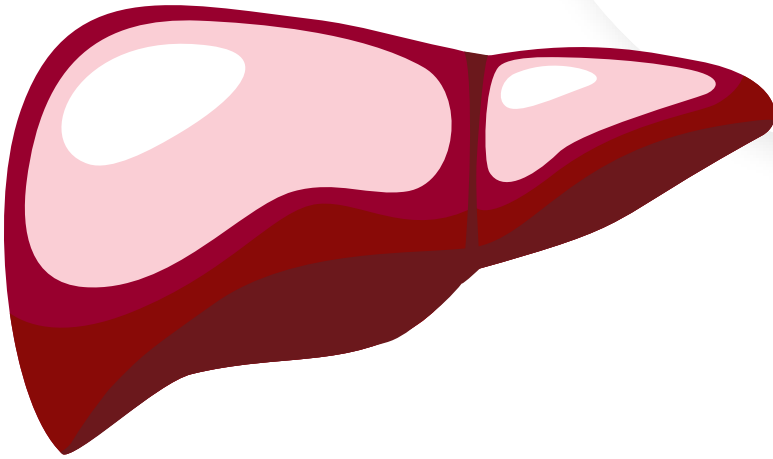


LIVER HEALTH BASICS

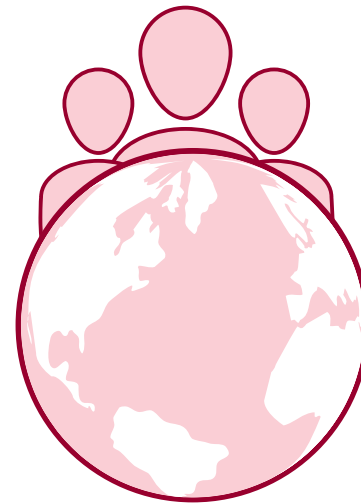


LIVER HEALTH
IS PUBLIC HEALTH



Why should you care about liver health?

When you think about your health and vital organs, you probably think about your heart, lungs, and brain. Oftentimes, the liver is overlooked – despite being the **second largest organ** in the body and performing over **500 important functions**.¹



1.5
billion
people
currently
live with
chronic liver
disease
worldwide.²

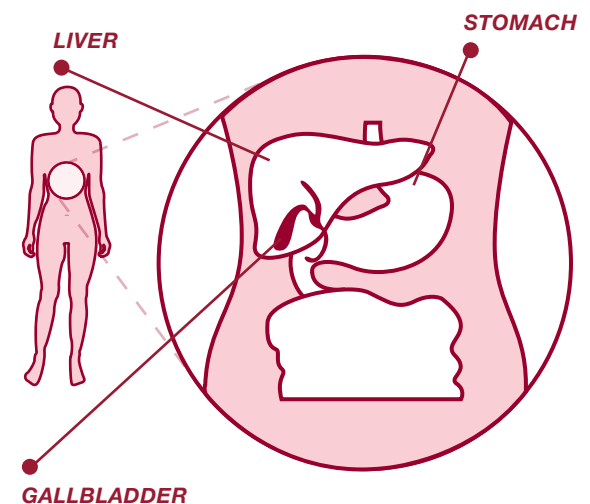
Knowing the types of liver diseases, their causes, and ways to prevent liver disease can help you keep your liver healthy.

What does the liver do?

The liver is an organ in your body about the size and color of a football. It's above the stomach. The liver has many jobs. It mainly **filters your blood**.¹ For example, it:

- *Helps prevent infections by removing bacteria from your blood*
- *Removes sugar from your blood*
- *Removes poisons and toxins from your blood*
- *Produces a liquid called bile that breaks down fats in the food you eat*
- *Helps your blood clot to form scabs when you are bleeding*

With all these functions to accomplish, it's easy to see why the liver is so important to the body in helping us **maintain good health and overall well-being**.



What is liver disease?

Liver disease is any condition that damages the liver and prevents it from accomplishing the previously listed functions.

Symptoms of Liver Disease

When the liver is damaged, it can begin to function poorly. Sometimes this does not cause pain or problems that you would notice. Other times, you might:

Develop yellow skin and eyes, called jaundice

Have itchy skin

Feel tired all the time

Feel sick to your stomach, lose the desire to eat, or throw up

Notice darker urine than usual

Have pale, lighter-than-usual stool (poop)

Notice swelling in your legs or ankles

These are some of the symptoms that may develop as your liver is damaged. As liver damage progresses, more serious and potentially life-threatening conditions can occur.

