Liver Resection

This booklet contains information about your operation.

Please remember this booklet is not a substitute for asking questions of your doctor and specialist healthcare team. You are always welcome to ask questions, and we would encourage you to do so.

Introduction

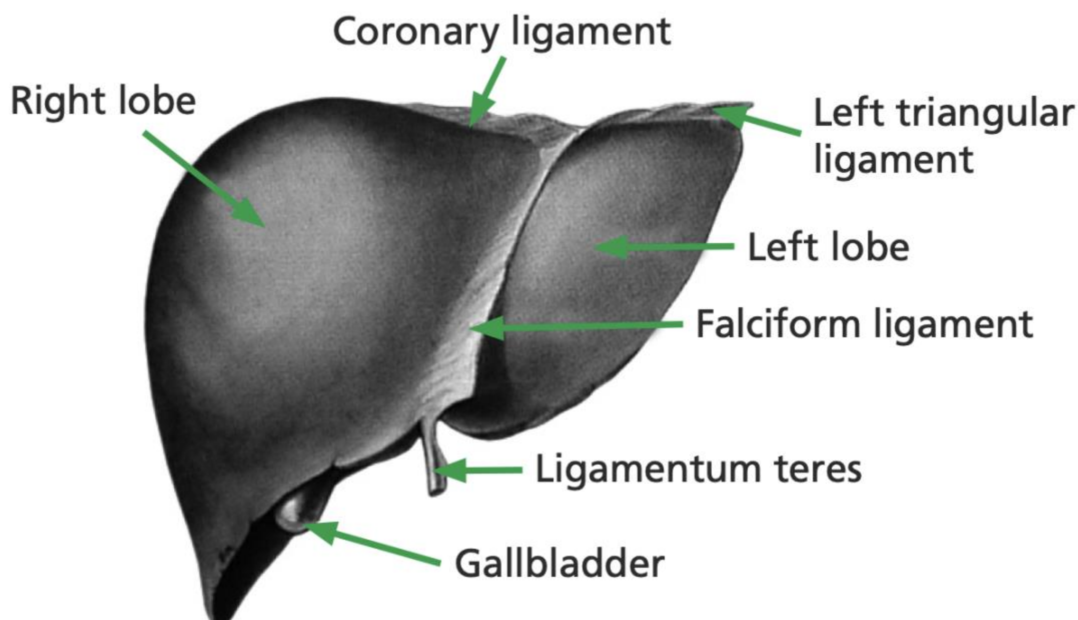
Your specialist has recommended that you have an operation called a liver resection.
The reason for this operation is likely to be because your specialist believes there is a cancer that can be removed from part of your liver.

We know that removing a cancer through an operation is the only way in which this cancer can be cured. Treatment with chemotherapy is not an alternative that offers a cure but may be helpful in slowing down and sometimes shrinking your cancer.

Information about your cancer will be given to you in a separate booklet. The purpose of this booklet is to give you information about what to expect when you have a liver resection.

The liver

Your liver is a large organ found on the right-hand side of your body, under your rib cage.
It has many vital functions, but you can live with only a part of your liver working. When part of the liver is removed the remaining liver will re-grow over the following weeks. Although the shape will be different, it will not make any difference.



The liver has left and right sides, also known as lobes.

The part of your liver that gets removed or resected will depend on where the cancer is. For example, if your cancer is on the right side of the liver then you will have a right-sided liver resection. This is also known as a **right hemi hepatectomy**.

A cancer on the left side would require a left-sided liver resection or **left hemi hepatectomy**. Your specialist believes that your cancer can be removed by resecting part of your liver. This decision is reached by assessing your health and fitness and by carefully reviewing your scans with the radiologists (X-ray doctors) and other members of the liver team.

If the portion of liver needed to be removed is too big, it may risk not leaving enough liver behind to fulfil the body's needs - this can result in liver failure. To help reduce this risk some patients will be offered a procedure called portal vein embolization (PVE). The aim of this procedure is to increase the size of the liver that will be left behind. It is carried out in the Radiology Department and is usually done 4 to 5

weeks before a liver resection. PVE involves blocking the blood supply to the part of the liver that is to be removed and redirecting it to the healthy part of the liver which is to remain after the liver resection. The aim is to shrink the part of the liver affected with cancer whilst allowing the remaining healthy liver to grow bigger making future surgery safer. A CT scan will be arranged about 4 to 6 weeks after the procedure to assess the result.

Potential complications

A liver resection is a major operation and is only performed in a specialist centre like the Liver Unit. Even in specialist centres, this operation has a risk of complications. The potential complications and the percentage of patients who are affected are listed below:

- Chest infection approximately 10%Wound infection approximately 5%
- Bleeding and a return to theatre for an operation approximately 1%
- Bile leak from the cut surface of the liver approximately 10%
- Liver failure (remaining liver cannot cope) 1%

Some people experience jaundice, (yellowing of their skin and whites of their eyes) because of the liver working harder and having to cope after some of it has been removed. Most liver resections are carried out by open surgery. In these cases, the shape of the cut used for this operation is horizontal or follows the natural shape and curve below your rib cage.

