Tests for Liver Disease

This sheet describes tests that may be done for liver problems. Your healthcare provider will tell you which tests you need.

Blood tests to check the liver

A small amount of blood may be taken and tested for one or more of the following:

- **AFP (alpha fetoprotein).** This is a protein made by the liver. A high level in the blood can be a sign of liver cancer or liver injury and regeneration in adults.
- **Albumin.** This is a liver function test. It measures a protein made by the liver. When a person has liver disease, the level of albumin in the blood (serumalbumin) is often low.
- **Alk phos (alkaline phosphatase).** This is an enzyme that is mostly made in the liver and bones. It's measured with a blood test. A high level suggests a problem with the bile ducts in the liver.
- **ALT (alanine aminotransferase).** ALT is an enzyme made by the liver. When the liver is damaged, ALT leaks into the blood. If a blood test finds a high level of ALT, this can be a sign of liver problems such as inflammation, scarring, or a tumor.
- **AST (aspartate aminotransferase).** AST is another enzyme made by the liver as well as by other organs such as muscle. It too is measured with a blood test. High levels of AST may be a sign of liver injury, especially if the ALT level is also high.
- **Bilirubin.** This is a liver function test. It measures the yellow substance made when the body breaks down red blood cells. Bilirubin is collected by the liver to be sent out of the body with stool. When something is wrong with the liver or bile ducts, bilirubin may build up in the body. This causes yellowing of the skin and the whites of the eyes (jaundice). Two measurements may be taken from this test: **total bilirubin** and **direct bilirubin**. A high bilirubin level may be the result of liver disease or a blockage in the bile ducts. A high indirect bilirubin can mean a condition called Gilbert syndrome. Only a small portion of people have Gilbert syndrome. Gilbert syndrome is not a sign of disease. A high indirect bilirubin can also be a sign of rapid red blood cell breakdown.

- **CBC (complete blood count).** This is a test that measures all the parts of the blood. These are red blood cells, white blood cells, and platelets. Problems with these counts can mean infection or illness. They can also be a sign of a problem with the spleen. The spleen is an organ close to the liver that can be affected by liver disease. A low platelet count is common with advanced fibrosis of the liver. It also happens when the spleen becomes enlarged and begins to absorb platelets.

- **GGT (gamma-glutamyl transpeptidase).** This is a liver enzyme that's often measured along with other enzymes to gauge liver problems. GGT is measured with a blood test. If alk phos and GGT are both higher than normal, it may be a sign that the bile ducts in the liver may be diseased or blocked. It also can be a sign of fatty liver or alcohol damage.

- **Glucose.** This is a sugar in the blood and the body's most important source of energy. A healthy liver helps the body maintain a normal glucose level. If a blood test shows that glucose is low, this may mean the liver is not working properly.

- **Infectious hepatitis.** This is a disease and can be found with antibody and antigen tests for hepatitis A, B, C, D, and E. Rarely, other viruses like the Epstein-Barr virus (EBV), which causes mononucleosis and cytomegalovirus (CMV), can cause hepatitis.

- **PT (prothrombin time) or INR (international normalized ratio).** This checks how long it takes for blood to form clots. The liver makes a protein that helps with clotting. Problems with clotting can be a sign of liver disease.

- **5NT (5'-nucleotidase).** This enzyme is made in several organs but is only released into the blood by the liver. A high or low level may be a sign of liver disease.

- **SBA (serum bile acid).** This test measures the amount of bile acid in the blood. A high level may mean that bile ducts are blocked or that the liver is unable to excrete bile acid. This test is rarely done.

- **Vitamins A, D, E, and K.** These vitamins are stored in the liver and fat and released over time (fat-soluble). They are absorbed by the liver, with help from bile. If a blood test shows that these vitamin levels are low, this could mean the liver is not absorbing them properly.

- **Zinc.** This is a nutrient that is absorbed by the liver. If a blood test shows a low zinc level, this could mean the liver isn't absorbing zinc properly. This can worsen conditions brought on by high levels of ammonia.

Several other lab tests may be done to check for specific liver problems once liver damage is found. These include:

- Autoimmune antibodies

- Ceruloplasmin (Wilson disease)

- An iron panel (hemochromatosis)

- Alpha-1 antitrypsin (alpha-1-antitrypsin deficiency)

Other tests to check the liver

The tests below may be done to check the liver's condition or function. These tests can also check related organs, such as the gallbladder or bile ducts.

- **Liver biopsy.** This is a test to look for damage in liver tissue. A needle is used to take a small amount of tissue from the liver. The tissue is sent to a lab, where it is checked for signs of inflammation, scarring, or other problems.

- **CT scan.** A CT scan is a series of X-rays that make a 3-D picture of the liver and gallbladder. This can show gallstones, abscesses, abnormal blood vessels, or tumors.

- **ERCP (endoscopic retrograde cholangiopancreatography).** This test can show if the bile ducts are blocked or narrowed. It can also take pictures of the gallbladder. During this test, a small flexible tube (endoscope) is put into the mouth. The tube is moved down the esophagus and stomach to the top of the small intestine. This is where the bile ducts are. Dye is released through the tube to make the bile ducts show up on an X-ray. The healthcare provider may also use small tools to take tiny samples of tissue or fluid. These are sent to a lab to be studied.

- **HIDA scan.** This test checks gallbladder and liver function. A small amount of radioactive fluid is put into the body. This fluid will be seen on a scan as it travels through the liver to the gallbladder and into the intestine. It can show if bile ducts are missing or blocked. It can show if the gallbladder is working properly. It can also show other problems in the bile ducts.

- **MRI.** This test uses magnets, radio waves, and a computer to create an image of the organs and tissues in your body.

- **MRCP (magnetic resonance cholangiopancreatography).** This is a type of MRI that is more detailed than a standard MRI. It can show abnormal or narrow bile ducts, tumors, gallstones, or all three.

- **Ultrasound (sonogram).** This test uses harmless sound waves and a computer to create a picture of the liver, gallbladder, and bile ducts. It can show gallstones, tumors, or fat in the liver. It is also used to check the condition of the blood vessels and look for bile collections where bile may leak out of the liver. A special ultrasound called elastography gives more information about scarring in the liver (cirrhosis).