Alcohol & Your Liver: What You Need to Know

You & Your Care
www.bdct.nhs.uk
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To help us reduce waste, when you have finished with this booklet, please pass it on.
Introduction

The purpose of this booklet is to inform you about the relationship between alcohol use and your liver.

Your liver is a remarkable organ that has many functions which can all be affected by excessive use of alcohol.

More than 1 in 4 men and about 1 in 7 women are drinking more than is safe for them. People who drink alcohol excessively can have liver damage without experiencing any symptoms.

Excessive drinking increases the risk of liver damage and can be fatal

This booklet has been developed in partnership with; The Alcohol Care Team (Bradford District Care NHS Foundation Trust), Service Users, Bradford Teaching Hospitals and Lifeline Piccadilly Project (Bradford).
Your liver is your body’s largest organ, weighing about 1.8kg (4lb) in men and 1.3kg (2.8lb) in woman, and is a similar size to a rugby ball. Your liver holds about ½ litre (1 pint) of blood.

Your liver is positioned just under your ribs – if you place your hand over the lower right hand side of your ribs it will just about cover the area of your liver.

*With repeated damage your liver will become scarred and will not be able to repair itself*

Your liver is the body’s ‘factory’, carrying out hundreds of jobs that are vital for to your body’s functioning. Two thirds of your liver is made up of liver cells. When liver cells are damaged they can sometimes repair themselves.
What Your Liver Does

With the exception of your brain, your liver is the most complex organ in your body. It has many functions including:

- Stores vitamins, sugars and iron to help give your body energy
- Controls the production and removal of cholesterol
- Processes many of the medicines which you may take
- Makes bile which passes from your liver to your gut and helps to digest food
- Helps to remove or process alcohol, poisons and other toxins from your body
- Makes proteins that are essential for blood to clot (clotting factors)
- Synthesis and storage of amino acids, proteins and fats
- Helps you fight infection by removing bacteria from the blood

WHAT YOUR LIVER DOES 5
When you drink alcohol, it is absorbed into the bloodstream from the stomach and intestines.

All blood from the stomach and intestines first goes through your liver before circulating around the whole body.

The highest concentration of alcohol is in the blood flowing through the liver.

Therefore, if you drink alcohol faster than your liver can process it, the level of alcohol in your bloodstream rises and you become intoxicated.

Each time alcohol passes through the liver some of the liver cells die. The liver is very good at recovery and can develop new cells. However, prolonged alcohol misuse can seriously damage your liver.

Healthy liver cells can process and breakdown about one unit of alcohol per hour.
Alcohol and Units

Units are a way of measuring how much alcohol you are drinking.

One unit is eight grams of pure alcohol. Drinking above Department of Health recommended limits puts you at risk of developing liver and other health problems. You need to be aware of the measure and strength (Alcohol by Volume %) of a drink to calculate the unit content.

Examples of the unit content of some drinks

<table>
<thead>
<tr>
<th>Types of Drinks</th>
<th>ABV % (Strength)</th>
<th>Amount</th>
<th>Number of Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Spirits</td>
<td>37.5%</td>
<td>25 ml <em>Single pub measure</em></td>
<td>1 unit</td>
</tr>
<tr>
<td>Sherry</td>
<td>17.5%</td>
<td>75 cl</td>
<td>13 units</td>
</tr>
<tr>
<td>Cream Liqueurs</td>
<td>17%</td>
<td>50ml</td>
<td>0.75 units</td>
</tr>
<tr>
<td>Wine</td>
<td>12%</td>
<td>75 cl</td>
<td>9 units</td>
</tr>
<tr>
<td>Strong Lager</td>
<td>9%</td>
<td>One Pint</td>
<td>5 units</td>
</tr>
<tr>
<td>Strong Cider</td>
<td>7.5%</td>
<td>One litre</td>
<td>7.5 units</td>
</tr>
<tr>
<td>Alcopop</td>
<td>5.5%</td>
<td>275 ml</td>
<td>1.5 units</td>
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<tr>
<td>Beer, Lager, Cider</td>
<td>4.5%</td>
<td>One Pint</td>
<td>2.5 units</td>
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</table>
Recommended Units

