

Laboratory Results Explanation



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The following descriptions explain the meaning, purpose and significance of our most commonly ordered laboratory tests. Brief explanations for some of the most common causes of abnormal values are also noted, but are limited. Often times results are marginally out-of-range but normal or abnormal due to possible laboratory errors. You will notice that your copy of the results have your values and range of normal values. If you have questions that go beyond these explanations, contact us to set up an appointment to speak with your doctor.

Arthritis Panel

ANA – Elevated higher than 160:1 in lupus and other autoimmune problems.

Rheumatoid Factor (RF) – Elevated in rheumatoid arthritis.

Sedimentation rate (ESR) – A measure of inflammation in the blood stream. Elevated with any inflammation, including infection, arthritis, vasculitis and cancer.

Uric Acid – Elevated with gout.

Complete Blood Count (CBC)

White blood cells (WBC) – May indicate infection, elevated with systemic steroid use, decreased with autoimmune, some blood diseases, and many viral infections. May also be low with viral infections.

Red blood cells (RBC) – Elevated in dehydration, high altitude and in smokers and low in anemia, hemorrhages, cancers, fluid overload and pregnancy.

Hemoglobin (Hgb) and Hematocrit (Hct) – Elevated in smokers and those with polycythemia and low in anemia.

Mean Corpuscular Volume (MCV) – Elevated suggests Vitamin B12 or folic acid deficiency or increased alcohol consumption and low with iron deficiency.

Platelet count (PLT) – Elevation is rare, low counts suggest medication interactions, antibody formation or liver disease and blood clotting problems.

Glucose (blood sugar) – Elevated with diabetes or systemic steroids. **A1C (Hemoglobin A1C)**

– This is a 3 month average of blood sugars.

Heart Disease Risk

High-sensitivity C-Reactive Protein (hsCRP) – Inflammatory protein associated with cardiovascular disease risk.

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DISCLAIMER: INFORMATION PROVIDED IN THIS SHEET IS GENERAL IN CONTENT AND SHOULD NOT BE SEEN AS A SUBSTITUTE FOR PROFESSIONAL MEDICAL ADVICE. CONCERNS OVER MEDICAL CONDITIONS SHOULD BE DISCUSSED WITH YOUR PRIMARY CARE PHYSICIAN OR PAIN CARE SPECIALIST.

Iron Status

Iron – Elevated with over consumption of iron rich foods/supplements, iron overload and low in iron deficiency.

Ferritin – Iron storage protein is elevated in iron overload, infections, cancers and low in pregnancy and bowel disease or surgery.

Total Iron Binding Capacity (TIBC) – Elevated in chronic illness and infection.

Kidney Function

Blood Urea Nitrogen (BUN) – Elevated with kidney problems, recent surgery, dehydration or blood loss and low with liver disease, pregnancy and diets.

Creatinine (CR) – Elevated with kidney problems.

Electrolytes

· **Sodium (Na)** – Elevated with dehydration and low in patients who sweat profusely or are on diuretics (water pills).

· **Potassium (K)** – Elevated with kidney problems, potassium supplements, or certain diuretics and low in patients with kidney problems, vomiting or diarrhea.

Acid-Base Balance

· **Chloride (Cl)** – Elevated with dehydration, hyperventilation or kidney infection and low with vomiting and colitis.

· **Carbon Dioxide (CO₂)** – Elevated rare and low with dehydration, diarrhea, exercise and kidney failure.

Bone Metabolism

· **Calcium** – Elevated with alcoholism, exercise, hyperparathyroidism and some cancers and low with diarrhea, malabsorption or calcium/Vit D deficiency, pancreatitis and renal failure.

· **Phosphorus** – Elevated with low calcium, kidney problems and in hypoparathyroidism; low with alcoholism and vitamin D deficiency.

Lipid Panel

Total Cholesterol – Elevation increases risk of heart disease and stroke.

HDL – “Good” cholesterol.

LDL – “Bad” cholesterol.

Triglycerides (TG) – Another fatty substance in the blood. Elevated in “mixed” hyperlipidemia and often in diabetic patients.

Liver Function Tests (LFT)

Alanine aminotransferase (ALT or SGPT) – An enzyme produced in liver cells is elevated when cells are excessively damaged or die secondary to hepatitis (viral, alcoholic, medication-induced, etc.).

Aspartate aminotransferase (AST or SGOT) – An enzyme that is produced in muscle and liver (less specific than ALT) can be elevated in a 1:1 ratio with liver disease.

Alkaline phosphatase (Alk Phos) – An enzyme produced in the bile ducts, intestine, kidney, placenta and bone. Elevation in normal or only modestly elevated ALT and AST activities, suggests disease of the bile ducts, alone with some bone disorders and growing children up to age 22.

Bilirubin – The major breakdown product from old red blood cells are elevated with increased production, many different liver diseases and some non-liver diseases.

Proteins – Total proteins synthesized by the liver consist mainly of albumin and globulin are rarely elevated and low with poor liver function, malnutrition, some kidney disease and other rare conditions.

Cancer Screening

PAP smear – Positive if microscopic evidence of infectious irritation (Candida, HPV, etc) or pre- cancerous cells in WOMEN.

PSA (Prostate specific Antigen) – Elevated with prostate infections, benign prostate enlargement (BPH) and prostate cancer in MEN.

Thyroid Function

Thyroid Stimulating Hormone (TSH) – Sensitive measure of thyroid function and used to monitor thyroid replacement therapy.

T3 – Elevated in some thyroid diseases and low in malnutrition, severe acute illness and trauma.

T4 – Decrease with normal or elevated TSH suggests thyroid but with low TSH a pituitary disorder.

Urinalysis (UA) – Tests for evidence of a urinary tract infection and presence of blood, sugar, or protein in the urine. Also, it is used to test for opioid therapy and illicit drugs.

White Blood Cells – Indicates presence of possible infection.

Nitrites – Presence indicates infection.

Leukocyte estrase – Presence indicates infection.

Ketones – Elevated in diabetes, fasting, dieting or starvation.

Glucose – Elevated when blood sugar is over 180 and suggests diabetes.

Blood/Occult blood or RBCs – Presence suggests bleeding in the urinary tract, infection, or may be related to menstruation.

Protein – Presence may be seen with kidney problems, diabetes and bone cancer among other causes.

Urobilinogen – Presence may be seen in liver disease, breakage of blood cells and medication.