

Patient Information Leaflet

Liver Transplantation Assessment

South West Liver Unit
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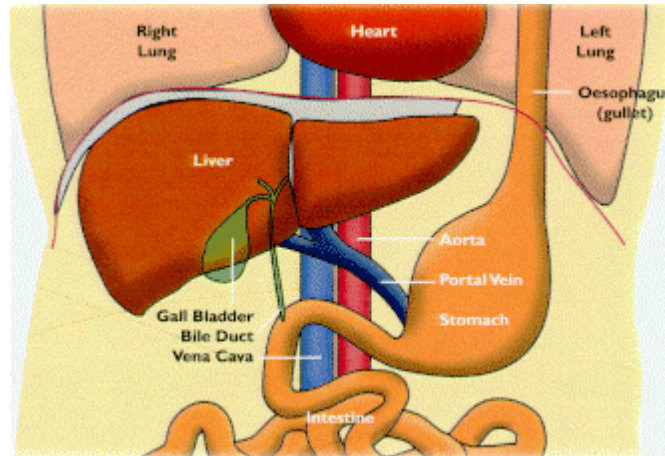
Information about Liver Transplantation:

Your specialist may recommend a liver transplant when liver disease is advanced and other treatment options are unavailable. The purpose is to replace your diseased liver with a healthy liver. Ideally, after a transplant, you will be free from disease and lead a fairly normal life. Indications for liver transplant include:

- Hepatitis B or C.
- Non-Alcoholic Steato-Hepatitis (NASH).
- Primary Biliary Cirrhosis.
- Alcohol Related Cirrhosis.
- Autoimmune Hepatitis.
- Hepatocellular Carcinoma.
- Primary Sclerosing Cholangitis.
- Acute/fulminant liver failure.

Where is the Liver?

The liver is the largest solid organ in the body. It is in the abdomen on the right side of the body between the diaphragm and the lower rib cage.



What does the liver do?

The liver performs many important functions that are essential for life. These include:

- Manufacturing new body proteins.
- Blood clotting factors.
- Producing bile that helps breakdown fatty foods.
- Converting food into energy.
- It also stores essential vitamins, minerals and carbohydrates.
- Produces important factors for the immune system.
- The liver helps break down drugs.
- Processes hormones.
- And remove toxins from the blood.

What happens when the liver becomes diseased?

A healthy liver has a great ability to repair itself and can overcome most harmful things such as viral infection or damage from alcohol and drugs or fat.

Sometimes the damage is so severe that it causes rapid destruction of the liver cells resulting in acute liver failure. In other cases there is gradual destruction of liver cells, which causes scarring. This scar formation is irreversible and leads to a condition called cirrhosis. Common causes of cirrhosis in adults are chronic viral hepatitis, Non-alcoholic steato-hepatitis (often seen in diabetic patients/over-weight patients) sclerosing cholangitis, primary biliary cirrhosis and alcohol misuse.

It is possible when the liver is scarred it can lead to the development of a liver cancer and if this is a certain size/number it may be a reason to think about liver transplant. Transplantation may be considered in certain cases where the cancer has not spread but the tumour cannot be removed by any other means except removal of the entire liver.

What are the symptoms of chronic liver disease?

The symptoms are many and varied. You may have experienced some or all of the following:

- **Fatigue:** varying degrees of tiredness which may affect your quality of life.
- **Jaundice:** yellow colouring of the skin and the whites of the eyes caused by a build-up of bilirubin in the blood.
- **Dark urine:** caused by bilirubin in the urine.
- **Pale stools:** difficult to flush away due to high fat content.
- **Pruritus:** a persistent itch all over your body which is often difficult to treat.
- **Weight loss:** the diseased liver cannot properly absorb nutrients from the food you eat.

- **Muscle wasting:** the body will start to break down muscle as a source of energy if it does not get essential nutrients from the food you eat.
- **Tendency to bruise and bleed easily:** caused by the inability of the diseased liver to make enough blood clotting factors.
- **Ascites:** build-up of fluid in the abdomen.
- **Vomiting blood:** blood is not able to flow through the scarred liver easily. This causes a build-up of pressure in the blood vessels of the oesophagus (gullet). If the blood vessels become very swollen they may burst and bleed into your stomach causing you to vomit blood, if there is bleeding into your stomach you may also notice your stools are black due to digested blood passing through your system.
- **Mental confusion:** (encephalopathy) the cause of this is not well understood but is thought to be due to the build-up of toxins in the blood. If it progresses it can lead to coma.