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
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<tbody>
<tr>
<td><strong>Lower Risk</strong></td>
<td>No more than 3-4 units a day on a regular basis</td>
<td>No more than 2-3 units a day on a regular basis</td>
</tr>
<tr>
<td><strong>Increasing Risk</strong></td>
<td>More than 3-4 units a day on a regular basis</td>
<td>More than 2-3 units a day on a regular basis</td>
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<tr>
<td><strong>Higher Risk</strong></td>
<td>More than 50 units per week (or more than 8 units per day) on a regular basis</td>
<td>More than 35 units per week (or more than 6 units per day) on a regular basis</td>
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</table>

Drinks Tracker

Track your drinking with your iPhone

If you have an iPhone or iPod touch you can download the free NHSDrinks Tracker from the app store straight from your phone. It allows you to keep a drink diary and get feedback on your drinking.
Counting Your Unit Intake

Try jotting down what you drank over the last week. Then, see if you’re drinking over the lower-risk guidelines. Adding up what you normally drink can really help if you need to cut back.

Target Units for the Week:

<table>
<thead>
<tr>
<th>Day / Date</th>
<th>Time of First Drink</th>
<th>What Did you Drink</th>
<th>Where &amp; With Who</th>
<th>Quantity &amp; Amount</th>
<th>Cost (£)</th>
<th>Total Units</th>
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Weekly Total:
Liver disease is caused by damage to the liver. This can develop over a short period of time, called **acute** liver disease, or over several years called **chronic** liver disease.

Alcohol can cause significant liver damage without producing any signs or symptoms of liver disease.

Drinking too much alcohol can lead to three types of liver conditions – fatty liver, hepatitis and cirrhosis. Any or all of these conditions can occur at the same time in the same person.

**Fatty Liver**

A build up of fat occurs within liver cells in most people who drink heavily. In itself, fatty liver is not usually serious and does not cause symptoms. Fatty liver will usually reverse if you stop drinking heavily. This can happen quite quickly after stopping. However, in some people the fatty liver progresses and this can lead to inflammation and scarring (cirrhosis).

**Alcohol Related Hepatitis**

Hepatitis means inflammation of the liver. The inflammation can range from mild to severe. Mild hepatitis may not cause any symptoms. The only indication of inflammation may be an abnormal level of liver enzymes in the blood which can be detected by a blood test.

In some cases the hepatitis becomes persistent (chronic), which can gradually change the liver and eventually cause cirrhosis. A very severe bout of alcohol related hepatitis can quickly lead to liver failure. This can cause deep jaundice (yellowing of the skin and eyes), blood clotting problems, confusion, coma, bleeding into the guts, and is fatal in a third of cases.
Alcohol Related Cirrhosis

This is a condition where normal liver tissue is replaced by scar tissue called fibrosis. The scarring tends to be a gradual process.

Scar tissue affects the normal structure and regrowth of liver cells. Liver cells become damaged and die as scar tissue gradually develops. The liver gradually loses its ability to function. About 1 in 10 excessive drinkers will eventually develop cirrhosis. There are causes of cirrhosis other than alcohol, for example, persistent viral hepatitis and some hereditary and metabolic diseases. If you have another persistent liver disease and drink heavily, you are likely to increase your risk of developing cirrhosis. Cirrhosis also increases the risk of developing liver cancer.

Complications

When the liver is damaged it is unable to remove chemicals from the blood. Build up of toxins such as ammonia can cause other complications such as confusion (hepatic encephalopathy).

Scarring in the liver (cirrhosis) can cause portal hypertension – dilation of important veins used to shunt blood away from the liver to other areas in the body. This can lead to oesophageal varices – bleeding from the gut, a life threatening medical emergency.

Regular excessive alcohol use increases the chances of developing other conditions such as pancreatitis. The pancreas gland produces lots of chemicals which help to digest food. Excessive use of alcohol can cause inflammation in the pancreas and this can be fatal.
Symptoms of Alcohol Related Liver Disease

Signs and Symptoms may include:

• Nausea, vomiting, abdominal pains, diarrhoea
• Fatigue
• Yellowing of the skin and whites of the eyes (jaundice)
• Swelling in the legs, ankles and feet due to a build-up of fluid (oedema)
• Abdominal swelling due to a build-up of fluid (ascites)
• A high temperature (fever) and shivering attacks
• Itchy skin
• Hair loss
• Unusually curved fingertips and nails (clubbed fingers)
• Blotchy red palms
• Significant weight loss
• Weakness and muscle wasting
• Confusion and memory problems, problems sleeping (insomnia) and changes in your personality due to a build-up of toxins in the brain
• Vomiting blood (haematemesis) and/or black, tarry stools due to internal bleeding
• Blood clotting problems – symptoms include a tendency to bleed and bruise more easily, such as frequent nose bleeds and bleeding gums
• Increased sensitivity to alcohol and drugs because the liver cannot process them
Diagnosing Alcohol Related Liver Disease

A physical examination carried out by a doctor may identify signs of alcohol related liver disease.

