THE ROADSHOW

Love Your Liver is a national awareness campaign from the British Liver Trust aimed at encouraging us all to look after our livers and stay healthy.

Further information, including an online health check can be found at loveyourliver.org.uk

www.britishlivertrust.org.uk
How it works

- Members of the public who are interested in participating will be asked to complete the Love Your Liver Health Screener.
- If the Health Screener shows risk factors for liver damage then they will be offered a FibroScan, performed by an experienced operator.
- They will then have a consultation with a Hepatology health professional to discuss the results of their Liver Health Check and FibroScan.
- They will be offered lifestyle advice and, if indicated, will be advised to visit their GP and given a letter of referral.

www.britishlivertrust.org.uk
**The Love Your Liver Health Screener**

**POSITIVE RISK FOR ALCOHOL**

This is the AUDIT-C questionnaire.

- A score of 5+ is AUDIT-C positive and indicates **increased or higher risk drinking**.
- If AUDIT-C positive, consideration will be given to asking the Extended AUDIT questions
- A score of 8+ on the extended AUDIT questions generally indicates **harmful or hazardous drinking**.

www.britishlivertrust.org.uk
The Love Your Liver Health Screener

Assess your risk of non-alcoholic fatty liver disease (NAFLD)

1. Do you regularly have three meals a day, including breakfast?  
   - Yes (9)  
   - No (1)

2. Do you eat take-aways or ready meals twice or more per week?  
   - Yes (3)  
   - No (9)

3. Do you regularly eat crisps, chocolate, cakes or biscuits between meals or in the evenings?  
   - Yes (3)  
   - No (9)

4. Do you have sugary drinks such as fizzy drinks, full sugar squash/cordial or sugar in tea or coffee?  
   - Yes (3)  
   - No (9)

5. Do you have processed foods such as sausages, pies, chips, pizza or burgers three or more times per week?  
   - Yes (3)  
   - No (9)

   TOTAL SCORE

6. Do you have diabetes?  
   - Yes  
   - No

7. Do you have high blood pressure?  
   - Yes  
   - No

8. How often do you exercise?  
   - Never (1)  
   - Every now and then (3)  
   - 1-3 times a week (3)  
   - 4-6 times a week (4)  
   - Every day (5)

   (Activity which causes you to get warm, breathe harder and your heart to beat faster.)

**POSITIVE RISK FOR NAFLD**

- Elevated BMI and/or a ‘yes’ answer for diabetes and/or high blood pressure + a score of 2 or more for Q1-5.
- Normal or slightly elevated BMI and a ‘yes’ answer for diabetes and/or high blood pressure + a score of 4 or more for Q1-5.

**In addition:**

- Advice for respondents with an elevated BMI, dietary risk factors or who admit to infrequent exercise.

www.britishlivertrust.org.uk
## The Love Your Liver Health Screener

### Assess your viral hepatitis risk

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Have you received a blood transfusion before September 1991 or a blood product (such as a clotting factor) before 1986 in the UK, or abroad at any time?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Have you ever had medical treatment or an operation abroad or in unsterile conditions?</td>
<td>Yes</td>
<td>No</td>
<td>Don’t know</td>
</tr>
<tr>
<td>3. Have you ever had dental treatment at home or abroad in unsterile conditions?</td>
<td>Yes</td>
<td>No</td>
<td>Don’t know</td>
</tr>
<tr>
<td>4. Have you ever had a piercing or tattoo using tools that may have been unsterile?</td>
<td>Yes</td>
<td>No</td>
<td>Don’t know</td>
</tr>
<tr>
<td>5. Have you ever had unprotected sex (without a condom) with someone who may have viral hepatitis?</td>
<td>Yes</td>
<td>No</td>
<td>Don’t know</td>
</tr>
<tr>
<td>6. Have you ever shared a razor or toothbrush with someone who may have viral hepatitis?</td>
<td>Yes</td>
<td>No</td>
<td>Don’t know</td>
</tr>
<tr>
<td>7. Have you ever shared equipment to take drugs, such as cocaine, that you don’t inject into your blood?</td>
<td>Yes</td>
<td>No</td>
<td>Don’t know</td>
</tr>
<tr>
<td>8. Have you ever shared needles or other equipment used for injecting drugs?</td>
<td>Yes</td>
<td>No</td>
<td>Don’t know</td>
</tr>
</tbody>
</table>

**Total answers:**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Don’t know</th>
</tr>
</thead>
</table>

### POSITIVE RISK FOR VIRAL HEPATITIS

- If the respondent answers ‘Yes’ or ‘Don’t know’ to any of the questions.

