



Information About Fatty Liver Disease

What is fatty liver disease?

"Fatty liver disease" is a condition where fat builds up in the liver. When too much fat is stored in the liver, it can lead to liver scarring, or "cirrhosis". Fatty liver is very common and affects about a third of Australian adults.

What are the symptoms?

Most people don't have any symptoms. Fatty liver sometimes causes abdominal (belly) pain and fatigue (tiredness), but this is rare. It doesn't cause nausea or intolerance to fatty foods.

Why does fatty liver need treatment?

People with fatty liver have a higher risk of heart problems, strokes, kidney disease and even cancer. In some people, fatty liver will lead to cirrhosis. If this happens, it can result in abdominal swelling, bleeding, confusion and a higher risk of liver cancer.

What causes fatty liver?

Fatty liver is not caused simply by eating fatty foods. It usually occurs in people who have a combination of things going on in their body over a long period, such as:

Most common

- being overweight, particularly with extra weight around the waist area (about 7 of every 10 people who are considered obese have fatty liver disease)
- having type 2 diabetes or insulin resistance
- having high levels of blood fats (cholesterol and triglycerides)
- drinking too much alcohol
- Less common
- having an underactive thyroid
- taking some medicines
- having polycystic ovary syndrome (or "PCOS").

What is MAFLD?

Metabolic (dysfunction)-associated fatty liver disease (MAFLD), which used to be known as non-alcoholic fatty liver disease (NAFLD), is the most common form of fatty liver disease. It can range in severity from mild, with no inflammation (damage), to severe, with inflammation in the liver (known as "steatohepatitis").

MAFLD is linked to resistance to insulin, which is a hormone the body makes to maintain normal amounts of sugar in the blood. If you are insulin-resistant, your body is not as sensitive as it should be to the effect of insulin, so your blood sugar levels can be higher than the normal range. By losing weight and doing more physical activity, you can reduce your insulin resistance.

What is MASH?

Metabolic steatohepatitis (MASH) is a chronic disease where the excess fat in the liver causes inflammation. This condition slowly gets worse and is more likely to be a problem if you also have another liver disease, like hepatitis C or B, or if you drink too much alcohol. In some people, it may gradually lead to scarring of the liver and to more serious chronic liver disease, like cirrhosis or liver cancer.

MASH typically occurs in people who are overweight or have type 2 diabetes. These people often have high levels of blood fats (cholesterol and triglycerides). You should therefore try to control these risk factors as much as possible.

How is fatty liver diagnosed?

Because fatty liver disease doesn't usually cause symptoms, many people don't realise they have it until they have a routine blood test that shows abnormal results for their liver. This test is usually followed up with an ultrasound and more blood tests (to rule out other causes).

Imaging of the liver can also be done using a CT (computed tomography) scan or an MRI (magnetic resonance imaging) scan. A FibroScan (similar to an ultrasound) may be used to specifically measure liver fat and scar tissue, although this type of scan isn't available everywhere.

Your doctor might suggest you have a liver biopsy. This means your liver cells will be looked at in detail under a microscope to check how much fat has built up and how bad any inflammation and liver scarring is.

What can I do if I have MAFLD?

No medicines or surgery have been approved for treating MAFLD in Australia. However, it can respond very well to changes in diet and physical activity.

- If you're overweight, weight loss of about 4% to 10% of your current body weight can slow down the disease and even reverse liver damage.
- Aim for gradual weight loss of about 0.8 to 1 kg a week.
- Aim for a waistline measurement of less than 80 cm if you are a woman or less than 94 cm if you are a man.
- Do aerobic-type exercise of moderate or higher intensity on 3 to 5 days (for a total of at least 150 minutes) each week. This can include doing activities like brisk walking, cycling, team sports or dancing at a level of effort that you would describe as "somewhat hard" (a rating of 3–4 out of 10) or "hard" (a rating of 5–6 out of 10).

- Do resistance-type exercise using weight machines, handheld weights or body weight exercises on 2 to 3 days each week. This is particularly important for maintaining muscle, especially when you're trying to lose weight. As a guide, use a weight that you can lift at least 8 times but no more than 12 times. Think about contacting an accredited exercise physiologist (www.essa.org.au) for individualised and specialised help with your exercise.

