

UNDERWRITING: Liver Disease

The liver is the body's largest organ (about the size of a football) and does more things than any other organ in the body. Your entire blood supply passes through your liver several times a day.

Your liver keeps you alive and healthy by metabolizing the food you eat, by breaking it down and digesting fatty acids. The liver produces bile and stores it in the gall bladder until it is needed. It produces blood-clotting factors and also converts sugar into glycogen, which it stores until the muscles need energy and it is secreted into the blood stream as glucose. It synthesizes proteins and cholesterol and converts carbohydrates and proteins into fats, which are stored for later use.

Filtering of the blood is one of the liver's primary functions. Blood is loaded with bacteria, endotoxins, antigen antibodies, and various other toxic substances from the intestine. A healthy liver clears almost 100% of the bacteria and toxins from the blood before it can join the general circulation.

Enzymatic detoxification in the liver neutralizes unwanted chemical compounds, such as drugs, pesticides, and enterotoxins from the intestine. Many are eliminated; others are converted into other forms that are then processed by various enzymes.

The liver manufactures approximately one quart of bile every day, needed to help eliminate toxic substances from the body. The bile emulsifies fats and fat-soluble vitamins in the intestine, improving their absorption. When the production of bile is inhibited (cholestasis), toxins remain in the liver longer with damaging side effects.

What Are Some of the Diseases of the Liver?

VIRAL HEPATITIS: Hepatitis B, C, and all its other alphabetic variations do not directly cause damage to the liver, rather the body's immune system protective response to the virus causes the damage in the process of fighting the virus.

FATTY LIVER (Steatosis): A condition where fat has accumulated within the liver cells. A longstanding chronic condition occurring in association with a variety of diseases, toxins,

drugs, alcohol abuse, diabetes, and obesity.

CIRRHOSIS: Characterized by widespread nodules in the liver combined with fibrosis. The fibrosis and nodule formation interferes with the blood flow through the liver. Decreased blood flow can cause the spleen to become enlarged. Decreased bilirubin secretion leads to jaundice.

With Cirrhosis, abnormal biochemical function of the liver can lead to numerous severe complications. Metabolism of estrogen, blood clotting factors, Triglycerides, cholesterol, and sugar are all diminished. Cirrhosis frequently causes insulin resistance and diabetes mellitus. In severe cases coma, brain swelling, and death can occur.

LAB TESTS FOR LIVER DISEASE

ALT - (SGPT): Alanine aminotransferase

ALT is an enzyme produced in hepatocytes, the major cell type in the liver. As hepatocytes are damaged or die, ALT leaks into the blood stream.

An accurate estimate of inflammatory activity can only be made by liver biopsy. Normal range is 5 - 30

AST - (SGOT): Aspartate aminotransferase

AST is an enzyme similar to ALT. It is less specific than ALT as it can be elevated by conditions other than liver disease. Normal range is 5 - 35

Alkaline Phosphatase:

A family of related enzymes produced in the bile ducts, intestine, kidney, placenta and bone. Elevated levels suggests disease of the bile ducts, or obstruction of the bile ducts.

Normal range is 30 -115

GGT -(GGTP): Gamma-glutamyl-transpeptidase

Elevation of GGT, especially along with elevated Alkaline Phosphatase strongly suggest bile duct disease.

Normal range is 5 - 65

Bilirubin:

Bilirubin is the major product that results from the destruction of old blood cells. It is removed and chemically modified in the liver. Elevated concentrations of Bilirubin in the blood suggest decreased secretion from the liver, or bile duct obstruction. Normal range is .2 - 1.1 - Jaundice is



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apparent at 3 mg

Albumin:

Albumin is the major protein that circulates in the bloodstream.

Albumin is synthesized by the liver and secreted into the bloodstream. Low serum albumin concentrations indicate poor liver function. Normal range is 3.5 - 4.6

Platelet Count:

Platelets are the smallest of the blood cells that are involved in clotting. If the spleen becomes enlarged as blood flow through the liver is restricted, platelets accumulate in the enlarged spleen. With chronic liver disease, the platelet count usually falls only after cirrhosis has developed.

Normal range is 150 - 400

Perhaps the liver, not the heart, should be celebrated in song and story. It is certainly one of our most vital organs. More people are Declined for elevated liver enzymes than for heart disease.

UNDERWRITER:

Defined as someone sitting in an ivory tower 900 miles from here, trained to say, "NO."

YOUR JOB:

To convince that underwriter, with truthful information, presented in as favorable a light as possible that it is desirable, even possible to say "YES."