How do you know if you have a liver disease?

There are many tests to figure out if you have a liver condition: **blood tests, imaging tests** (like an MRI or ultrasound), or, in certain instances, a procedure to take a tiny piece of the liver, called a **biopsy**.

What causes liver disease?

There are several different things that can cause liver disease, including infection, genetics, and lifestyle choices. You can develop a liver problem at any age.



physical inactivity



unhealthy diet



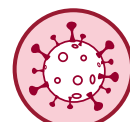
alcohol consumption



genetic disorder



autoimmune disorder



infection



response to medication



progression of a different liver disease



How can you prevent liver disease, and what can you do to improve your liver health?

Liver disease can be prevented most of the time.

Here are 7 things you can do to improve your health:

Stay up to date with your annual physical and vaccinations.

Many liver infections can be prevented with vaccines, and you can ask your doctor to run liver tests with other blood work or other additional screening

Eat healthy and read nutrition labels.

Look for hidden fat, sugar, and sodium. Avoid fast food, processed food (in boxes and cans), and saturated fats. Ask your healthcare provider about the Mediterranean diet.

Stay active.

It doesn't have to be hard: even 30 minutes of walking each day can help.

Drink fewer sugary drinks and more plain coffee and tea.

Avoid drinks that are high in sugar. Plain coffee or tea, though, can improve your liver health.

Maintain a healthy weight.

Ask your healthcare team about what a healthy weight goal looks like for you and what the best ways are to reach it.

Get enough sleep.

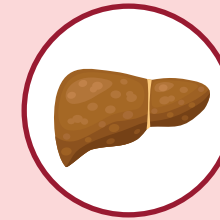
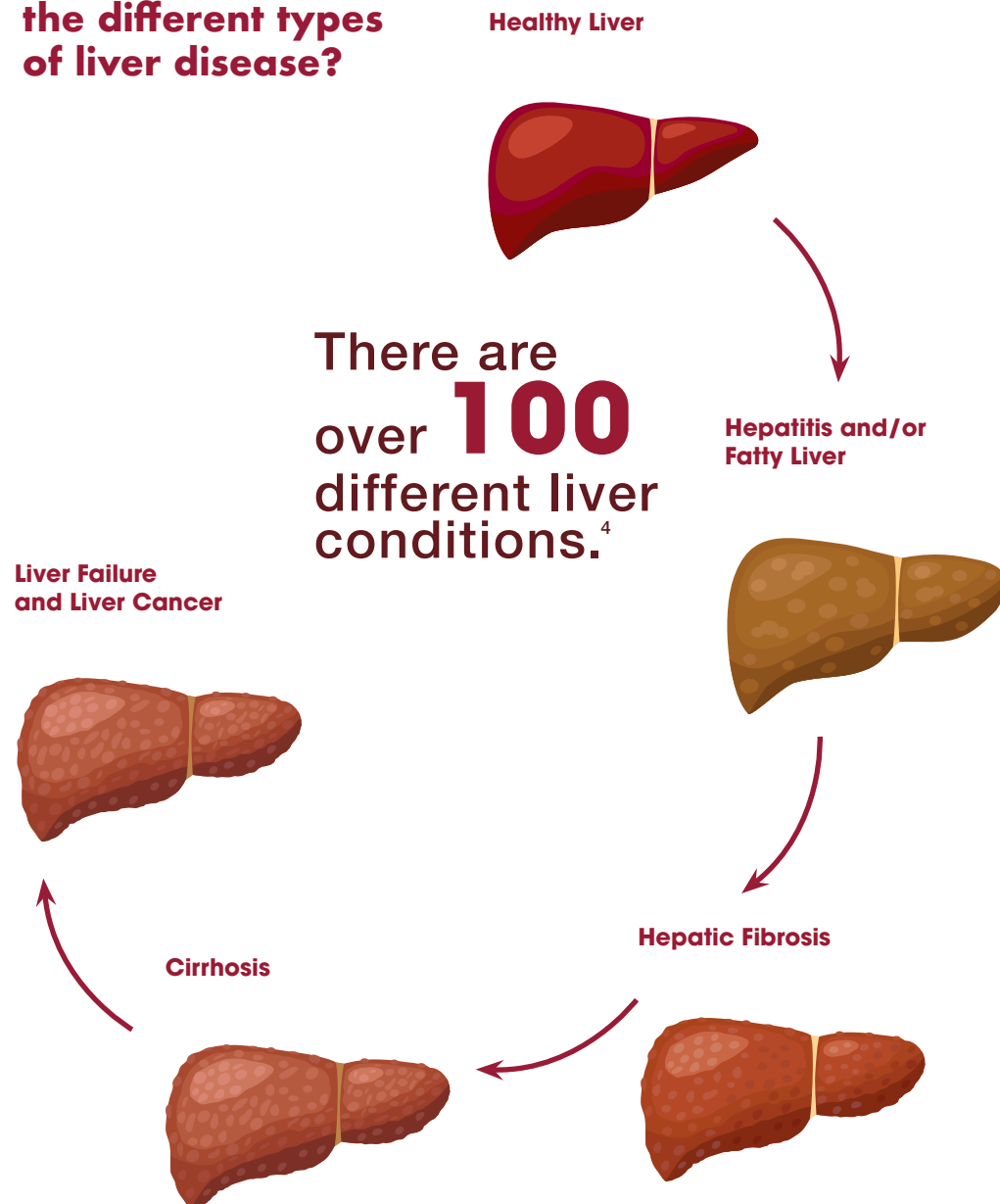
This is one of the best things for your health. Liver disease has been tied to poor sleep.