[www.britishlivertrust.org.uk](http://www.britishlivertrust.org.uk)
The FibroScan®

- The FibroScan is a non-invasive imaging scan that evaluates the degree of liver stiffness, or scarring, known as fibrosis.
- Like an ultrasound scan, a Fibroscan uses sound waves; by determining the speed of sound waves moving through the liver using a sonogram.
- The Fibroscan test does not differentiate between liver diseases i.e. they are not diagnostic tests but markers of the severity of liver injury.
GP Referral will be triggered by the following:

- **FibroScan reading of ≥7 with or without risk factors**
- **FibroScan reading of ≤6 with risk factors**
- Those who are too overweight for a portable FibroScan will be signposted to their GP for advice re. weight loss solutions

Visit your GP

Thank you for getting your liver checked out at the Love Your Liver Roadshow!

Following your consultation with our liver specialist, we recommend that you should book an appointment with your GP at your earliest convenience and request a Liver Function Test (LFT). This will enable your GP to see if any further action is needed with regards to achieving good liver health. Please do not worry at this stage; this is a precautionary measure.

A note to your GP...

Dear Doctor

Your patient recently attended a liver clinic as part of the Love Your Liver campaign; a national liver awareness campaign coordinated by the British Liver Trust.

Following completion of a liver health self-assessment and the result of a subsequent Fibroscan test (attached), we recommend that a Liver Function Test (LFT) is conducted and, if necessary in light of the results of the LFT, we would also suggest an ultrasound and consideration of possible referral to a specialist hepatologist or gastroenterologist.

If you would like any assistance or advice on any aspect of the Liver Function Test or ultrasound scan, please do contact your local liver team via the British Liver Trust on 01425 481320.

If you would like to offer any further information to your patient please direct them to the British Liver Trust website [www.britishlivertrust.org.uk](http://www.britishlivertrust.org.uk), which has information on liver-related tests and conditions.

Thank you for your support of the Love Your Liver campaign – the first annual national liver awareness initiative in the UK launched by the British Liver Trust in January 2012.

Best regards

Andrew Langford
Chief Executive
British Liver Trust
01425 481320

[www.britishlivertrust.org.uk](http://www.britishlivertrust.org.uk)
Causes of NAFLD/NASH

People most at risk are those who:

• are overweight or obese.
• have a poor diet and do little or no exercise
• have insulin resistance or other features of metabolic syndrome (or syndrome x)
  - type 2 diabetes + high blood pressure + high cholesterol
• have very rapid weight loss (i.e. following weight reduction surgery)
• Have other causes including prolonged fasting, some drug treatments, intravenous feeding, polycystic ovary syndrome (PCOS) and hepatitis B and C.

Source: British Liver Trust : Fatty Liver and NASH publication
NAFLD / NASH management

All patients

- Encouraged to exercise, as there is good evidence that even in the absence of weight loss exercise improves NASH
- Advised to avoid sweetened soft drinks
- Advised to minimise fast food

Obese Patients

- Weight reducing diet (aim for 10%, 1-2lb per week)
- In patients with BMI>28 with risk factors, or >30 without risk factors, consider treatment with Orlistat

www.britishlivertrust.org.uk

Source: Dr Richard Aspinall BSc (Hons), MBChB (Hons), PhD, MRCP – Consultant Hepatologist, Queen Alexandra Hospital, Portsmouth
NAFLD/NASH Management

Diabetic Patients

• Good diabetic control (HbA1c <6.5%)
• Metformin
• Thiazolidinediones (rosiglitazone and pioglitazone)
• Dietician for re-education
• Diabetologist if glucose control is difficult

Patients with Hyperlipidaemia and abnormal LFT’s

*Dyslipidaemia should be aggressively addressed*

• Dietician Review
• Hypercholesterolaemia - Statins
• Hypertriglyceridaemia - Fibrate
• Lipid Clinic

Source: Dr Richard Aspinall BSc (Hons), MBChB (Hons), PhD, MRCP – Consultant Hepatologist, Queen Alexandra Hospital, Portsmouth

www.britishlivertrust.org.uk
AUDIT
Alcohol Use Disorders Identification

- The Alcohol Use Disorders Identification Test was developed by the World Health Organisation as a simple questionnaire based method of screening for excessive drinking and to assist in brief intervention.

