What is fatty liver?

Fatty liver is a condition where fat accumulates in the liver. Whilst some people with fatty liver do not get severe liver damage, for other people the fat in the liver causes inflammation and scarring over a period of time resulting in a condition called NASH (Non-alcoholic steatohepatitis).
Who gets fatty liver?

Fatty liver is now the most common cause of liver disease and it is estimated that about one in every four people in the UK have it.

People who get fatty liver are commonly, but not always, overweight. If a person has fatty liver they are more likely to have or develop type 2 diabetes, high blood pressure and high cholesterol. There is also an increased risk of developing heart disease. Where you carry your extra weight may put you at more risk of liver disease and indeed other health problems too. If your body is an “apple” shape, you will carry extra fat around your abdominal area. This causes a release of fatty acids, hormones and inflammatory agents which put you more at risk of liver damage and other health problems.

Some drugs can cause fatty liver and we can advise you regarding these.

What tests might I have to diagnose fatty liver or NASH?

A number of different sorts of tests are used to assess whether a person has fatty liver and, if so, whether it is causing significant damage to the liver

- **Blood tests** - These allow us to look for a number of causes of liver disease and also other health conditions (for example, diabetes)
- **Liver ultrasound** – This is used to assess whether there may be fatty liver and also whether there is evidence of severe scarring to the liver. This is a procedure very similar to the one used for pregnant women to look at their unborn baby. Gel will be put on your abdominal area and a probe will be applied this will allow the radiologist to look at your liver. The procedure will last around ten minutes.
- **Fibroscan** - This is very similar to an ultrasound, except the probe does not take pictures of the liver, but instead gives a pulse of vibration to the skin over the liver and measures the stiffness of the liver to estimate the degree of scarring. We will do this at your clinic appointment. If this test indicates increased liver stiffness it may mean you have some liver damage.
- **Liver biopsy** – This is a procedure whereby a tiny sample of liver tissue is taken under local anaesthetic, using ultrasound-guidance. This procedure is carried out if we suspect you have inflammation and scarring on the liver or we are concerned about your blood results and the possibility that something else is affecting your liver. It is currently the best way of assessing the nature and the degree of liver damage. This test is carried out in our Radiology Day Unit. You will be injected with a local anaesthetic to numb the area where the biopsy will be taken. A small hollow needle will then be inserted into the liver to get a small sample of liver tissue. You will then be asked to lie on your right side for about two hours and be on bed rest for around a further four hours. Your blood pressure and pulse will be checked on a regular basis as there is a small risk of bleeding. The liver tissue is then looked at by a specialist, which takes around two to three weeks. You will be asked to attend clinic for your biopsy result. If you have not received an appointment for clinic follow up please contact Marie Roat on 01223 217591. You can of course decide not to have a liver biopsy and we are happy to discuss this with you.
What if my test results indicate that I just have fatty liver?

If your tests suggest that you just have fatty liver we may refer you back to your GP and ask him/her to check your liver blood tests every year. If they have any concerns following these tests or you were to develop high blood pressure or high cholesterol and especially diabetes we will ask them to refer you back to us as they will increase your risk of developing liver disease.

We will reassess you with a Fibroscan, possibly a liver ultrasound and blood tests.

As the following advice will explain it is essential for your overall health to address your diet and exercise levels.

What if I am found to have nonalcoholic steatohepatitis (NASH) - what does it mean?

The specialist who looks at your liver biopsy will be able to determine the level of liver damage that you have. This may be:

- **Mild liver disease** - we will see you every two years. We will repeat your liver blood tests and Fibroscan and if there is some suggestion that your liver damage has progressed we may need to repeat your liver biopsy.
- **Moderate liver disease** – this means that the scarring is at a moderate stage, but there is a risk that the scarring may get worse over a period of a few years. Because of the increased risk of the disease worsening, we see people with this stage of liver disease every year. We will carry out a liver ultrasound scan a fibroscan and special blood tests. We like to repeat the liver biopsy at three years to see whether the scarring is worsening.
- **Severe fibrosis/Cirrhosis** – this means that the scarring is severe and has reached the stage of nearly having cirrhosis. There is an increased risk of liver cancer in people with cirrhosis and we therefore see people with this stage of liver disease in clinic every six months, or more frequently if needed and check their liver blood tests, as well as six monthly liver scans.

What are the symptoms of fatty liver/NASH?