Do all patients with liver disease need a transplant?

Not all patients with liver disease will benefit from a transplant. Other treatments are available to relieve the symptoms of liver disease. A liver transplant is only considered when these treatments are no longer helpful or your liver disease becomes advanced or irreversible. In this situation a detailed assessment is necessary to determine if liver transplantation is now an appropriate treatment option.

Assessment for Liver Transplant

Patients who have been told that they require assessment for potential liver transplantation will either be asked to come into hospital for several days or will stay at The Lodge, close to Derriford and appointments made on an outpatient basis.

The tests will be requested over two days to try to ensure all investigations can be completed at this time, which will enable the team to make a decision regarding your on-going care.

The purpose of the assessment is to undertake certain investigations which the Liver Transplant centre that you will be referred to, require in order to determine whether you will be placed on the transplant waiting list. This process means that you will undertake all of these procedures closer to your home rather than travelling to London for the assessment.

What tests will I need?

During your assessment you will have a large number of medical tests. These are to make sure that you are fit enough for a liver transplant if it is decided that this is the most suitable treatment for your condition. The number and type of tests that need to be completed during your assessment vary from person to person but usually include:

In-depth medical history and physical examination

Blood tests: to assess

- The function of your liver and kidneys.
- Full blood count.
- The ability of your blood to clot.
- The function of your kidneys.
- The level of oxygen in your blood.
- Thyroid function, lipids, autoimmune markers, iron levels.
- Viruses, including Hepatitis B, Hepatitis C, Cytomegalovirus (CMV) and HIV infection.

Endoscopy: an examination of the oesophagus (gullet), stomach and duodenum (gut) using a flexible tube passed down the throat. Unless this has been done recently by your referring team.

Electrocardiogram (ECG) and Echocardiogram assess the circulation to your heart and for strain placed on the heart by your liver disease. If any problems are identified you may require further investigations.

Abdominal ultrasound scan with Doppler, to assess the flow of blood through the liver.

Abdominal CT scan: to assess the details of your liver anatomy and circulation, which is important in planning for possible liver transplantation.

Pulmonary function tests: breathing tests, which provide a detailed assessment of your lungs.

Liver biopsy: if the cause of your liver disease is uncertain it may be necessary to remove a very small amount of liver tissue to be examined under the microscope. This is done on the ward under local anaesthetic using a special needle. It is necessary to remain in bed for six hours after the test.

Anaesthetic assessment: to ensure your fitness for anaesthesia during the transplant operation. This includes a CPEX test. This requires you to be exercised on a static bike to assess your body response to stress.

Dental assessment: it is important that your teeth and gums are healthy. Any major dental work must be completed before you could have a transplant.

Nutritional assessment: it is important that you remain as well-nourished as possible. Liver disease is often associated with weight and muscle loss. You will be seen and assessed by a dietitian for advice on maintaining your weight and fluid

control.

Social and psychological assessment: liver transplantation is a major undertaking and requires total commitment from you and your family /carers. You may be assessed by a psychiatrist, particularly if your liver disease has resulted from alcohol or substance misuse problems in the past.

This is an essential part of the assessment which may require a separate appointment. **This is an essential part of your assessment and it is ESSENTIAL you attend.** You may be referred to the social work team to ensure that you have appropriate support.

If you have questions or worries please don't hesitate to discuss them with the medical team or the Hepatology Nurse Specialist. There are several patients that have had successful liver transplants that are willing to come and share their experiences with you. Please don't hesitate to ask for this to be organised for you. Your family are also encouraged to be part of this process.

What happens next?

Once your tests are completed, the results and information gathered will be discussed with the Liver Transplant team at Kings College Hospital. If together we feel you are a suitable candidate for liver transplant will be invited to attend the Liver Unit at Kings College Hospital to allow the team to meet you and to allow you to familiarise yourself with where you need to go for your transplant.

At the end of this, a meeting is held to determine whether you are a suitable candidate for liver transplant and then be put on the transplant waiting list. You will also receive education from the Liver Transplant coordinators about the transplant process.

If transplantation is not possible for medical or psychological reasons your local Hepatology team will follow you up.

Waiting for a Transplant

The waiting period varies depending on the type of transplant you require, your blood type, how poor your liver function is, and your weight. You should ask the transplant team to estimate your approximate waiting time.

During the waiting period, the Transplant Centre will work with you closely to assist you in remaining as healthy as possible. Your local Hepatology team, who will liaise with the specialist transplant team when necessary, will follow you up.

