

# Understanding Blood Test Results

Blood tests are done as part of the risk assessment for life insurance. They screen for “silent” disorders that are not causing symptoms but may cause increased mortality risk such as kidney or liver disorders. They also assess current status in those with a known condition such as diabetes. Listed below are the basic screens done when testing. Normal ranges vary slightly depending on the laboratory doing the test, gender and age.

## Diabetes Screen

**Glucose** (60-109 MG/DL) is the main source of energy for living organisms. The major cause of elevated glucose is diabetes mellitus.

**Fructosamine** (0-1.5 MMOL/L) measures “glycated serum proteins”. It measures a person’s average blood sugar concentration over the past two or three weeks.

**Hemoglobin A1C** (glycohemoglobin – HbA1C) (3.0-6.0%) tests are used to confirm elevated glucose (blood sugar) and fructosamine readings. When an individual’s HbA1c is abnormally high, their blood sugar had been high in the past 1 to 2 months.

## Kidney Screen

**Blood Urea Nitrogen** (BUN) (5-25 MG/DL) is an end-product of protein metabolism. BUN levels are elevated in kidney disease or dehydration.

**Creatinine** is a waste product released from the muscle tissue and is extracted from the kidneys. Creatinine is elevated in kidney disorders or dehydration. Normal range depends on age, gender and build.

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### Lipid Screen

**Total Cholesterol** (<200 MG/DL) is a risk factor for coronary artery disease.

**High Density Lipoprotein (HDL)** (40-85 MG/DL), if high, is associated with protection against coronary artery disease. The quantity of HDL, as well as the ratio of HDL to total cholesterol, is important in determining one’s risk of coronary artery disease. Markedly elevated HDL may indicate heavy alcohol intake.

**Low-Density Lipoprotein (LDL)** (60-130 MG/DL) if high is associated with an increased risk of coronary artery disease.

**Total Cholesterol / HDL Ratio** is a predictor of coronary artery disease. A ratio of 4.5 or less is associated with lower risk of heart disease.

**Triglycerides** (10-190 MG/DL) are fats that provide a major reserve of energy for the body. Increases in triglycerides and other fats (lipids) can increase the risk of coronary artery disease. Ideally, triglycerides should be measured after an overnight fast.

**LDL/HDL Ratio** (<3.6 MG/DL) is calculated using total cholesterol, HDL and triglycerides measurements. The lower the LDL/HDL ratio, the less risk of coronary problems.

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## Liver Screen

**Alkaline Phosphates** (39-117 U/L) is an enzyme found primarily in the liver and bones. Elevated levels may indicate the presence of bone disorders or liver and bile duct disease.

**Total Bilirubin** (0.1-1.0 MG/DL) levels that are abnormally high occur in individuals with liver and gallbladder disease. Bilirubin is mildly elevated in Gilbert’s syndrome, but here, LFT’s will be normal.

**Aspartate Aminotransferase** (AST, SGOT) (0-39 U/L) is an enzyme found in the liver and in cardiac and skeletal muscle. Elevated levels can indicate liver and muscle disorders.

**Alanine Aminotransferase** (ALT, SGPT) (0-49 U/L) is an enzyme found in muscle, cardiac and liver cells. Elevated levels commonly occur with liver disease and can be proportional to the degree of disease.

**Gamma Glutamyl Transpeptidase** (GGT, GGTP) (0-65 U/L) is a liver enzyme. It is released as a result of damaged cell walls in people with various liver diseases. It is also sensitive to drugs and medications; for example Dilantin and alcohol.

**Total Protein** (6.3-8.2 G/DL) in serum includes two major components, albumin and globulin. Its measurement assesses the body’s ability to maintain its chemical balance.

**Albumin** (3.7-4.7 G/DL) is the largest portion of total serum protein. Decreased serum albumin can indicate many disorders, including advanced liver disease and malnutrition.

**Globulin** (2.3-3.9 G/DL) is a major component of serum proteins. It has many functions including maintenance of the immune system. Abnormal globulin levels, both elevated and decreased, may indicate infections, allergic reactions, immune disorders and other diseases.