CONDITION

Fatty liver disease

Fatty liver disease is excess fat in the liver, often linked to metabolic health or alcohol.

WHAT IT IS
Excess fat stored in liver cells

BODY SYSTEM
Digestive system

MAIN SYMPTOMS
Often none, tiredness, upper-right abdominal discomfort

WHAT CAUSES IT
Metabolic dysfunction, alcohol, medicines, other conditions

HOW IT IS DIAGNOSED
Blood tests and imaging, sometimes liver biopsy

MAIN TREATMENT
Lifestyle changes and management of related conditions

CAN IT BE CURED?
Sometimes - liver fat and inflammation can reverse

IS IT AN EMERGENCY?
Sometimes - with vomiting blood or sudden confusion

LONG-TERM OUTLOOK
Often manageable, but advanced scarring can be serious

Overview

Fatty liver disease means that more fat than expected has built up inside the liver. The liver normally contains some fat, but larger amounts can injure liver cells in some people.

The condition is now often called steatotic liver disease , or SLD. If it is linked to excess weight, type 2 diabetes, abnormal cholesterol or similar metabolic factors, it may be called metabolic dysfunction-associated steatotic liver disease , or MASLD. The older name was non-alcoholic fatty liver disease, or NAFLD.

Fat may also build up because of alcohol. Some people have both metabolic and alcohol-related causes. Medicines and less common medical conditions can also cause liver fat.

Many people have fat in the liver without inflammation or major damage. Others develop

steatohepatitis , meaning inflammation and liver-cell injury. When linked to metabolic factors, this is called metabolic dysfunction-associated steatohepatitis, or MASH. Its older name was NASH.

Ongoing inflammation can lead to fibrosis , which is scar tissue. Severe scarring is called cirrhosis . Finding people at risk of fibrosis matters because the amount of scarring is more closely linked to long-term liver problems than the amount of fat alone.

Symptoms

Fatty liver disease often causes no symptoms. It may be found after a blood test shows abnormal liver enzymes or an imaging test detects liver fat for another reason.

When symptoms occur, they can include:

These symptoms have many possible causes. Their presence does not show how much liver damage there is. Some people with significant fibrosis feel well, while others with little or no scarring feel tired.

Symptoms such as yellow skin or eyes, a swollen abdomen, swollen legs, easy bleeding or confusion are not typical of early fatty liver disease. They can occur when cirrhosis has affected how the liver works and need prompt medical assessment.

- Ongoing tiredness
- A dull ache or discomfort under the right ribs
- A general sense of feeling unwell

Causes and risk factors

The most common form is linked to metabolic health. Metabolic dysfunction means the body has difficulty managing energy, blood sugar and fats.

Factors associated with MASLD include excess weight around the waist, type 2 diabetes, insulin resistance, high blood pressure and abnormal cholesterol or triglyceride levels. Insulin resistance means the body's cells do not respond normally to insulin, the hormone that controls blood sugar.

You do not have to be overweight to develop fatty liver disease. Genetics, body-fat distribution, diet, physical activity and other health conditions all play a part. The condition can occur in children as well as adults.

Alcohol can also cause liver fat and inflammation. Risk is affected by how much and how often a person drinks, their pattern of drinking and their individual susceptibility. Metabolic risk and alcohol may act together.

Less common causes include certain medicines, rapid weight loss, poor nutrition and some inherited or hormonal conditions. Examples of medicines associated with liver fat include corticosteroids like prednisone or hydrocortisone , amiodarone, methotrexate and tamoxifen. Do not stop a prescribed medicine without medical advice.

Diagnosis

There is no single routine test that gives every answer. Assessment usually looks for liver fat, checks for other causes and estimates whether fibrosis is present.

Blood tests may measure liver enzymes and how well the liver is functioning. Tests may also check blood sugar, cholesterol, hepatitis infections and other possible causes. Liver enzymes can be normal even when fatty liver disease or fibrosis is present.

An ultrasound can detect moderate or large amounts of liver fat, but it cannot reliably show inflammation or mild fibrosis. Other scans may be used when more detail is needed.

Elastography , sometimes called a FibroScan, measures liver stiffness. A stiffer liver may suggest fibrosis, although inflammation and other factors can affect the result. Magnetic resonance imaging can measure liver fat and stiffness more precisely, but it is not needed for everyone.

Clinicians may calculate a fibrosis score using information such as age, liver enzymes and platelet count. One commonly used score is FIB-4. A result suggesting increased risk usually leads to further testing rather than confirming cirrhosis by itself.

A liver biopsy removes a small sample of tissue with a needle. It can show fat, inflammation and fibrosis directly. Because it is invasive, it is generally reserved for situations where the diagnosis remains uncertain or the result would affect treatment.

Treatment and management

Treatment depends mainly on the cause and whether fibrosis is present. The goals are to reduce liver injury, address related health conditions and lower the risk of heart and circulation problems.

For metabolic fatty liver disease, gradual and sustained weight loss can reduce liver fat in

people who are above their healthy weight. Greater weight loss may also improve inflammation and fibrosis. Extreme diets and rapid, unplanned weight loss are not recommended because they are difficult to maintain and may sometimes worsen liver problems.

A balanced eating pattern rich in vegetables, fruit, whole grains, legumes, nuts and unsaturated fats can support liver and heart health. It can help to limit sugary drinks, heavily processed foods and foods high in saturated fat. There is no single required "fatty liver diet."