- AUDIT-C is a shortened version (just the first three questions) to ascertain if there is cause for concern.
  - A score of 5+ is AUDIT-C positive and indicates increased or higher risk drinking.

- Consider asking Audit-C positive patients the additional Extended AUDIT questions.
  - A score of 8+ indicates increasingly harmful or hazardous drinking.

www.britishlivertrust.org.uk

Source: AUDIT : Guidelines for use in primary care, World Health Organisation
<table>
<thead>
<tr>
<th>Questions</th>
<th>Scoring system</th>
<th>Your score</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often do you have a drink containing alcohol?</td>
<td>Never, Monthly or less, 2 – 3 times per month, 2 – 3 times per week</td>
<td>4+ times per week</td>
</tr>
<tr>
<td>How many units of alcohol do you drink on a typical day when you are drinking?</td>
<td>1 - 2, 3 - 4, 5 – 6, 7 – 9, 10+</td>
<td></td>
</tr>
<tr>
<td>How often have you had 6 or more units (if female) or 8 or more units (if male), on a single occasion in the last year?</td>
<td>Never, Less than monthly, Monthly, Weekly, Daily or almost daily</td>
<td></td>
</tr>
</tbody>
</table>
## Extended AUDIT

<table>
<thead>
<tr>
<th>Questions</th>
<th>Scoring system</th>
<th>Your score</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often during the last year have you found that you were not able to stop drinking once you had started?</td>
<td>Never</td>
<td>Less than monthly</td>
</tr>
<tr>
<td>How often during the last year have you failed to do what was normally expected from you because of your drinking?</td>
<td>Never</td>
<td>Less than monthly</td>
</tr>
<tr>
<td>How often during the last year have you needed an alcoholic drink in the morning to get yourself going after a heavy drinking session?</td>
<td>Never</td>
<td>Less than monthly</td>
</tr>
<tr>
<td>How often during the last year have you had a feeling of guilt or remorse after drinking?</td>
<td>Never</td>
<td>Less than monthly</td>
</tr>
<tr>
<td>How often during the last year have you been unable to remember what happened the night before because you had been drinking?</td>
<td>Never</td>
<td>Less than monthly</td>
</tr>
<tr>
<td>Have you or somebody else been injured as a result of your drinking?</td>
<td>No</td>
<td>Yes, but not in the last year</td>
</tr>
<tr>
<td>Has a relative or friend, doctor or other health worker been concerned about your drinking or suggested that you cut down?</td>
<td>No</td>
<td>Yes, but not in the last year</td>
</tr>
</tbody>
</table>

Source: AUDIT : Guidelines for use in primary care, World Health Organisation
Appropriate interventions

Using the AUDIT Score, there is a simple way to provide each patient with an appropriate intervention, based on the level of risk.

<table>
<thead>
<tr>
<th>Audit Score</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 7</td>
<td>Alcohol education</td>
</tr>
<tr>
<td>8 - 15</td>
<td>Simple advice</td>
</tr>
<tr>
<td>16 - 19</td>
<td>Simple advice plus brief counselling and continued monitoring</td>
</tr>
<tr>
<td>20 - 40</td>
<td>Referral to specialist for diagnostic evaluation and treatment</td>
</tr>
</tbody>
</table>
Hepatitis B

- Hepatitis B is the most widespread form of hepatitis and the World Health Organisation estimates that one third of the world’s population has been infected at some time and that there are approximately 350 million people infected long term.
- In the UK approximately 1 in 350 people are thought to be chronically infected.
- In inner city areas where a high percentage of the population are from countries where hep B is common up to 1 in 60 pregnant women may be infected.
- **There is an effective vaccine available for hepatitis B.**