Keeping Healthy & Stress Management

Waiting for a transplant can trigger many feelings and be a time of stress and anxiety. It is important to talk with someone and get the support you need. There are some organisations that provide support groups such as the British Liver Trust <http://www.britishlivertrust.org.uk>, or locally Friends Of Liver Life Line www.friendsofliverlifeline.co.uk
Tel: 01752 934942.

Do ask your local Hepatology Nurse Specialist about this as they may have more information about local groups and will be able to provide support and answer your questions.

It is important that you take care of yourself and eat well. Being fit before your transplant will help with the recovery process after surgery.

Patient Participation Group (PPG)

The PPG is a group of patients, relatives and clinicians that meet quarterly to help drive forward Hepatology service developments and research.

The group is actively trying to expand in numbers, to raise the awareness and profile of liver disease, offer self-care management advice, whilst looking to raising the profile and research of specific diagnosis.

However, most importantly we want to ensure we do not turn this great opportunity into a tick box exercise, but somewhere where as equals, we can help with future projects and developments that will help us to achieve the service aspirations, to continue providing the highest standard of safe and good quality care to our patients.

Where is the Transplant Unit?

Kings College Hospital Denmark Hill, London SE5 9RM

www.kingsch.nhs.uk/livertransplant/

Jargon Busters:

When you attend your hospital appointment, the medical teams may use certain words or phrases that you don't know. Here are some familiar "Liver" terms that may be useful:

Albumin

This is a protein that is made by the liver. When the albumin level is low this shows us that there is probably some liver damage.

ALT (Alanine Aminotransferase)

This is one of the liver blood tests that we do. ALT is an enzyme (see below) that is released by the liver when there is damage

Anaemia

This is when you don't have enough red blood cells (which contain haemoglobin) in your blood. Very often you will feel worn out, tired, maybe short of breath when you exert yourself and you may look pale.

Bile duct

This is a tube that connects the liver to the intestines. The bile (see above) which is made by the liver flows through the bile duct.

Bilirubin

This is a pigment that is one of the end products of red blood cell breakdown or recycling. This happens in the liver cells and is released in the bile. If your liver is damaged bilirubin cannot be broken down so efficiently and it builds up in your blood and causes you to go yellow (jaundice).

Cirrhosis

Cirrhosis is a result of long-term continuous liver damage. When inflammation of the liver is continuous and severe, scar tissue (called fibrosis) occurs; and the liver becomes harder than normal. Cirrhosis develops when the liver is badly scarred. Once cirrhosis has developed it is irreversible and permanent. This can result in the liver being less able to perform its many functions.

Clotting Factors

The liver makes certain chemicals that are important and necessary to stop you bleeding. These chemicals are called 'clotting factors'.

Diuretics

These are drugs that help make you pass urine. The idea is to get rid of excess fluid in the cells throughout your body, particularly if you have developed ascites.

ERCP

This stands for **Endoscopic Retrograde Cholangio-Pancreatography**. ERCP is a procedure that enables the doctor to take detailed X-rays of the bile duct and /or pancreas.

Your throat will be numbed with a special spray. A fine tube will be placed in one nostril to give you a little oxygen to breathe during the test. You will be given an injection to make you sleepy; once you are sleepy an endoscope (a long thin flexible tube with a bright light at the end of it) will be passed

through your mouth down into your stomach and the upper part of your intestine.

X-ray dye will be injected down the endoscope so that the pancreas and bile ducts may be seen on x-ray. The Doctor may perform procedures to help relieve any blockages of the bile ducts, which may relieve your jaundice. Once the test is complete the endoscope is removed. The dye passes out of your body harmlessly.

Enzyme

These are types of proteins found within the cells of the body, which help speed up chemical reactions in the body.

Hepatitis

This literally means 'inflammation of the liver'.

Jaundice

This is when your skin and whites of the eye are yellow and is caused by a build-up of bilirubin (see above) in the body. This can cause the skin to be itchy (Pruritus).

LFTs

LFT stands for Liver Function Tests. There are various blood tests that can be looked at to see how the liver is working, and different tests will tell your doctors different things. The blood tests measure proteins and enzymes that may be raised or lowered depending on whether the liver is working properly or damaged in some way. The doctor or nurse will be able to give you the results of the LFTs and help you understand what they mean.

Useful contact numbers:

Katie Ramos Clinical Nurse Specialist in Liver Transplantation
(01752) 431320

Your notes:

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This leaflet is available in large print and other formats and languages.

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