

Nursing Lab Values and What They Mean

Lab Test	Normal Range	Purpose of Lab	Reasons for High	Reasons for Low
BMP (Basic Metabolic Panel)				
Glucose	70-110 mg/dL	Monitor in diabetes patients to adjust insulin dosage	diabetes mellitus, acute stress response, cushing syndrome	Insulinoma, hypothyroidism, hypopituitarism, addison disease
Calcium (Ca)	9-10.5 mg/dL	Monitor renal, hyperparathyroidism, malignancies	Hyperparathyroidism, Lung or renal carcinoma, Addison disease,	Hypoparathyroidism, Renal failure, Rickets, Vit D deficiency
Sodium (Na)	136-145 mEq/L	Evaluate the between sodium intake and renal excretion	Cushing syndrome, excessive sweating, Diabetes insipidus	Addison disease, diarrhea, vomiting, diuretics, CHF, SIADH, Ascites
Potassium (K)	3.5-5.0 mEq/L	Monitor renal function & maintain cardiac function	Renal failure, hemolysis, infection, acidosis	Burns, diarrhea, vomiting, diuretics, cushing syndrome,
Blood Urea Nitrogen (BUN)	10-20 mg/dL	Indirectly measures kidney function through liver function	Hypovolemia, shock, burns, dehydration, CHF, MI, GI bleeding, Sepsis	Liver failure, overhydration caused by fluide overload or SIADH, malnutriton
Creatinine (Cr)	Male 0.6-1.2 mg/dL Female 0.5-1.1 mg/dL	Directly measures kidney function	Glomerulonephritis, pyelonephritis, urinary tract obstruction, shock, dehydration, CHF	Debilitation, muscular dystrophy, myasthenia gravis
CBC (Complete Blood Count)				
Red Blood Cell Count (RBC)	Male 4.7-6.1 Female 4.2-5.4	Monitor for anemia	High altitude, Congenital heart disease, dehydration	Anemia, hemorrhage, hemolysis, Leukemia
Hemoglobin (Hgb)	Male 14-18 g/dL Female 12-16 g/dL	Reflects the # of red blood cells in the blood. Vehicle for O2 and CO2 transport	Congenital heart disease, COPD, CHF, high altitudes, dehydration	Anemia, hemorrhage, hemolysis, nutritional deficiency
Hematocrit (Hct)	Male 42%-52% Female 37%-47%	measure of red blood cell count and used to measure anemia	Congenital heart disease, severe dehydration, eclampsia	Anemia, hyperthyroidism, cirrosis, hemolytic reactions, hemorrhage
White Blood Cell count (WBC)	5,000-10,000 /mm ³	Indicates presence of an infection	Infection, Leukemic neoplasia, trauma, stress, inflammation	Drug toxicity, bone marrow failure, overwhelming infections
Platelet (Plt)	150,000-400,000 /mm ³	assess bleeding, monitor thrombocytopenia or bone marrow failure	Malignant disorder, Rheumatoid arthritis, Iron deficiency anemia	Hypersplenism, hemorrhage, Immune thrombocytopenia, Leukemia
Coagulation Tests				
Prothrombin Time (PT)	11-12.5 seconds	Measures clotting ability of factors I, II, V, VII and X	Cirrhosis, hepatitis, vitamin K deficiency, hereditary factor deficiency, DIC	increased risk for blood clots
International normalized ratio (INR)	0.8-1.1	Tests coagulation	Blood is too thin, increased risk for bleeding, on warfarin (coumadin) therapy	Blood not thin enough while on warfarin (coumadin) therapy
Partial Thromboplastin Time (PTT)	60-70 seconds	Used to measure pathway for clot formation & monitor the thinning of blood during Heparin therapy	DIC, Heparin administration, hemophilia, cirrhosis of the liver, vitamin K deficiency	Early stages of DIC, Extensive cancer
Activated Partial Thromboplastin time (aPTT)	30-40 seconds	Used to measure pathway for clot formation		
D-Dimer	<250 ng/mL	Assess for the presence of a clot (PE, DVT)		