Drink less alcohol and more water.¹

Your liver has to work hard to process alcohol, and too much can damage it. The CDC recommends moderate consumption: 2 drinks or less per day for men and 1 drink or less per day for women.³ When you are hydrated, it is easier for your liver to filter blood.

Stages of Liver Disease

What are the different types of liver disease?

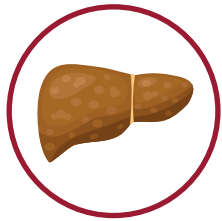


Viral Hepatitis

Viral hepatitis is an infection that causes liver inflammation and damage. There are five main types of viral hepatitis:

HEPATITIS TYPE	HOW DO YOU USUALLY CATCH THIS TYPE?	HOW DO YOU PREVENT THIS TYPE?	HOW DO YOU TREAT THIS TYPE?
A	Contaminated food or water ¹²	Good hand hygiene, especially hand washing	A hepatitis A infection most often only requires minimal and supportive clinical care. ⁷
B	Contact with infected blood and other body fluids, such as sharing needles ¹² or unprotected sex	Hepatitis B vaccine, condom use, and not sharing needles, razors, etc	Antiviral therapy for hepatitis B is recommended to decrease complications. ⁸
C	Contact with infected blood ¹²	Hygiene with sharp object and blood	For most hepatitis C cases, antiviral treatment is recommended. ⁹
D	Requires hepatitis B infection, contact with infected blood and other body fluids, such as sharing needles or unprotected sex ¹²	Hepatitis B vaccine, condom use, and not sharing needles, razors, etc	Medications to manage hepatitis D symptoms are available. Treatment strategies to fight the infection are being evaluated. ¹⁰
E	Contaminated food or water ¹²	Good hand hygiene, especially hand washing	Hepatitis E infection usually does not require antiviral medication. ¹¹

In addition to the above treatment options, be sure to talk to your doctor for care guidance.



Fatty Liver Disease

Nonalcoholic fatty liver disease (NAFLD) occurs when fat accumulates in the liver. Left untreated, NAFLD can progress to nonalcoholic steatohepatitis (NASH), which happens when too much accumulation of fat causes damage to the liver cells.

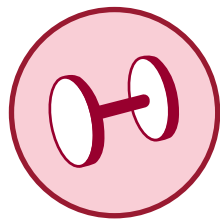
DISEASE

NAFLD

Genetics, poor diet, high cholesterol, high blood pressure, and metabolic disorders (such as type 2 diabetes and obesity)⁵

NASH

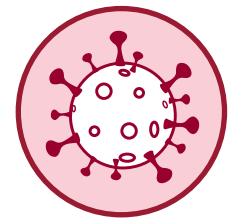
Genetics, poor diet, high cholesterol, high blood pressure, and metabolic disorders (such as type 2 diabetes and obesity)⁵



CAN YOU TREAT OR MANAGE THIS TYPE?

