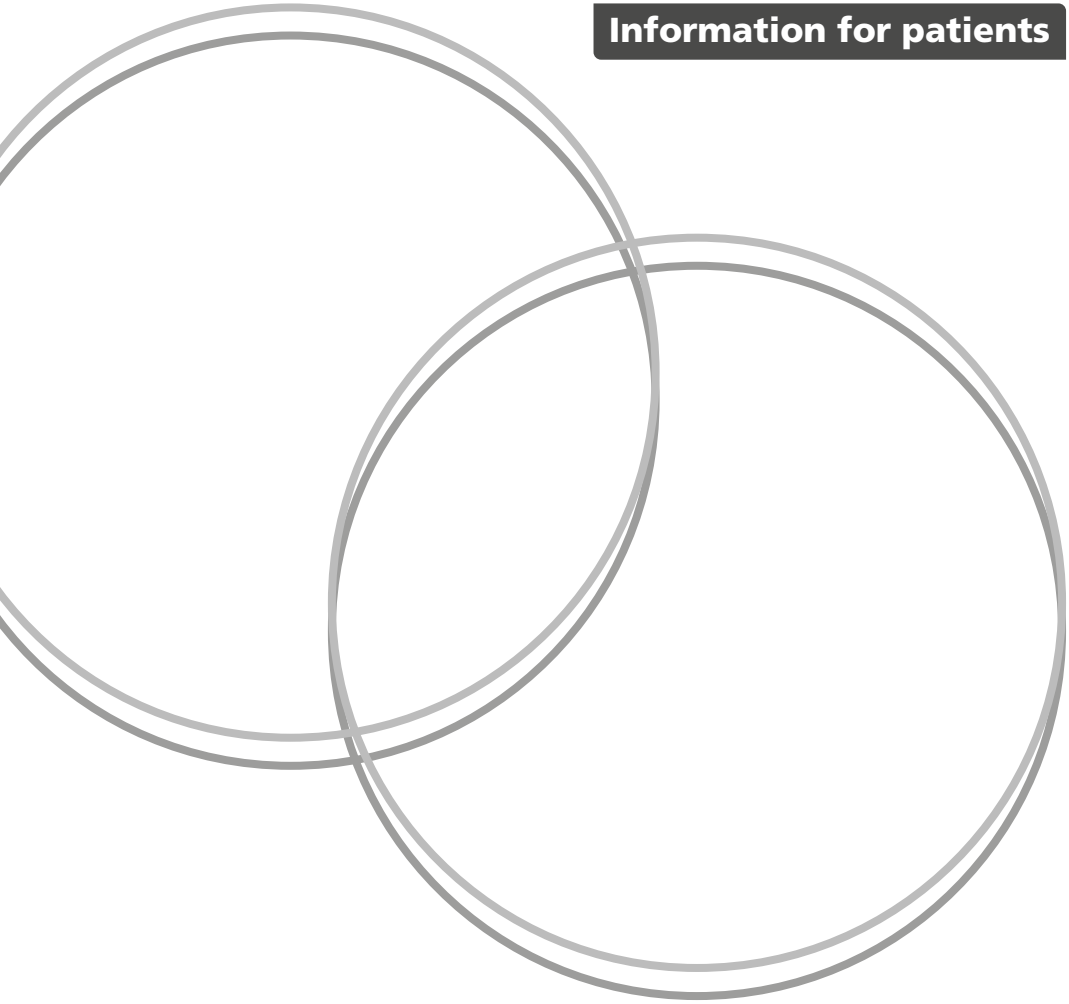
NHS
Oxford University Hospitals
NHS Foundation Trust

Enhanced Recovery After Surgery (ERAS)

Open and Minimally invasive Liver surgery

Information for patients



What is Enhanced Recovery?

Your recovery will be supported by our Enhanced Recovery programme after your liver operation.

Enhanced Recovery is a way of improving the experience and well-being of patients who need major operation. It is an evidence-based approach aimed to help you recover quickly and get you home sooner by actively involving you in your recovery.

There are four main stages:

- planning and preparation before admission (including improving your nutrition and physical fitness before operation)
- reducing the physical stress of the operation
- a structured approach to the pre-operative (before operation), intra-operative (during operation) and post-operative (after operation) management, including pain relief and early nutrition
- early mobilisation (getting you moving as soon as possible).

The Enhanced Recovery programme is a guideline for all the professionals involved in looking after you. The programme may not be suitable for everyone. If this is the case for you, the team looking after you will make changes so that the care you receive is not only of the highest quality but is also designed around your specific needs.

Nutritional support before your operation

You may be given some carbohydrate drinks by your pre-operative assessment nurse. They contain carbohydrates and minerals and are designed for people undergoing operation. Research has shown that taking carbohydrate drinks as part of an Enhanced Recovery programme, can reduce the stress of the operation on your body. They are easy to digest, clear, still drinks; gluten, lactose and fibre free, and taken **before** your operation. Please take these drinks according to the specific instructions given to you at the Pre-operative Assessment Clinic on the:

- **evening before your operation** *(take ..... bottles/sachets)* and
- **morning of your operation** *(take ..... bottles/sachets)* – to be taken up to two hours before your operation time.

