

## Other Liver Laboratory Blood Tests

Name	Alias	Normal Values	
		Adult	Child
Albumin	Alb	3.4 to 5.4 g/dL	3.0 - 5.0 g/dL

Primarily by the liver, patients with chronic liver disease accompanied by cirrhosis often have levels of Albumin < 3 g/dl.

**Nursing Notes:** Large amounts of IV fluids can cause inaccurate test results.  
Albumin levels are decreased during pregnancy.  
Drugs that can increase albumin measurements include anabolic steroids, androgens, growth hormone & insulin

Name	Alias	Normal Values	
		Adult	Child
Ammonia	NH <sub>3</sub>	15-45 µg/dL	40-80 µg/dL

The liver converts Ammonia in the portal blood to urea for excretion by the kidneys. With impaired liver function, especially when combined with impaired portal blood flow, Ammonia levels rise.

**Nursing Notes:** Specimen must be drawn on ice and processed immediately.  
Hemolysis will cause elevated levels.  
Excessive protein intake will cause elevated levels.  
Patients should be fasting for 8 hours prior to sample collection.  
Patients should not smoke for 8-10 hours prior to sample collection.  
Patients should avoid strenuous activity 8 hours prior to sample collection.  
Many drugs can falsely elevate or decrease levels.

Name	Alias	Normal Values			
		IgA	IgD	IgG	IgM
Immunoglobulins	Serum Electrophoresis	140-400 mg/dL	0-8 mg/dL	700-1500 mg/dL	35-375 mg/dL

A variety of immunoglobulins are increased in patients with chronic liver disease. Elevations of IgA, IgD, IgG, and IgM can be suggestive of specific liver diseases.

**Nursing Notes:** Hemolysis of sample can interfere with results.  
Vaccinations within the past 6 months can interfere with results.  
Receiving blood products within the past 6 months can interfere with results.  
Many drugs can falsely elevate or decrease levels.

Elevated IgA	Alcoholic Liver Disease, Cirrhosis, Hepatitis, Laennec's Cirrhosis, Hepatobiliary Carcinoma
Elevated IgD	Chronic infections, Liver diseases
Elevated IgG	Autoimmune Hepatitis, Hepatitis, Hepatitis C, Laennec's Cirrhosis
Elevated IgM	Biliary Cirrhosis, Hepatitis, Viral infections

Name	Alias	Normal Values	
		Adult	Child
Platelets	PLT or Thrombocyte	150,000-450,000/mm <sup>3</sup>	170,000-380,000/mm <sup>3</sup>

The liver releases Thrombopoietin to stimulate platelet production. Increased Platelet levels can be seen with Cirrhosis and decreased Platelet levels can be seen with Viral Infections and Splenomegaly due to liver disease.

**Nurses Notes:** Numerous drugs can alter Platelet production and/or counts.  
Handle sample gently to avoid platelet clumping.  
White Blood Cell (WBC) counts > 100,000/mm<sup>3</sup> can alter Platelet counts.

Name	Alias	Normal Values			
		Male	Female	Child	Newborn
PT	Prothrombin Time	9.6-11.8 Sec.	9.5-11.3 Sec.	11-14 Sec.	12-21 Sec.

Prothrombin (PT) is a vitamin K dependent protein produced by the liver. Liver disease can lead to increased PT levels.

**Nursing Notes:** Many drugs can falsely elevate or decrease levels.  
Excessive agitation of sample can increase the PT level.  
Fibrinogen levels < 100 mg/dL can increase the PT level.

## Common Liver Function Tests

Name	Alias	Normal Values		
		Male	Female	Child
Alanine Aminotransferase	ALT or SGPT	7-46 U/ml	5-35 U/ml	3-37 U/L
<p>Enzyme produced by the liver that acts as a catalyst in amino acid production. High concentrations are found in liver cells and moderate concentrations in body fluids, heart, kidney, and skeletal muscles.</p>				
<p><b>Nursing Notes:</b> Numerous drugs including ETOH can falsely elevate levels. Uremia &amp; Hemodialysis can falsely decrease levels. A hemolyzed specimen can cause falsely elevated levels.</p>				
Name	Alias	Normal Values		
		Male	Female	Child
Aspartate Aminotransferase	AST or SGOT	8-26 U/L	8-20 U/L	19-28 U/L
<p>Enzyme that catalyzes the reversible transfer of an amino between the amino acid. High concentrations are in the liver and heart cells, with lower concentrations found in skeletal muscles, kidney, pancreas, and the brain.</p>				
<p><b>Nursing Notes:</b> Numerous drugs and Vitamin A can falsely elevate levels. A hemolyzed specimen can cause falsely elevated levels.</p>				
Name	Alias	Normal Values		
		Male	Female	Child
Gamma-glutamyl Transpeptidase	GGT or GGTP	10-39 IU/L	6-29 IU/L	0-23 IU/L
<p>Enzyme that participates in the transfer of amino acids and peptides across cellular membranes. High concentrations are found in the liver, bile ducts, and kidneys. Lower concentrations are found in the prostate gland, brain, and heart.</p>				
<p><b>Nursing Notes:</b> Numerous drugs including ETOH can elevate levels. Oral contraceptives can lower levels. A hemolyzed specimen can cause falsely elevated results.</p>				
Name	Alias	Normal Values		
		Male	Female	Child
Bilirubin	Indirect Bili	0.3-1.1 mg/dl (Adult)	Direct Bili	0.1-0.4 mg/dl (Adult)
<p>Bilirubin is a degradation product of the pigmented heme portion of hemoglobin. Old and abnormal red blood cells are removed from circulation by the spleen and to some extent by the liver.</p>				
<p><b>Nursing Notes:</b> Certain drugs can elevate Bilirubin levels. A hemolyzed specimen can cause falsely elevated results. Prolonged exposure to U.V. or sunlight can lower Bilirubin levels.</p>				
Name	Alias	Normal Values		
		Male	Female	Child
Alkaline Phosphatase	ALP or Alk Phos	98-251 U/L	81-196 U/L	
<p>Enzyme found in the liver, the biliary tract, bone, intestines, and placenta.</p>				
<p><b>Nursing Notes:</b> Many drugs can falsely elevate or decrease levels. A hemolyzed specimen can cause falsely elevated results.</p>				