Weight loss, (7-10% of total weight),⁵ healthy nutrition, and addressing underlying conditions like diabetes or high blood pressure can help.

In addition to the above options, there is currently one medical device approved in the U.S. to treat NASH.



Rare Liver Diseases

Most of the over 100 liver diseases are rare. Usually they are either genetic (inherited) or auto-immune, and are often overshadowed by the more common diseases.

Some rare liver diseases include alpha-1 antitrypsin deficiency, Alagille syndrome, autoimmune hepatitis (AIH), biliary atresia (BA), progressive familial intrahepatic cholestasis (PFIC), primary biliary cholangitis (PBC), and primary sclerosing cholangitis (PSC).

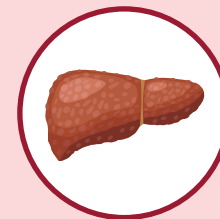
Many rare liver diseases continue to lack treatment options but can be managed effectively.

Alcohol-Associated Liver Disease

Alcohol-associated disease occurs due to excessive use of alcohol.⁶ When the liver is unable to break down and process alcohol due to **excessive drinking**, it becomes damaged.

Alcohol-associated cirrhosis is linked to long-term **alcohol abuse**.

To reduce further damage to your liver and to allow it to recover, the main treatment is to stop drinking altogether.



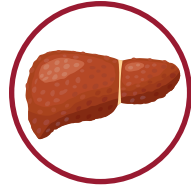
Cirrhosis

Cirrhosis is end-stage liver disease. It is the severe scarring of liver tissue that can occur due to any liver damage. Managing and treating liver disease is crucial to reduce the likelihood of developing cirrhosis.

Cirrhosis usually cannot be cured, but its symptoms and complications can be managed. The condition could be prevented from getting worse. Managing the condition involves **avoiding alcohol, losing weight, managing your nutrition, and taking medicine.**¹³



Hepatic Encephalopathy



Hepatic encephalopathy (HE) is a nervous system condition that occurs when toxins build up in the blood due to the liver not working properly. These toxins travel to the brain and affect its function. HE is one of the most common issues that happens with cirrhosis and can increase the risk of falling and tripping.¹⁴

HE treatments include medications to treat infections and to control bleeding, stopping the use of medications that can trigger an episode of HE, and any appropriate therapy for kidney issues.¹⁴