It may be possible to have your liver resection by keyhole or **laparoscopic surgery.** This technique allows removal of a part of the liver using small incisions to insert a camera and instruments. The resected liver will usually be removed via an incision in the lower abdomen, which causes less pain than open surgery. Your consultant will advise you if keyhole (laparoscopic) surgery is possible for your condition.

After open liver resection, you may experience some numbness around the scar site. People who have experienced this numbness do not usually report that it makes any difference to their lives. Unfortunately, a small proportion (about 3%) of patients will die as a result of their operation. These are very general percentages and can change depending on the reason for your liver resection. More specific percentages will be found in the information booklet related to your cancer.

Enhanced Recovery After Surgery (ERAS) pathway

When you are admitted to hospital for your liver resection, you will be taking part in an enhanced recovery programme. The aim of this programme is to get you back to full health as quickly as possible after your surgery. ERAS is effective because we:

- Give you good pain relief. This will allow you to get out of bed and walk around, preventing you from getting clots in your legs and muscle wasting
- Teach you how to breathe more effectively which reduces the chances of developing a chest infection
- Offer, whenever possible, keyhole surgery so that you have smaller wounds. This should be less painful than an open wound, and will allow you to mobilise and deep breathe more easily
- Encourage you to eat and drink as soon as possible, so that you have more energy and your bowels recover from the operation
- Encourage you to mobilise as soon as you can, by sitting out of bed and taking small walks throughout the day

Before you come into hospital

You will be involved in planning your care and recovery from the time that we see you in clinic. This is an opportunity for you to tell us all about your individual needs and circumstances at home.

It is important that you tell us as early as possible if you have any concerns about whether you will be able to manage your daily activities when you are discharged. You should also let us know if any of your circumstance change during your admission.

We have a team of healthcare professionals who can help to organise whatever support you might need. These include the physiotherapy team, occupational therapists, social workers, and the discharge assessment team.

At the pre-admission/pre-screening clinic, you will be seen by an anaesthetist, a doctor and a team of nurses to see if you are fit enough for an operation. You will have a trace of your heart (ECG), blood tests and a physical examination. Some people require a chest X-ray.

You will also be given instructions about when to stop eating, what extra high-calorie drinks to have and when, and what to do on the day of admission to hospital.

If necessary, the nurses in the pre-admission clinic will give you information about bowel prep if you need to do this before your operation.

Day before your operation

You will usually be admitted to hospital on the afternoon or evening before your operation. You can eat normal food until six hours before your operation. You can consume clear fluids up to two hours before. This excludes anything where you cannot read newspaper print through the bottle (with the liquid inside). After this time, you will be asked to stop eating and drinking. The ward nursing staff will provide you with some carbohydrate drinks to take at midnight and 06:00 on the day of surgery. These will help with your recovery.

Day of your operation

After your operation, you will be transferred to the High Dependency Unit (Critical Care Area A, Level 2). You will have several drips and tubes. They are all temporary and will be removed over the next few days. This will include a catheter into your bladder to allow you to pass urine and usually a drain into your abdomen (tummy).

Pain medication will be given either through an epidural, which gives you continuous pain relief into your back, or a pump which is attached to a drip in your arm that you will need to press. This is called patient-controlled analgesia or PCA. You will also be given tablets for pain and sickness when you are able to drink.

If you are thirsty, you can have a drink and even have some food later in the day if you're feeling really well.

We would also encourage you to sit out of bed if you can as well as deep breathe to clear your lungs. Some patients can manage a short walk with help too.

The first post-op day

The nurses looking after you will encourage you to sit out of bed, gently mobilise and eat and drink.

The aim is for you to take at least three walks with the help of the nurses and physiotherapists. This will be tiring and you can rest in between. This may also make you feel sore, but you will have an epidural or PCA for any pain you may have. In addition, you will be asked to take regular oral analgesia alongside your epidural or PCA.

The physiotherapists will also give you some gentle breathing exercises to do, which should be repeated each hour. You should also point your feet up and down and circle your ankles in bed to reduce the risk of clots in your legs.

We will encourage you to eat and drink as this helps you to recover more quickly and gives you energy to move around. You will be offered a light diet as you may not feel like having a big meal. High-protein drinks will be available if you don't want normal food but can also be taken as 'extra' calories.

The second post-op day

Your epidural will be removed today if your operation was done by keyhole surgery. You may have some pain, but it will become easier. You will still need to take regular painkillers so that you can walk around the ward, shower and sit up for your meals.

Any remaining tubes or drips may be removed, and you will be encouraged with all the above activities.

Day three onwards

If you still have your epidural, this may be removed today or tomorrow, along with any other tubes or drains that you may still have.

We will encourage you to increase your physical activity by walking around. This will help your bowels to recover and reduce the bloating of your tummy. You will also be eating and drinking better and your confidence will increase.

