

# Non Alcoholic Fatty Liver Disease (NAFLD)

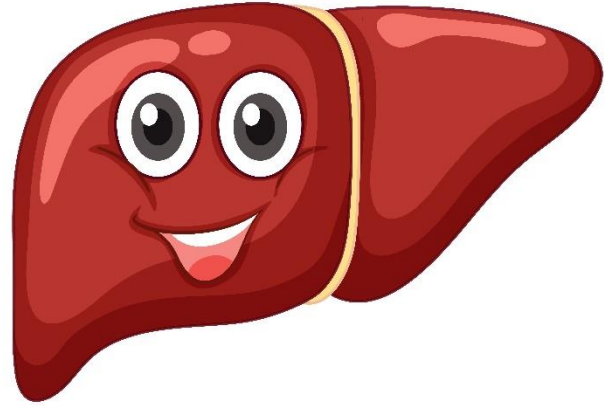
Information and advice for patients

CSTH Professorial Surgical Unit

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## What does the liver do?

The liver is in the upper right part of the tummy (abdomen). Its functions include:



- Storing fuel for the body. Much of the food that we eat is broken down by the body into a type of sugar called glucose, which our body uses as energy. Glucose can't be stored as it is, therefore is converted into a storage version called glycogen. Glycogen is stored in the liver and it releases in form of glucose when energy is required. The liver stores iron and vitamins as well.
- Making proteins that are essential for clotting of blood.
- Helping to remove or process alcohol, medicines and poisons from the body.
- Making a type of fat called cholesterol. This is needed in the body, although high levels of cholesterol cause harm to the body.
- Making a juice called bile, which digests fat. This passes from the liver to the gut down the bile duct. Bile breaks down the fats in food so that they can be absorbed from the bowel.

## What is non-alcoholic fatty liver disease (NAFLD)?

NAFLD describes a range of conditions caused by a build-up of fat within liver cells. It is divided into four stages:

### 1. **Simple fatty liver (hepatic steatosis)**

Normally, very little fat is stored in liver cells. Simple fatty liver means that excess fat builds up (accumulates) in liver cells. For most people, simple fatty liver does not cause any harm or problems to the liver. However, in some people it can progress to more severe forms of NAFLD.

### 2. **Non-alcoholic steatohepatitis (NASH)**

In this condition the excess fat in the liver cells is associated with, or may cause, inflammation of the liver. ('Steato' means fat, and 'hepatitis' means inflammation of the liver). This is much less common than simple fatty liver.

### 3. **Fibrosis**

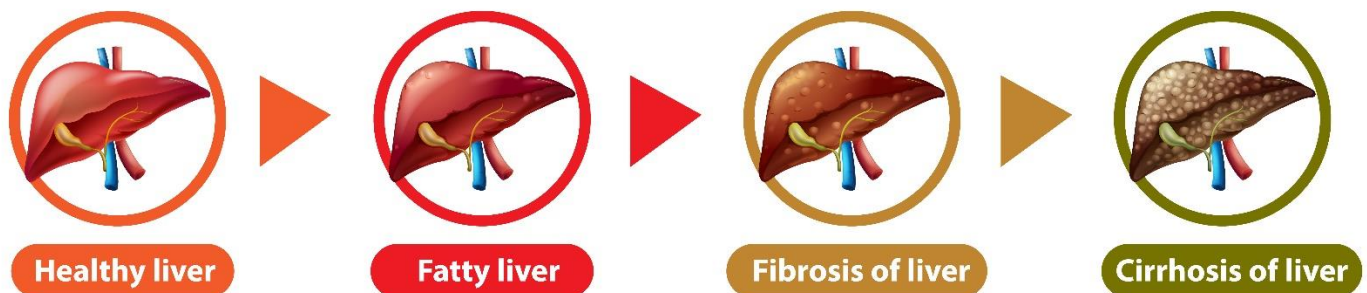
Any form of persistent hepatitis, including steatohepatitis, may eventually cause scar tissue (fibrosis) to form within the liver. When fibrosis first develops often there are many liver cells that continue to function quite well.

### 4. **Cirrhosis**

This is a more advanced stage where normal liver tissue is replaced by a lot of fibrosis. The structure and function of the liver are badly disrupted. End stage of cirrhosis will lead to liver failure.

Fatty liver disease can occur in people who do not drink excessive amounts of alcohol and so alcohol is not the cause. Most people with NAFLD have simple fatty liver. Only a minority (10-20%) will progress to develop NASH. And, only a minority (10%) of people with NASH will progress to develop cirrhosis. It is not clear why some people with simple fatty liver progress to the more severe forms of NAFLD, and most do not.

## Stages of Liver Disease Leading to Cirrhosis



## What are the causes of NAFLD?

The most common cause of NAFLD is being obese or overweight. About 3 out of 4 people who are obese are at risk of developing NAFLD. About 1 out of every 5 people who are obese is at risk of developing NASH.