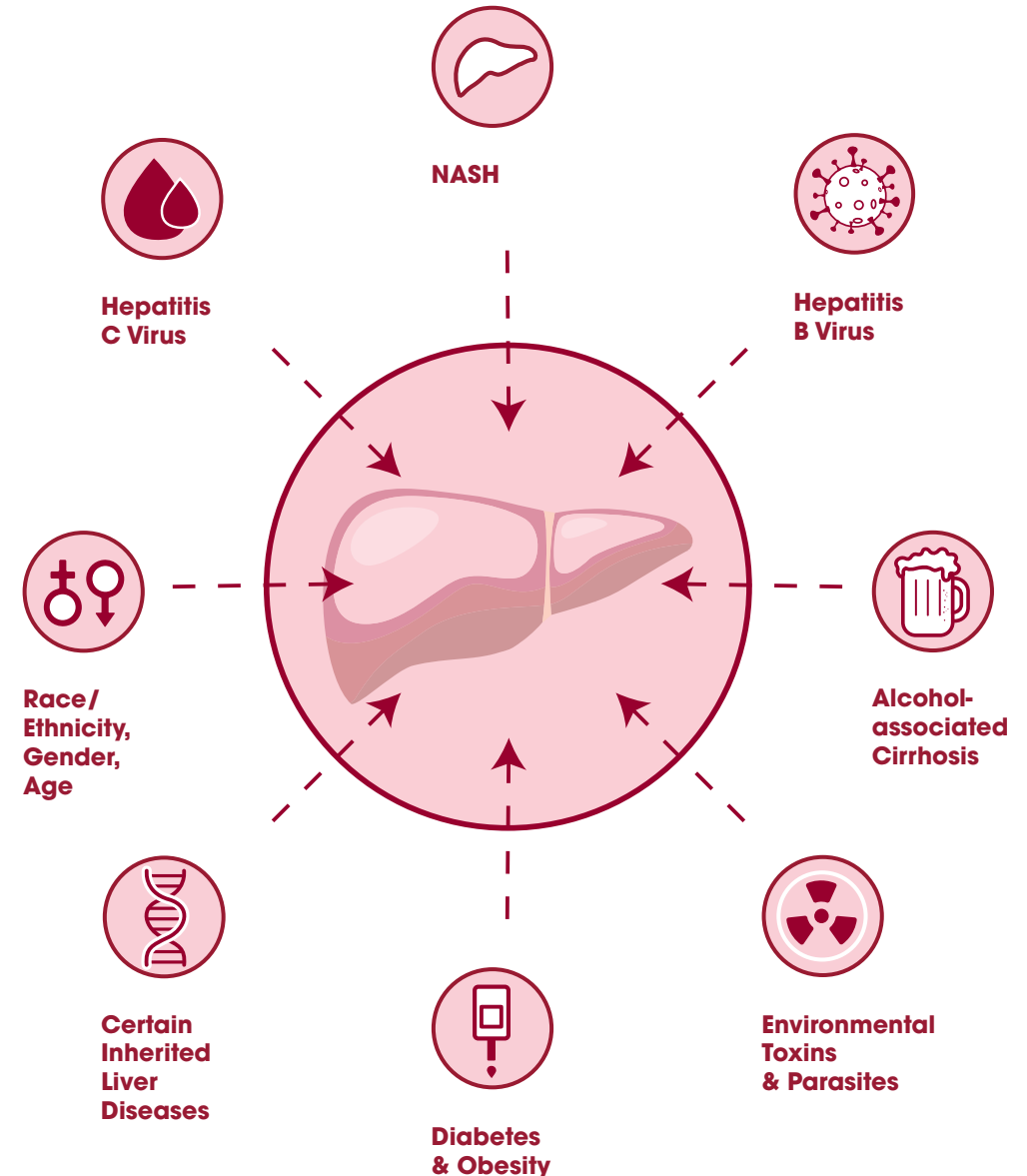


Liver Cancer

- Cancer that starts in the cells of the liver is called **primary liver cancer**.¹⁵
- The most common type of liver cancer is **hepatocellular carcinoma (HCC)**, although there are other types.
- All liver disease can **progress** to liver cancer.
- Most liver cancer cases can be **prevented** by increased uptake of hepatitis B vaccinations, hepatitis C cures, and lifestyle management.¹⁶
- **Treatment** can involve surgery, localized treatments, artery injections, radiation, systemic therapy, or targeted drug therapy.¹⁷
- Every person is different, and working with a treatment team to make a **personalized plan** based on the cancer stage is important for every patient.

Liver cancer is the **third** deadliest cancer in the world.

Liver Cancer Drivers and Factors





If one of these diseases reaches a late stage, you might need a liver transplant.

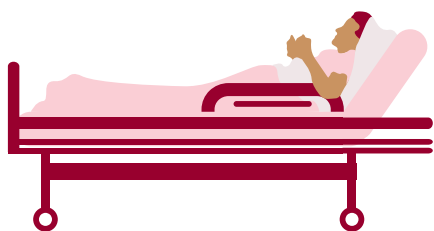
What is a liver transplant?

A liver transplant happens when your diseased liver is replaced with a healthy one.

Unlike other parts of the body, the liver can regenerate on its own. This means that a liver transplant can come from either a donor who is still alive or a deceased donor.






If you need a liver transplant, you are put on a waitlist for an organ. The liver transplant wait list priority is determined by something called a Model for End-Stage Liver Disease (MELD) score. A MELD score helps determine how soon you might receive your new liver.

*****Remember to always talk with your healthcare team, ask questions, and follow their recommendations.***



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Global Liver Institute (GLI) is a patient-driven 501(c)3 nonprofit organization headquartered in Washington, DC, with offices in the EU and UK, founded in the belief that liver health must take its place on the global public health agenda commensurate with the prevalence and impact of liver disease and the importance of liver health to well-being. GLI promotes innovation, encourages collaboration, and supports the scaling of optimal approaches to improve research, care, and policy. By bringing together more than 200 community-based, national, and international organizations across its Councils, Campaigns, and events, GLI equips advocates to identify and solve the problems that matter to liver patients. Follow GLI on Twitter, Facebook, Instagram, LinkedIn, and YouTube. GLI is the global host of International NASH Day.

This initiative is made possible in the United States thanks to the support of Salix Pharmaceuticals and, globally, thanks to the support of Sanofi.