You will be given painkilling tablets once your epidural has been stopped. You may still feel sore because of the operation, so you need to take regular painkillers. These will continue when you go home.

Complications following surgery are all reduced as a result of increasing your activity levels as well as resulting in a shorter hospital stay.

Going home

You will be seen by the surgical team on a daily basis whilst in hospital and they will allow you to go home if:

- You feel confident about managing at home
- You are eating and drinking as well as carrying out normal activities like getting dressed
- You do not have a temperature or signs of a wound/chest infection
- You are walking around the ward comfortably
- You are passing urine without difficulty

Most patients go home within five to seven days after this operation. Going home can be a very emotional time. You may be looking forward to it and dreading it in equal measure. These feelings are normal. You may be asked to visit your practice nurse at your GP surgery to have your wound dressings changed and your clips or stitches taken out. If your mobility is limited, you may be referred to the local District Nursing Team who will visit you in your home.

It can take up to three months before you regain full fitness after a major liver resection. You are likely to feel more tired than before the operation and have less energy. You may also feel frustrated that you are not able to carry out the activities you could previously. To help with your recovery, it is important to listen to your body. Planning a rest period during the day is helpful.

Although rest is important, mobilising is also a vital aspect of the recovery process. Gentle exercise, once your wound is healed, will help you to regain some of your previous level of independence and help avoid complications associated with surgery such as deep vein thrombosis (DVT).

Initially, you should avoid strenuous tasks such as lifting, stretching or pulling but these activities can be reintroduced and increased over the coming weeks.

Being ready to drive will vary from person to person but is generally about six weeks after surgery. Before you do drive you must be able to perform an emergency stop without hesitating. We would suggest that you practice somewhere quiet such as an empty car park. Some of the painkiller medications may make you feel drowsy and if they do, we recommend you do not drive until you no longer need to take them. It is always a good idea to check with your insurance company before you return to driving as they may have their own restrictions.

Please do not feel as if you are cut off from the hospital team. You can contact us at any time. You can speak to your named nurse (Clinical Nurse Specialist) if you have any concerns or worries, by calling **0121 371 4652**. They are available Monday to Friday 09:00–16:00.

Or you can speak to a surgical registrar by calling Ward 726 on **0121 371 7303**.

Some people may benefit from input from Community Specialist Cancer Nurses. These nurses can help provide additional support for people who continue to have symptoms such as nausea, fatigue or pain, whilst at home. This can be arranged by the hospital based Clinical Nurse Specialist Team if appropriate.

Coming back to clinic

You may be given an appointment with the surgical team when you leave the ward or sometimes this is posted to your home address. If you have not received an appointment within two weeks of going home, please ring the ward on **0121 371 7303**.

The appointment may be face-to-face, or it may be a telephone consultation, and you will have an opportunity to ask questions. It may be a good idea to write these down beforehand (there are note pages at the end of this booklet).

The results of any histology will be discussed with you. Histology is when the tissue removed during the operation is looked at under a microscope. The results will usually confirm that the tumour removed was cancer.

The clinics for post-op patients are often very busy, and you may have to wait to be seen or called. Please bear with us if you do have to wait.

Further information

If you wish to receive further information about your cancer or anything related to your illness, the following contact details may be helpful.

Liver and Pancreas Clinical Nurse Specialist Team

You will probably have met with one of the CNS team before you are discharged. They are available for support and advice Monday–Friday 09:00–17:00.

The Patrick Room

This is an information service based in the Cancer Centre at the Queen Elizabeth Hospital Birmingham. The people here will be able to give you the contact details of an information service closer to where you live. Tel: **0121 371 3539**

Useful websites

www.cancerresearchuk.org
www.macmillan.org.uk
www.britishlivertrust.org.uk

Research into liver disease and liver cancer

The Birmingham Liver Unit is one of Europe's leading centres for research into liver disease. A team of clinical and laboratory scientists are working to better understand liver cirrhosis and liver cancer. In addition, we have the expertise and facilities to develop and test new treatments.

We are ideally suited to do this work in Birmingham because we have one of the largest liver transplant programmes in Europe, a large liver and pancreas surgery programme as well as a team of laboratory scientists with internationally renowned expertise in liver disease, hepatitis viruses and cancer. Our laboratories are supported by grants from various bodies including the Medical Research Council, Wellcome Trust, Cancer Research UK, the British Liver Trust and by kind donations to the Birmingham Liver Unit's Liver Foundation Trust.

Sometimes small sections of tissue that are surplus to diagnosis requirements are used for research. The doctors will ask for your permission to do this. Research may involve taking cells from your tissue sample and growing them for short periods to allow experiments on them in the laboratory. Some of the cells or tissue may be frozen and stored for use in future experiments. When the research is completed, the samples will be disposed of in an appropriate manner.

For more information about our research please visit:

www.birmingham.ac.uk/liver
www.uhb.nhs.uk/liver-surgery-research.htm

Liver Services

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Ward 726: 0121 371 7303 **CNS team:** 0121 371 4652

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