Regular physical activity can lower liver fat even without major weight loss. Both aerobic activity, such as brisk walking or cycling, and resistance exercise, such as lifting weights, can be useful. Activity can be increased gradually according to your health and mobility.

Management may also include treatment for diabetes, high blood pressure, abnormal cholesterol, obesity and sleep apnoea. Cholesterol-lowering statins like atorvastatin or simvastatin can generally be used in people with fatty liver disease when medically appropriate.

Avoiding or reducing alcohol can prevent additional liver injury. People with significant fibrosis or cirrhosis are commonly advised not to drink alcohol. Advice for others should take account of the cause of their condition and their overall health.

Some medicines used for obesity or type 2 diabetes may also improve liver fat or inflammation. Resmetirom is approved in some places for selected adults with non-cirrhotic MASH and moderate to advanced fibrosis. It is not suitable for everyone and is used alongside diet and physical activity, with medical monitoring.

Weight-loss surgery may be considered for some people who meet criteria for obesity treatment. Advanced liver failure may require a liver transplant.

Complications

Most people with simple liver fat do not quickly develop severe liver damage. The chance of complications is higher when steatohepatitis and fibrosis are present.

Possible complications include:

Fatty liver disease is also closely connected with type 2 diabetes, heart attack, stroke and kidney disease. For many people, heart and circulation problems are a greater long-term risk than liver failure. This is why blood pressure, cholesterol, blood sugar, smoking and physical activity are important parts of care.

- Increasing fibrosis and cirrhosis
- Fluid buildup in the abdomen or legs

- Internal bleeding from enlarged veins in the digestive tract
- Reduced liver function or liver failure
- Liver cancer, particularly in people with cirrhosis

Prevention

Not every case can be prevented. Genetics, some medical conditions and necessary medicines can contribute to liver fat.

The risk of metabolic fatty liver disease may be reduced by maintaining a sustainable weight, staying physically active and managing blood sugar, cholesterol and blood pressure. Limiting sugary drinks and avoiding frequent heavy alcohol use may also reduce risk.

If a medicine could be contributing, do not stop it on your own. A clinician can review its benefits, risks and possible alternatives.

For someone who already has fatty liver disease, these measures are still useful. They may reduce liver fat, slow further injury and improve heart health even if the condition does not completely resolve.

Living with it and what to expect

Fatty liver disease usually changes over months or years rather than days. Some people continue to have liver fat without developing important scarring. Others develop fibrosis, especially when diabetes, obesity, ongoing alcohol exposure or several metabolic risk factors are present.

Liver fat and inflammation can improve. Early fibrosis may also improve in some people when the cause is addressed. Cirrhosis is harder to reverse, and people who have it usually need lifelong monitoring even if their liver health becomes more stable.

Follow-up may include blood tests and repeat fibrosis assessment. The timing is based on your initial results and risk factors. People with advanced fibrosis or cirrhosis may need specialist care and regular checks for complications, including liver cancer.

Most people with early-stage disease can continue their usual work, family life and activities. Day-to-day care generally focuses on realistic habits rather than a short-term detox or cleanse. Herbal remedies and liver supplements are not proven substitutes for treatment, and some can injure the liver.

When to get medical help

Arrange a routine appointment if you have been told that you have liver fat or repeatedly abnormal liver tests. Follow-up is also appropriate if you have risk factors such as type 2 diabetes or obesity and are concerned about liver health.

Seek prompt medical advice if you develop new yellowing of the skin or eyes, increasing abdominal swelling, dark urine, pale stools, persistent vomiting or unusual bruising.

Get emergency help for:

These symptoms can occur with complications of advanced liver disease, but they can also have other serious causes.

- Vomiting blood or passing black, tar-like stools
- Sudden confusion, extreme drowsiness or difficulty waking
- Severe breathing difficulty with marked abdominal swelling
- Collapse or severe weakness with signs of bleeding

Common questions

Can fatty liver go away?

Yes, sometimes. Liver fat can decrease when its cause is addressed. Inflammation and early fibrosis may also improve, but established cirrhosis may remain and still requires monitoring.

Is fatty liver disease serious?

It can be, but many people do not develop advanced liver problems. The main indicator of liver-related risk is fibrosis. Metabolic fatty liver disease also signals a higher risk of diabetes and heart and circulation conditions.

Can a thin person have fatty liver?

Yes. Fatty liver disease is not limited to people who are overweight. Genetics, insulin resistance, where body fat is stored, alcohol, medicines and other conditions can contribute.

What should I eat if I have fatty liver?

There is no required special diet. A pattern based on vegetables, fruit, whole grains, legumes, fish, nuts and unsaturated fats is often suitable. Reducing sugary drinks and heavily processed foods may help. Dietary needs can differ if you also have diabetes, kidney disease or cirrhosis.

Can I drink alcohol with fatty liver disease?

Alcohol can add to liver injury. The safest choice may be to avoid it, particularly with fibrosis or cirrhosis. Personal advice should reflect the cause of your liver condition, your test results and your drinking pattern.

Do I need medicine for fatty liver?

Many people are managed by addressing weight, activity, alcohol and related conditions. Some people with obesity, diabetes or significant MASH-related fibrosis may be offered medication. Medicine does not replace ongoing management of metabolic and cardiovascular risks.

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