



Monitoring Your Hepatitis C

Hepatitis C Lab Tests

Because hepatitis C is a liver disease, your medical provider will likely order regular blood tests to monitor your liver's health. Looking at lab tests may be overwhelming at first, but eventually they will be easier to understand.

Before discussing specific lab tests, here are some important tips:

- Keep copies of your lab results. Ask your provider for copies of your labs and keep them in one place. You may download a [tracking tool](#) to help you record your labs all in one place.
- Lab results should be read by your medical provider. Do not attempt to interpret results on your own.
- If you have questions about a test result, ask your provider about it.
- If you have an abnormal result, ask if there are factors that might affect the test, such as medications, supplements or food.
- Do not lose sleep over test results. An abnormal lab does not necessarily indicate a problem.
- Look for trends. Often a single abnormal lab is insignificant.
- Never let a lab test tell you how you feel. Plenty of people have abnormal labs but still feel good, or normal labs and feel lousy. Stay tuned to your body, not to your lab results.
- Sometimes the worst part about getting lab tests is waiting for results. Try not to put your life on hold while waiting for results. The results will be what they will be.

Here are some common tests that are used for people living with hepatitis C.

LIVER PANEL

Also called a liver function test or hepatic panel, this battery of tests measures activity in the liver. Your provider may order a broader panel of tests, called a comprehensive metabolic panel or chemistry panel, to assess kidney and other metabolic functions along with liver function. Tests that specifically evaluate liver health are:

Alanine aminotransferase (ALT; sometimes listed as SGPT): ALT is a liver enzyme. When hep C infects the liver, the hepatocytes (liver cells) produce higher-than-normal enzymes such as ALT, indicating inflammation of the liver. When initially infected, ALT may skyrocket to 10 times the normal level. When hepatitis C becomes chronic, ALT usually drops to a lower level, but remains persistently elevated. About two-thirds of people with chronic hepatitis C have continuously elevated ALT levels, reflecting ongoing damage to liver cells. The other third have normal ALT levels, even though they have a detectable HCV viral load. Although most people with HCV and normal ALT will live without any liver-related problems, roughly one-quarter of these people may have progression of liver disease.

Aspartate aminotransferase (AST; sometimes listed as SGOT): AST is also a liver enzyme, which is often elevated in people with chronic hepatitis C. AST levels are usually lower than ALT levels. If cirrhosis occurs, AST levels may be higher than ALT levels, a sign that damage to the liver is worsening. Elevated AST levels may also indicate excessive alcohol use, drug toxicity and the presence of other medical problems.

Alkaline phosphatase (ALP or Alk Phos) and gamma glutamyl transpeptidase (GGT or GGTP): These liver enzymes usually remain at normal levels. However, they may become elevated if hepatitis C progresses to cirrhosis. A rise in ALP may indicate other problems, both liver- and non-liver-related. Alcohol and other factors will cause GGT to increase.

Albumin: Albumin is a protein made by the liver. Unlike the more generalized liver enzyme tests, albumin levels are a strong indication of how the liver is functioning. This test is usually normal for most people with hepatitis C, but when albumin is low, it may indicate cirrhosis.

Bilirubin: Bilirubin is a substance found in bile, and is produced during the normal breakdown of red blood cells. In most people with hepatitis C, this test will remain normal. An elevated bilirubin test may indicate cirrhosis.

Total protein: This test measures all the proteins in the blood, including albumin. If albumin is low, other proteins (globulins) may be high, resulting in normal protein levels. The albumin portion of this test is an important indicator of liver function.

COMPLETE BLOOD COUNT

Your medical provider will probably order a complete blood count (CBC), especially during hepatitis C treatment. This basic lab test measures components of the blood, including red blood cells (RBCs), white blood cells (WBCs) and platelets (PLTs). Here are key components of the test:

Red blood cells (RBCs): Red blood cells carry oxygen to the cells in the body, and this test counts how many RBCs you have in your blood. Hemoglobin is a protein in RBCs that carries oxygen. Low hemoglobin is a common side effect of hepatitis C treatment using ribavirin. This is because ribavirin destroys red blood cells as they are forming in the bone marrow, causing a condition known as [hemolytic anemia](#). If you have fewer red blood cells, your hemoglobin and hematocrit will also be low. Hemolytic anemia sounds frightening, but it is a common occurrence when taking

ribavirin. If your hemoglobin gets too low, your doctor may recommend reducing or stopping your ribavirin dose, especially if you are at risk for any cardiac problems.

White blood cells (WBCs): White blood cells help fight infection. There are five major types of WBCs—basophils, eosinophils, lymphocytes, monocytes and neutrophils—and each has a different function. HCV treatment that includes peginterferon may cause a drop in WBCs, especially neutrophils. In the case of HCV treatment, low neutrophils or white blood cells do not indicate a compromised immune system unless the person has HIV or other coexisting immune problems.

Platelets (PLTs): Platelets are the sticky component in the blood that helps it to clot. A variety of conditions will cause low platelets, such as HCV treatment using peginterferon. However, if you have HCV and no other reason for a platelet shortage, it may indicate advanced liver disease. Platelets tend to drop gradually over a period of years as liver disease worsens. A person can live with fairly low platelets without severe consequences. If your platelets are low, ask your medical provider if you are at risk of bleeding. If you vomit or cough up blood, or can't stop any bleeding, seek immediate medical help.

OTHER LAB TESTS

Prothrombin Time/International Normalized Ratio: Prothrombin time measures how long it takes your blood to clot. The liver makes clotting factors, so if your blood takes a long time to clot, it may indicate liver damage. If you can't stop any bleeding, seek immediate medical help. The international normalized ratio or INR is the same test, but expressed in results using a standard that makes it easier to compare results regardless of which lab performed the test.

Alpha-fetoprotein (AFP): This test looks for high levels of AFP, a protein that is produced by cancerous liver cells. AFP may be elevated for a variety of reasons, and is not a reliable indicator of liver cancer. Ultrasound is a more reliable screen for liver tumors.

Viral load (HCV RNA): This test is first performed to confirm you have hepatitis C. The actual number is not cause for concern or reassurance. Viral loads rise and fall without any correlation to hep C progression. Some people get frequent viral load tests and incorrectly assume that if the number is higher it means that their hep C is progressing. You may have a very high viral load and minimal liver damage or hep C symptoms. You may also have a low viral load and extensive disease.

If you are treated for HCV, the viral load is used to monitor how well the medicines are working. An undetectable HCV RNA is called a sustained viral response (SVR). Achieving an SVR at 12 to 24 weeks after treatment is completed means you are cured of hep C.

Drug-Resistance Tests: Despite the high cure rates of current hep C treatments, some people fail treatment because they develop resistance-associated substitutions (RASs) [Note: RASs were formerly called resistance-associated variants (RAVs)]. Also known as polymorphisms, these are natural genetic variations of the virus. If HCV treatment isn't working, your medical provider may test for the presence of RAVs. Routine monitoring for HCV drug RAVs is not recommended unless a

person has cirrhosis and the provider needs this information to determine the best treatment. Exceptions to this are when using drugs such as Zepatier, Olysio with Sovaldi, and Daklinza with Sovaldi. In those drugs, treatment decisions are based on the presence of certain polymorphisms.

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