Common Laboratory Tests

Pediatric reference ranges may be age- and sex-specific. The reference values supplied by the laboratory performing the test should be used to determine if a result is abnormal.

Complete Blood Count		
Test	**Function**	**Significance**
Hemoglobin	Measures oxygen-carrying capacity of blood	Low: hemorrhage, anemia High: polycythemia
Hematocrit	Measures relative volume of cells and plasma in blood	Low: hemorrhage, anemia High: polycythemia, dehydration
Red blood cell	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

Differential Counts	
Test	**Significance**
Neutrophils	Increase in bacterial infections, hemorrhage, diabetic acidosis. Absolute Neutrophil Count (ANC) <1,000/mm^3: patient at increased risk for infection. Defer elective dental treatment.
Lymphocytes	Viral and bacterial infections, acute and chronic lymphocytic leukemia, antigen reaction
Eosinophils	Increase in parasitic and allergic conditions, blood dyscrasias, pernicious anemia
Basophils	Increase in types of blood dyscrasias
Monocytes	Hodgkin's disease, lipid storage disease, recovery from severe infections, monocytic leukemia

Bleeding Screen		
Test	**Function**	**Significance**
Prothrombin time	Measures extrinsic clotting of blood	Prolonged in liver disease, impaired Vitamin K production, surgical trauma with blood loss
Activated partial thromboplastin time	Measures intrinsic clotting of blood, congenital clotting factor deficiency	Prolonged in hemophilia A, B, and C and Von Willebrand's disease
Platelets	Measures clotting potential	Increased in polycythemia, inflammation/infection, severe hemorrhage; decreased in leukemia, immune thrombocytopenia purpura
Bleeding time (adult)	Measures quality of platelets	Prolonged in thrombocytopenia
International Normalized Ratio (INR)	Measures extrinsic clotting function	Increased with anticoagulant therapy

Urinalysis		
Test	**Function**	**Significance**
Volume		Increased in diabetes mellitus, chronic nephritis
Specific gravity	Measures the degree of tubular reabsorption and dehydration	Increased in diabetes mellitus; decreased in acute nephritis, diabetes insipidus, aldosteronism
pH	Reflects acidosis and alkalosis	Acidic: diabetes, acidosis, prolonged fever Alkaline: urinary tract infection, alkalosis
Casts		Renal tubule degeneration occurring in cardiac failure, pregnancy, and hemogobinuric-nephrosis

Electrolytes		
Test	**Function**	**Significance**
Sodium (Na)		Increased in Cushing's syndrome
Potassium (K)		Increased in tissue breakdown
Bicarbonate (HCO_3)	Reflects acid-base balance	
Chloride (Cl)		Increased in renal disease and hypertension

Markers	
Test	**Significance**
C-reactive protein (CRP) (age-related)	Increase in infection; indicates an acute phase of the inflammatory metabolic response
Hemoglobin A1C (HbA1C)	Increased in hyperglycemia; pre-diabetes: 5.7-6.4%; diabetes mellitus: >6.5%.