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**/mm3	Indicates presence of an infection	Infection, Leukemic neoplasia, trauma, stress, inflammation	Drug toxicity, bone marrow failure, overwhelming infections
Platelet **(Plt)**	**150,000-400,000** /mm3	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)		