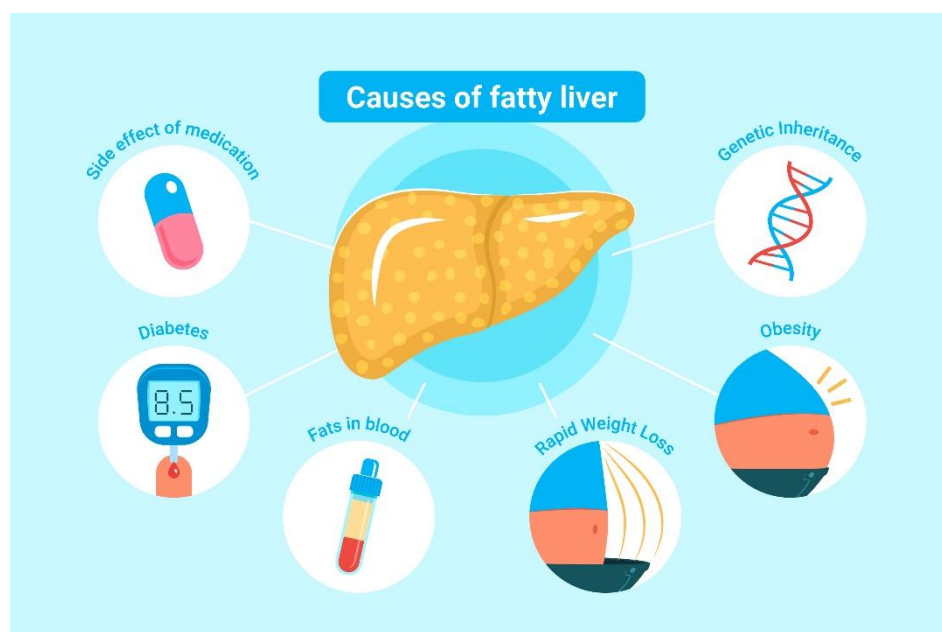
People who are not overweight can also have fatty liver.

People may also have a higher risk of developing NAFLD if they have:

- diabetes
- insulin resistance
- high cholesterol or triglycerides
- high blood pressure
- lost weight too fast or the body is starved

This causes their body to burn muscle for energy, which increases fat in their liver.

Other less common causes of fatty liver disease include taking certain drugs (like steroids), and family history of fatty liver disease.



## **Can children get fatty liver disease?**

Yes. If a child is obese, they have a higher risk of getting fatty liver disease.

Visiting a doctor regularly is important because doctors have found fatty liver disease in children as young as 4 years old.

## **What are the symptoms of fatty liver?**

There are no major symptoms.

If your liver becomes severely scarred, you may feel unwell, tired or have discomfort in the right side of your upper body.

Serious symptoms happen when the liver starts to fail and stops working normally, such as jaundice (yellowing of the skin), ascites (fluid in belly), and bleeding from esophageal varices (dilated veins in esophagus).

## How can you find out whether you have fatty liver disease?

**Ultrasound scan of the liver** - can show a fatty liver or an enlarged (swollen) liver.

**Fibroscan, Liver elastography, MRI** – These are special scans which can assess fat and degree of scarring in the liver. Doctors may also use different indices (Eg FiB score) to assess this.

**Liver biopsy** - The most accurate test to look for fat in the liver and the degree of damage it has caused. During the biopsy, a doctor puts a needle into your liver and takes out tiny samples of liver tissue. The doctor then looks at the samples closely using a microscope.

If you have NAFLD, your liver function test results may be abnormal. But a normal result doesn't rule out liver problems.

## How is it managed?

If you have fatty liver disease, talk to your doctor about the best way to manage it.

If you are overweight, your doctor can talk to you about methods of losing weight.



Living an active lifestyle is the best way to avoid developing fatty liver disease. Regular exercise (150-200min per week) and eating a variety of healthy foods can also help control high blood pressure, high cholesterol, diabetes and improve overall health.

Right now, there are No medications that you can take to treat fatty liver disease.

## **How can I prevent fatty liver disease?**

Some tips to prevent fatty liver disease include:

- Stay at a healthy weight. If you are overweight, try to lose weight, but do it slowly.
- Avoid gaining weight at your waist. If your waist measures more than 102 centimeters (40 inches) for men or 88 centimeters (35 inches) for women, you have a higher risk of getting fatty liver disease.
- Eat foods that are low in saturated fats and high in fiber.
- WHO recommends Exercise at least 150 to 300 minutes per week for all adults. Ex: walking, swimming, gardening and stretching
- Avoid alcohol.



## What should you do if you think you have fatty liver?

- Stop drinking alcohol.
- If you need to lose weight, talk with your doctor about how to lose it so you don't gain it back again.
- Get tested for diabetes, high blood pressure, and high cholesterol.
- Get tested for any other causes of liver disease.

## Contacts

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