Sources: British Liver Trust : Hepatitis B publication & Migrant Health : HPA 2006
Who to test

Exposure to infected blood

People are at risk of catching hepatitis B if they:

• inject drugs and share needles and other equipment, such as spoons and filters, or are having a sexual relationship with someone who injects drugs

• have had an open wound, cut or scratch, and come into contact with the blood of someone with hepatitis B

• have had medical or dental treatment in a country where equipment is not sterilised properly

• work closely with blood (for example, healthcare workers and laboratory technicians are at increased risk of needlestick injury when the skin is accidentally punctured by a used needle)

• have had a tattoo or body piercing in an unsafe, unlicensed place

Source: NHS Choices
Who to test

Exposure to infected blood (continued)

- had a blood transfusion in the UK prior to 1972 (since 1972 all blood donations in the UK have been tested for hepatitis B)
- have had a blood transfusion in a country where blood is not tested for hepatitis B
- have shared toothbrushes, razors and towels that are contaminated with infected blood

Exposure to infected body fluids

- People who have had sex with an infected person without using a condom; this includes anal and oral sex.
- Generally, risk increases in people who are sexually active and have unprotected sex with several different partners; especially sex workers and men who have sex with other men.

Source: NHS Choices

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Who to test

Mother to baby

• There is a high risk of transmission of the virus from mother to baby during birth. The Department of Health recommends that babies born to women with HBV should receive immunisation at or as soon as possible after birth and a full course of immunisation thereafter.

Geographical risks

• People will have an increased risk if they (or their sexual partner) grew up, lived or worked in a part of the world where hepatitis B is relatively common.
• In England, immigrant communities known to have slightly higher rates of hepatitis B include people from sub-Saharan Africa, people from South Asia (India, Pakistan, Sri Lanka and Bangladesh) and people from China as well as other East Asian countries.

Source: NHS Choices
Goals of hepatitis B treatment

• Prevention of long-term negative clinical outcomes (eg, cirrhosis, HCC, death) by durable suppression of HBV DNA

• Primary treatment endpoint
  • Sustained decrease in serum HBV DNA level to low or undetectable

• Secondary treatment endpoints
  • Decrease or normalize serum ALT
  • Improve liver histology
  • Induce HBeAg loss or seroconversion
  • Induce HBsAg loss or seroconversion

Source: Dr Richard Aspinall BSc (Hons), MBChB (Hons), PhD, MRCP – Consultant Hepatologist, Queen Alexandra Hospital, Portsmouth

www.britishlivertrust.org.uk
Who to vaccinate?

- babies born to infected mothers
- injecting drug users +
  - those who could potentially ‘progress’ to injecting
  - non-injecting users who are living with injecting users
  - sexual partners of injecting users
  - children of injecting users
- individuals who change their sexual partners frequently, particularly
  - men who have sex with men
  - male and female sex workers
- close family and friends of infected people
- families adopting children from high-risk countries

Who to vaccinate?

- foster carers
- patients who receive regular blood transfusions or blood products +
  - their families and carers
- people with chronic renal failure
- people with chronic liver disease
- Inmates of custodial institutions
- Individuals in residential accommodation for those with learning difficulties
- people travelling to or going to reside in high-risk countries
- people whose work places them at risk, such as healthcare workers, prison wardens, and laboratory staff, morticians and embalmers

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Hepatitis C

- Hepatitis C is found worldwide. The World Health Organisation estimate that about 150 million people are chronically infected and at risk of developing liver cirrhosis and/or liver cancer. Countries with high rates of chronic infection are Egypt (15%), Pakistan (4.8%) and China (3.2%) \(^1\).
- The most recent national estimates suggest that around 216,000 individuals are chronically infected with hepatitis C in the UK\(^2\).
- **Hepatitis C is curable, but there is currently no vaccine available.**

Sources: \(^1\)World Health Organisation Fact Sheet No. 164 July 2012; \(^2\)Hepatitis C in the UK 2012 report, Health Protection Agency
Who to test

Hepatitis C testing should be offered to anyone who:

- Has unexplained abnormal liver function tests (e.g. elevated ALT), or unexplained jaundice.
- Has ever injected drugs, even if it was only once or twice, or many years ago.
- Has had a blood transfusion (before September 1991) or blood products (before 1986 in the UK).
- Is the child of a mother with hepatitis C (The test result may be difficult to interpret in children under 18 months, due to the presence of maternal antibodies and specialist virological advice will be needed).
- Is a regular sexual partner of someone with hepatitis C.