Diagnosis will include assessment for symptoms listed previously and other signs such as enlarged liver or spleen.

A blood test called a Liver Function Test (LFT) can detect inflammation and damage to the liver, as well as its inability to function properly.

An Ultrasound Scan can be used to look at the liver to see if it is damaged. This is a painless test that uses sound waves to create images of organs and structures inside the body.

If these tests are positive, a biopsy is generally taken to confirm a diagnosis. A small sample of the liver is taken so that it can be investigated under a microscope. A doctor may recommend further investigations.

Images supplied by the British Liver Trust
Understanding Liver Function Tests (LFTs)

A blood test can be helpful in diagnosing problems with your liver’s functioning.

It is important to remember that liver blood test results are like a snapshot of your blood structure at any one given time. Your liver function may be monitored or checked over a period of time. Blood tests only form part of the picture and are useful for monitoring someone with liver disease. A few of these tests are described below:

**Albumin**

is a very important protein that helps keep fluid pressures in the body stable and carries many substances around the body. Albumin may decrease in chronic liver disease, particularly if the disease is getting worse, but may also be decreased for other reasons such as inflammation.

**Bilirubin**

from haemoglobin and the main pigment in bile (a yellow/green substance made by the liver). If the liver is not working levels of this can increase, causing jaundice.
Clotting studies

are a measure of the bloods ability to clot (coagulation). The liver produces most of the proteins that allow this to happen. Worsening coagulation results can indicate deteriorating liver function. When the liver is damaged your blood becomes too ‘thin’ and takes longer to clot. This may lead to bruising more easily.

ALP (Alkaline Phosphate)

is an enzyme found mainly in the bile ducts of the liver. An increase in ALP and another liver enzyme called GGT (Gamma Glutamyl Transferase) can indicate a form of liver disease where there may be a blockage of the bile duct. This stops bile being transported from the liver.

Platelets

measured within the Full Blood Count (FBC) are an important part of the clotting process. Platelet production can be affected by metabolic disorders and vitamin deficiencies in the body, which is accelerated by alcohol use.

Some people can have a very damaged Liver and have a normal blood test.
Treatment

You may be referred to a liver specialist (Hepatologist) who will advise you regarding necessary investigations and treatment.

Non-severe cases of fatty liver and alcohol related hepatitis can often be treated easily by stopping alcohol intake which allows the liver to repair itself. Cutting down to the Department of Health’s recommended daily units of alcohol can help to reverse liver damage caused by alcohol.

The treatment of cirrhosis depends upon the type and stage of the condition. The aims of treatment are to stop the progression of the cirrhosis, reverse the damage that has occurred and treat complications that are disabling or life threatening.

A liver transplant may be the only option in cases where the scarring to the liver is so severe that it can no longer function. However, as there is a very limited supply of liver transplants and a long waiting list, patients must generally have abstained from alcohol for 6 months in order to qualify for receiving a liver transplant.

Abstaining from alcohol is the most important aspect of treatment

If you are not physically dependent on alcohol it is safe for you to stop drinking.

However, if you are physically dependent you are likely to experience a range of symptoms including; shaking, retching, sweating, seizures and Delirium Tremens (DTs). Unless you have completed treatment (alcohol detoxification) and been advised that you are safe to abstain from alcohol, you should not suddenly stop drinking or drastically reduce your alcohol intake.

A detoxification treatment may be advised if you are alcohol dependent. Referral for specialist help may be best for some people.

Help and treatment is available if you find that you cannot stop drinking alcohol. Seek professional, medical advice around the best course of action for your individual circumstances. At the back of this booklet there is a useful list of local services.

Severe symptoms of alcohol withdrawal (such as DTs or seizures) are a medical emergency and you should seek urgent medical attention if you experience any of these.
A 2009 Department of Health survey revealed that drinking five pints of lager a week adds up to 44,200 calories over a year, equivalent to eating 221 doughnuts.

The calories in alcohol soon add up increasing your waistline and affecting your health. Alcohol contains 7 calories per gram almost the same as pure fat!

