

## Blood Chemistry Panel Information

(Submission of Blood Work must be current within 24 months)

### Blood Chemistry Panel must include:

**ALBUMIN** - Albumin is a common blood protein produced by the liver. Decreased albumin levels are commonly encountered in liver disease (i.e., cirrhosis), certain types of kidney disease or parasitic infections such as hookworm. High levels indicate dehydration and loss of protein.

**ALP OR ALKP - ALKALINE PHOSPHATASE** - this enzyme is found in many different tissues within the body, primarily liver, bone, intestines, and kidneys. Increased ALP levels can be seen with liver disease and gallbladder disorders. In addition, drugs such as corticosteroids and Phenobarbital can cause increased ALP levels. Very high ALP levels can be seen in dogs with adrenal gland disease as well.

**ALT - ALANINE AMINOTRANSFERASE** - This enzyme is considered to be liver specific in the dog. Increased levels of ALT are an indicator of damage to liver cells, as this enzyme is contained within the liver cell itself. When the cell is injured, the enzyme is released into the bloodstream and the increased level can be measured.

**AMYLASE** - Amylase is a digestive enzyme found in the pancreas. Increased levels of amylase often indicate pancreatic inflammation. However, many dogs with pancreatic disease have normal amylase levels.

**AST - Aspartate Aminotransferase** - an enzyme seen in the liver, heart, kidney, skeletal muscle and brain. The half life of the AST in the blood stream is much shorter than that of ALT; therefore the values of AST tend to drop more rapidly once liver function is resumed. AST elevations and ALT elevations should parallel each other in liver disease.

**BUN** - Blood urea nitrogen, is produced by the liver and excreted through the kidneys. Elevated levels can indicate kidney disease, but can also be caused by dehydration or urinary tract obstruction. Low BUN levels are seen in patients with chronic liver disease.

**CA - CALCIUM** - Blood calcium levels are influenced by diet, hormone level and blood protein levels. Decreased levels indicate acute damage to the pancreas or under-active parathyroid. Muscle twitches may occur in decrease calcium levels. Increased levels can be an indicator of certain types of tumors, parathyroid or kidney disease.

**CHOLESTEROL** - Cholesterol values in the dog are not thought to have as much significance with regards to the heart as they do in humans. Decreased levels are often found in an overactive thyroid gland or intestinal mal-absorption. Elevated levels of cholesterol are seen in a variety of disorders including hypothyroidism and diseases of the liver, kidneys, cardiovascular, diabetes and stress.

**CREATININE** - Creatinine values are used to evaluate kidney function in the dog. Elevated values are seen in chronic and acute kidney failure.

**GGT - Gamma Glutamyltransferase** - This enzyme is has its highest concentration in the kidneys and pancreas, but it is also found in the liver and other organs. The major proportion of GGT in the serum seems to come from the liver. Elevations of GGT in

disease seem to stem from new synthesis rather than leakage; therefore the changes seen due to disease are not spectacular. Large elevations of GGT are more commonly associated with pancreatitis and bile duct obstruction.

**GLUCOSE** - Increased blood levels of glucose in the dog often signal diabetes, whereas low blood sugar levels are seen with nutritional problems as well as pancreatic tumors.

**PHOSPHOROUS** - Elevated blood levels of phosphorous can signify kidney disease, parathyroid disease, or certain bone conditions.

**TBIL** - Total Bilirubin is a component of bile; bilirubin is secreted by the liver into the intestinal tract. High levels can lead to jaundice and indicate destruction in the liver and bile duct.

**TOTAL PROTEIN** - Total protein levels are increased in patients with dehydration or chronic inflammatory conditions. Increases indicate dehydration or blood cancer, bone marrow cancer. **Decreases** indicate malnutrition, poor digestion, liver disease, kidney disease, bleeding or burns.

**GLOB** - Decreased levels indicate problems with antibodies, immunodeficiency viruses or risk of infectious disease. Increased levels may indicate stress, dehydration, blood cancer, allergies, liver disease, heart disease, arthritis or diabetes.

## **CBC**

- Hematocrit (PCV)
- Hemoglobin
- Red Blood Cell Count
- White Blood Cell Count
- Neutrophils
- Lymphocytes
- Monocytes
- Eosinophils
- Basophils
- Platelets