Source: NHS Choices

www.britishlivertrust.org.uk
Who to test

- Has had medical or dental procedures abroad, in countries where infection control may be poor.
- Has been accidentally exposed to blood where there is a risk of hepatitis C infection.
- Has had an ear piercing, a body piercing, tattoo, acupuncture or electrolysis with unsterile equipment.
- Has previously been diagnosed with non-A, non-B hepatitis and not subsequently tested for hepatitis C.
- Current scientific evidence does not support the need for hepatitis C testing of those whose only risk factor is sharing banknotes or straws for intranasal cocaine use (INCU). However, hepatitis C testing should be considered on a case-by-case basis if INCU may be an indicator of injecting drug use.

Source: NHS Choices
Goal of hepatitis C treatment

- Prevention of complications and death from HCV infection.
- Treatment responses currently defined by short-term surrogate parameters rather than clinical endpoints
  - Biochemical (normalisation of serum ALT levels)
  - Virological (undetectable serum HCV RNA by PCR)
  - Histological (> 2 point improvement in necroinflammatory score with no worsening in fibrosis score).


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Assessment Summary

• Assess the whole patient, including symptoms and physical examination

• Consider risk factors for liver disease
  – BMI / waist circumference
  – Assess alcohol intake (AUDIT)
  – BBV risk (who is at risk will be discussed in detail later)
  – Pre-disposing conditions i.e. diabetes

• Cause for concern = investigate further

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“Liver Function Tests”

• “Liver function tests” (LFT’s) - not really tests of true liver function
• Enzymes – ALT, AST, Alkaline Phosphatase - markers of liver “irritation” or inflammation rather than synthetic function
• Liver function best measured by prothrombin time (clotting), albumin, bilirubin

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Source: Dr Richard Aspinall BSc (Hons), MBChB (Hons), PhD, MRCP – Consultant Hepatologist, Queen Alexandra Hospital, Portsmouth
γ-Glutamyl transpeptidase (GGT)

- The high sensitivity and very low specificity seriously hampers the usefulness of this test.
- Can be elevated in:
  - a whole host of liver diseases
  - drugs, alcohol
  - obesity, dyslipidaemia, diabetes
  - CCF
  - kidney, pancreas, prostate.
- If **Alkaline Phosphatase and GGT** are elevated then the rise in ALP is likely to be **hepatic in origin**.

Source: Dr Richard Aspinall BSc (Hons), MBChB (Hons), PhD, MRCP – Consultant Hepatologist, Queen Alexandra Hospital, Portsmouth
Abnormal LFTs without symptoms

The majority of abnormal LFTs in **asymptomatic** people occur in those with:

- Diabetes or metabolic syndrome (increased risk of NAFLD)
- Excessive alcohol intake
- Chronic hepatitis B
- Chronic hepatitis C
- Drugs

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Source: Dr Richard Aspinall BSc (Hons), MBChB (Hons), PhD, MRCP – Consultant Hepatologist, Queen Alexandra Hospital, Portsmouth
Indications for urgent referral

**Biochemistry**
- Impaired synthetic liver function
  - Hypoalbuminaemia
  - INR/PT
- Low platelet count
- Renal dysfunction - ↓sodium

**Physical Examination**
- Jaundice
- Ascites
- Encephalopathy
- Enlarged spleen

Source: Dr Richard Aspinall BSc (Hons), MBChB (Hons), PhD, MRCP – Consultant Hepatologist, Queen Alexandra Hospital, Portsmouth

www.britishlivertrust.org.uk
Sources of support for your patients

- The British Liver Trust provide:
  - **Information line**: 01425 481320
  - **Website**: [www.britishlivertrust.org.uk](http://www.britishlivertrust.org.uk)
  - Patient information
  - Support Groups