<table>
<thead>
<tr>
<th>Vodka or Gin and tonic</th>
<th>Medium Glass White Wine (175ml)</th>
<th>Bottle of Wine (Red)</th>
</tr>
</thead>
<tbody>
<tr>
<td>126 calories (Packet of Crisps)</td>
<td>130 calories (Fruit Scone)</td>
<td>510 calories (Burger in a Bun)</td>
</tr>
<tr>
<td>5% Lager (Pint)</td>
<td>Cider (Pint)</td>
<td>Bitter / Ale (Pint)</td>
</tr>
<tr>
<td>240 – 250 calories (French Fries)</td>
<td>180 – 250 calories (Beans on Toast)</td>
<td>180 – 230 calories (Doughnut)</td>
</tr>
</tbody>
</table>
Eating Well for Your Liver

Alcohol does not provide the body with any nourishment. Food and non-alcoholic drinks are important to ensure that your body receives all the nutrients it requires.

It is important to include a wide variety of foods in your diet. Try to include something from each of these food groups every day.

<table>
<thead>
<tr>
<th>Food Group</th>
<th>Why are they important?</th>
<th>What types of foods?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbohydrates</td>
<td>Provide energy and fibre for good gut health</td>
<td>Bread, Chapattis, Rice, Noodles, Pasta, Potatoes, Cereals, Crackers</td>
</tr>
<tr>
<td>Proteins</td>
<td>Help growth and repair of body tissues including the liver</td>
<td>Meat, Chicken, Fish, Eggs, Beans, Pulses, Nuts</td>
</tr>
<tr>
<td>Fruit &amp; Vegetables</td>
<td>Provide essential vitamins and minerals</td>
<td>Oranges, Apples, Bananas, Grapes, Pears, Fruit Juice Peas, Carrots, Broccoli, Sweetcorn, Salad</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Tinned or frozen are just as good!</em></td>
</tr>
<tr>
<td>Dairy</td>
<td>Provide protein and calcium for healthy bones and teeth</td>
<td>Milk, Cheese, Yoghurt</td>
</tr>
<tr>
<td>Fats &amp; Sugars</td>
<td>Provide energy for the body</td>
<td>Crisps, Chocolate, Cake, Biscuits, Bombay Mix, Samosa, Butter, Oil, Fizzy pop</td>
</tr>
</tbody>
</table>
If you do not have the nutrients that your body requires you may feel weak, have poor mobility, low mood and you may lose weight. Many people who drink more alcohol than is recommended, or have existing liver disease may have some degree of malnutrition. Malnutrition is a serious condition that occurs when a person’s diet does not contain the right amount of nutrients.

This can be caused by a variety of factors:

- poor appetite
- feeling sick
- feeling full from alcohol
- forgetting to eat
- not thinking food is important
- low finances

**Thiamine (Vitamin B1)**

Thiamine is an important vitamin needed to help make new brain cells. People who are long term excess alcohol users and/or have a poor diet are at high risk of having low levels of Thiamine.

Good sources of Thiamine are found in plant and animal foods such as yeast/beef extract e.g. Bovril or Marmite, cereals, potatoes with the skin on, bread, nuts, seeds, dried fruit, peas, kidney/baked beans, pork and fish.

Symptoms of Thiamine deficiency are fatigue, irritability, drowsiness, poor concentration and memory problems. This can lead to a condition known as **Wernicke-Korsakoff Syndrome**. If untreated this can lead to permanent brain damage.

You may be prescribed Thiamine if you are admitted to hospital. It is likely you will be advised to continue taking thiamine in tablet form when you are discharged. If so, you should discuss with your GP.
Local & National Contacts

British Liver Trust
2 Southampton Road, Ringwood, BH24 1HY
Tel: 0800 652 7330 (information line)

NHS Choices
Web: www.nhs.uk

Patient.co.uk
Web: www.patient.co.uk

Drinkaware
Web: www.drinkaware.co.uk

If you feel that you, a relative or friend needs help or support with any alcohol related problem you can get free confidential advice from any of the agencies listed below or see your doctor.

Piccadilly Project (18+)
1st Floor, Auburn House, 8 Upper Piccadilly, Bradford, BD1 3NU
Tel: 01274 735775

Project 6
11-19 Temple Street, Keighley, BD21 2AD
Tel: 01535 610180

Alcoholics Anonymous
PO Box 1, 10 Toft Green, York, YO1 7ND
Tel: 0845 769 7555
Web: www.alcoholics-anonymous.org.uk

Carers Resource
Unit 15, Park View Court, St Paul’s Road, Shipley, BD18 3DZ
Tel: 01274 449660
Web: www.carersresource.org

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