENCE VALUES FOR COMMON LABORATORY TESTS¹

Serum Chemistries	Reference Range
Alanine aminotransferase (ALT)	10–40 U/L
Albumin	3.5–5 g/dL (adults) 3.4–4.2 g/dL (young children)
Alkaline phosphatase (ALP)	Varies with age: 30–120 IU/L (adults) 150–420 IU/L (children)
Ammonia	40–80 mcg/dL
Amylase	27–131 U/L
Aspartate aminotransferase (AST)	10–30 U/L
Bilirubin, direct	0.1–0.3 mg/dL
Bilirubin, total	0.3–1.2 mg/dL
Blood urea nitrogen (BUN)	8–23 mg/dL (adults) Lower in children
Calcium, ionized	4.6–5.1 mg/dL
Calcium, total serum	8.2–10.2 mg/dL
Carbon dioxide (venous) (CO ₂)	22–28 mEq/L
Chloride (Cl)	96–106 mEq/L
C-reactive protein (CRP)	0–10 mg/L
High-sensitivity CRP (hs-CRP)	< 3 mg/L
Creatinine kinase (CK)	40–150 U/L
Creatinine, serum (SCr)	0.6–1.2 mg/dL (adults) 0.2–0.7 mg/dL (children)
Creatinine clearance (CrCl)	75–125 mL/minute/1.73 m ²
γ-Glutamyl transpeptidase	2–30 U/L
Glucose, serum	70–110 mg/dL
Hemoglobin A1C (A1C)	< 5.7%
Lactate dehydrogenase (LDH)	100–200 U/L
Lipase	< 95 U/L
Magnesium	1.3–2.1 mEq/L
Osmolality, serum	275–295 mOsm/kg
Phosphorus (PO ₄)	2.3–4.7 mg/dL (adults) 3.7–5.6 mg/dL (children)
Potassium	3.5–5.0 mEq/L
Prealbumin	19.5–35.8 mg/dL
Sodium	136–142 mEq/L
Uric acid, serum	4–8 mg/dL
Vitamin D	20–50 ng/mL
Parathyroid Hormone (PTH)	10–65 ng/L

Hematology/Coagulation	Reference Range
Ferritin	15–200 ng/mL
Hematocrit (Hct)	42%–50% (men) 36%–45% (women)
Hemoglobin (Hgb)	14–18 g/dL (men) 12–16 g/dL (women)
International normalized ratio (INR)	0.9–1.1
Mean corpuscular hemoglobin (MCH)	26–34 pg/cell
Mean corpuscular hemoglobin concentration (MCHC)	33–37 g/dL
Mean corpuscular volume (MCV)	80–100 fL/cell
Partial thromboplastin time (PTT)	25–40 seconds
Platelet count (Plt)	150,000–350,000 cells/mm ³
Prothrombin time (PT)	10–13 seconds
Red blood cell count (RBC)	4.5–5.9 × 10 ⁶ cells/mm ³ (men) 4.1–5.1 × 10 ⁶ cells/mm ³ (women)
Reticulocyte % of red blood cells	0.5%–1.5%
White blood cell count (WBC)	4.5–11.0 × 10 ³ cells/mm ³

Serum Lipids	Reference Range
Cholesterol, total (TC), desirable	< 200 mg/dL
High-density lipoprotein (HDL) cholesterol, desirable	≥ 40 mg/dL (men) ≥ 50 mg/dL (women)
Low-density lipoprotein (LDL) cholesterol	< 130 mg/dL
Triglycerides (TG)	< 150 mg/dL
Blood Gases	
Oxygen saturation	≥ 95%
Naturetic Peptides	
Brain-type naturetic peptide (BNP)	< 100 pg/mL
NT-proBNP	< 125 pg/mL (< 74 years of age) < 450 pg/mL (75–99 years of age)
Urinalysis	
Leukocyte esterase, nitrite, protein, blood, ketones, bilirubin, glucose	Negative
pH	4.5–8.0
Specific gravity	1.010–1.025
Urine microalbumin/creatinine	< 30 µg/mg
Thyroid Function	Reference Range
Thyroid-stimulating hormone (TSH)	0.5–5 mIU/L
Total T4	4.9–11.7 mg/dL
Total T3	0.7–1.5 ng/dL
Free T3	1.7–3.7 pg/mL

¹Values given in this table are commonly accepted reference ranges compiled from several sources. Patient-specific goals may differ depending on age, sex, clinical condition, and the laboratory methodology used to perform the assay.

Information from: AMA Manual of Style. Available at www.Amanualofstyle.com/page/si-conversion-calculator. Last accessed 11/21/2018; Lee M, ed. Basic Skills in Interpreting Laboratory Data, 6th ed. Bethesda, MD: American Society of Health-System Pharmacists, 2017; DiPiro JT, Talbert RL, Yee GC, et al., eds. Pharmacotherapy: A Pathophysiologic Approach, 10th ed. New York: McGraw-Hill, 2017; American College of Physicians (available at: <https://annualmeeting.acponline.org/sites/default/files/shared/documents/for-meeting-attendees/normal-lab-values.pdf>); <https://emedicine.medscape.com/article/2086909-overview>; <http://www.diabetes.org/diabetes-basics/diagnosis/>