- Remember that aerobic-type exercise will help you manage your weight but also directly benefits your liver health, even without weight loss. Exercise helps treat many of the conditions linked to MAFLD (like diabetes and high blood fat levels) and makes you feel better.

- Eat a healthy diet with lots of vegetables every day, as well as wholegrains, fruits, nuts and seeds, fish and seafood, legumes or beans, extra virgin olive oil and herbs and spices. See the healthy eating pattern checklist on the next page.

- Avoid highly processed foods, like biscuits, lollies and chocolates.

- Get your diabetes and cholesterol levels under good control. Take the medications your doctor prescribes for diabetes and cholesterol because they lower the risk of damage to your liver.

- Don't drink alcohol, or limit how much you drink.

- Quit smoking.

- Don't take any drugs your doctor hasn't prescribed for you.

What if I'm trying but not losing weight?

It's OK! If you eat better-quality food and exercise regularly, liver fat can still be reduced, even without weight loss. Your doctor or dietitian may be able to give you advice about what dietary pattern or approach might work best for you, or if there are any medicines you can take to help with your weight loss.

Things like the Mediterranean-style diet or intermittent fasting can help lower inflammation in some people with MAFLD, so these are good options to discuss with your doctor or dietitian.

How to follow a healthy eating pattern if you have MAFLD

Use the following checklist to see how you can improve your current diet. Tick the answer that best reflects your current eating patterns. If you answer “no” or “sometimes” to a question, this might be a good place to start making a change.

Top 10 healthy eating principles		Yes	Sometimes	No
1	Am I eating 5 or more serves of vegetables or salad each day? (1 serve = ½ cup of cooked vegetables, or 75 g or 1 cup of salad vegetables)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Am I choosing wholegrain or brown breads, cereals, rice, pasta or grains? Aim for 4 to 6 serves each day. (1 serve = 30 g of cereal, 1 wrap, ½ pita bread, ½ cup of cooked rice or pasta)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Am I eating 2 to 3 pieces of fresh fruit every day?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Am I using extra virgin olive oil as the main added fat in cooking and as a dressing? Aim for around 2 to 3 tablespoons each day.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Am I eating at least 3 meals with legumes (like chickpeas, kidney beans or lentils) each week? (1 serve = 1 cup or 150 g)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Am I eating at least 3 serves of fish or seafood each week, including at least 1 serve of oily fish, like salmon, tuna or sardines? (1 serve = 100 to 150 g or 1 small tin)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Am I eating 3 or more serves of unsalted nuts or seeds each week? (1 serve = 30 g or a handful)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Am I eating unflavoured dairy foods (like milk or unsweetened Greek or natural yoghurt) every day or eating cheese in moderation (2 to 4 serves each week of feta, ricotta or cottage cheese)? (1 serve = ½ cup of yoghurt, ½ to 1 cup of milk, 40 g of cheese)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Am I eating red meat (beef, lamb or pork) in small amounts? Aim for 80 to 100 g, once a week.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Am I using herbs and spices instead of salt to flavour my meals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

In summary

Fatty liver disease is very common in Australia. Most people with the disease can improve their health through simple and ongoing lifestyle changes, like improving the quality of the food they eat, doing more daily exercise and drinking less alcohol. To find out more about changes you can make to help your liver, or if you have any questions or concerns, see your doctor.

Acknowledgements

This resource was reviewed and updated by the following health professionals in 2023:

- Prof Jacob George, Storr Liver Centre, Westmead Institute for Medical Research, Westmead Hospital and University of Sydney, Sydney, NSW
- A/Prof Ingrid Hickman, ULTRA Clinical Trials Capability, University of Queensland, Brisbane, QLD
- A/Prof Nathan Johnson, Faculty of Medicine and Health, University of Sydney, Sydney, NSW
- Dr Shelley Keating, School of Human Movement and Nutrition Sciences, University of Queensland, Brisbane, QLD
- Dr Hannah Mayr, Department of Nutrition and Dietetics, Princess Alexandra Hospital, Brisbane, QLD
- Dr Shyam Nagubandi, University of Sydney and Blacktown Hospital, Sydney, NSW