Most people do not have any symptoms from their fatty liver.

Some people will complain of discomfort around the upper right-hand side of their abdomen where the liver is located. Your liver is encased in a capsule and if you have fat in your liver this can causes the capsule to stretch causing discomfort.

Some people complain of tiredness and fatigue.

Some people have symptoms from the health conditions that are linked to fatty liver, including diabetes, high blood pressure, sleep apnoea, heart disease.

Some people who have NASH with cirrhosis, can over time develop other specific symptoms of liver disease, such as jaundice (yellow eyes and/or skin), or swelling of the ankles and abdomen with fluid and bleeding from the gut. These issues will be discussed with people who are found to have cirrhosis.
What is cirrhosis

Cirrhosis is caused by continuous long-term damage to the liver leading to scarring, which distorts the architecture of the liver. Cirrhosis can be due to a number of things, including alcohol, viral infections, damage from the immune system and also hereditary causes, but is also related to obesity and type 2 diabetes. A healthy liver has a smooth outline and is soft in texture but cirrhosis causes the liver to become hard with irregular bumps, called nodules. Over time in cirrhosis the liver can run out of healthy cells to support its normal functions.

What can I do if I have fatty liver or NASH?

There is no medication at present that is definitively proven to improve fatty liver or NASH long-term. There are, however, a number of new treatments that have shown promising results in treating people with NASH and we are involved in a number of studies involving these medications. As such, you may be approached and asked if you would like to be involved in one of these studies. Your treatment will not be affected in any way if you decide you do not want to be involved.

If you are overweight it is really important to make some lifestyle changes. There is evidence to suggest that gradual weight loss and the introduction of regular exercise reduces fat in your liver. We can advise you about diet and exercise programs available in your area and offer you written information regarding recommended national guidelines on exercise and a British Heart Foundation booklet on diet. If indicated we can also offer a referral to our colleagues in the Obesity Service or if you live outside the Cambridge area we will ask your G.P. to refer you locally.

If you are diabetic it is really important that your diabetes is well controlled. One of the blood tests we check is your Hba1c. This tells us how well your diabetes has been controlled over the last few weeks. If this is elevated we will suggest to your GP that your medication may need to be reviewed. If appropriate you may benefit from a referral to a specialist diabetic clinic. If you are not diabetic we will check your glucose (sugar) levels at each of your clinic appointments to make sure that you have not developed diabetes.

If you have a high cholesterol level we may ask your G.P. to consider starting you on medication. A lot of people think that you should not be started on medication such as statins or fibrates if you have liver disease. If you have a heart disease risk that suggests you should be on a statin (this will be being monitored at your GP) we would recommend that you do take one, unless you have other health problems that mean that you cannot take this sort of medication. Your cholesterol levels will be monitored as part of keeping an eye on your liver disease.

If you are on medication that causes fatty liver we may ask your GP or other specialist doctor to consider stopping this and changing to an alternative drug.

If you have a high blood pressure it is important that this is well controlled. If you are already on medication your blood pressure will be checked at your GP surgery as advised. We will measure your blood pressure at your clinic visits, if we find your reading is elevated, we will ask you to make an appointment with your GP or practice nurse to have this monitored. They may start you on medication if indicated.
**If you drink alcohol** - we would advise all patients to drink within recommended drinking limits unless you are cirrhotic in which case we would recommend abstinence. If you have moderate disease we would recommend that you do not consume more than 10 units of alcohol/week. Alcohol has not caused your liver disease but it is an extra irritant to the liver if you drink more than is recommended. A lot of drinks now tell you how many units of alcohol are in them but, for example, a normal strength pint of lager contains 2 units and most bottles of wine contain 10 units.

We hope this information has helped you understand your liver disease

If you have any questions or concerns, please do not hesitate to discuss them with us.

Dr Michael Allison Consultant Hepatologist
Marie Roat Clinical Nurse Specialist

We are now a smoke-free site: smoking will not be allowed anywhere on the hospital site. For advice and support in quitting, contact your GP or the free NHS stop smoking helpline on 0800 169 0 169.

**Other formats:**

If you would like this information in another language, **large print** or audio, please ask the department where you are being treated, to contact the patient information team: patient.information@addenbrookes.nhs.uk.

Please note: We do not currently hold many leaflets in other languages; written translation requests are funded and agreed by the department who has authored the leaflet.

**Document history**

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