You may prefer to drink these drinks chilled.

Carbohydrate drinks are not suitable for people with diabetes, suspected diabetes or slow gastric emptying.

If you take nutritional supplement drinks, **such as Fortisips or Complan Shake**, please note these are different from carbohydrate drinks and take longer to empty from your stomach. They should only be taken whilst you are still allowed to eat food before your operation.

You may have been seen and assessed by a specialist dietitian at your outpatient clinic appointment. If you have not, and you have had unintentional weight loss or are struggling to eat and drink recently, please speak to your specialist nurse or doctor. It is important that you are as well-nourished as possible before your operation.

If you have any further questions, please speak to your pre-operative assessment nurse, specialist nurse or specialist dietitian.

Keeping hydrated

Drinking water is the best way of hydrating and you can add squash for flavour or slices of fruit to make drinking water more interesting. Sparkling drinks, tea and coffee do also count, although we advise avoid drinking them in large quantities. Fruit juices are a good source of vitamins and minerals but limit them to one glass a day as they contain sugar. Milk also counts as fluid. Choose full fat (blue cap) milk if you need to gain weight or skimmed milk (red cap) if you need to manage your weight. If you find it difficult to drink enough fluids, try adding foods such as cereal with milk, soup, smoothies, milk shakes, ice cream, ice lollies and jelly which will also contribute to your daily fluid intake. Advice for an average adult is to aim to drink between 1.5 to 2 litres of fluid a day. This is equivalent to six to eight glasses of fluids.

Alcohol does not count towards your daily fluid needs.

What can I do to prepare myself for the operation?

Having an operation is a significant experience for anyone and it is normal to feel anxious about it.

Lifestyle changes

Being active

Your heart and lungs have to work harder after an operation to help the body to heal. If you are already active and do regular physical exercises, you will be used to your heart and lungs working harder. While you are waiting for your operation, try and increase your activity levels as this can hugely influence your recovery and long-term health. Even small changes can make a big difference. Patients who are able to improve their health and activity levels recover more quickly from the operation and with less complications. Regardless of your general health condition, there may be many changes you can make to decrease the risks of the operation. Try to complete an activity for 20 minutes each day that makes your breathing a little harder. Always check with your doctor first what type of exercise is most appropriate for you.

Examples of some exercises include brisk walking, swimming, cycling, gardening, and sporting activities. Activities that improve your strength and balance will also be useful for your recovery.

Further information can be found on the website for Royal college of Anaesthetists:

www.rcoa.ac.uk/patient-information/preparing-surgery-fitter-better-sooner

Stopping smoking

It is extremely important to stop smoking as soon as possible before any major surgery. The longer you are smoke-free before your surgery the better. Continuing to smoke before surgery can increase the risk of complications involving anesthesia, heart, lungs and wound healing. These complications may result in slower recovery and a longer stay in hospital.

Reducing alcohol intake

Alcohol consumption of three units or more a day (for example, a 250ml glass of wine or a pint of beer above 5.2% in alcohol strength) can lead to multiple complications after surgery and can weaken your body's immune system. Reducing or stopping alcohol can help towards sleep better, loss of any excess weight and increase in energy levels.

Avoid drinking alcohol for at least three days before surgery.

There are several places you can get support for stopping smoking and reducing alcohol intake:

Here for Health

Waiting Well programme (Stay Healthy While You Wait for Surgery)

Waiting for surgery is a good time to focus on your health and wellbeing. Making small changes now can help you feel better, lower health risks, and support your recovery after your operation. We can support you with advice, information, and practical help tailored to what matters most to you. We can help you with:

- stopping smoking
- cutting down on alcohol
- becoming more physically active
- healthy eating
- weight management
- improving your wellbeing
- better sleep

If you are aged over 18, live in Oxfordshire and would like support or a chat about staying healthy while you wait for surgery, please contact us:

Telephone: 01865 221429

Email: hereforhealth@ouh.nhs.uk

Website: www.ouh.nhs.uk/HereforHealth

GP health centres

GP health centres can also offer support with alcohol reduction. GPs may suggest different types of assessment and support options available such as local community alcohol services. You can find local support services in your area from this website:

Website: www.nhs.uk/live-well/alcohol-support

Local Pharmacy

Make an appointment at the local pharmacy. Some retail pharmacies have fully trained Stop Smoking Advisers who can also help you to quit.

National Smoking Helpline

Call the National Smoking Helpline number listed below to find out the nearest support available.

Telephone: 0300 123 1044

Website: www.nhs.uk/smokefree

Stop For Life Oxon

Offers community-based behavioural support and nicotine replacement products for patients in Oxfordshire

Telephone: 0800 122 3790

Text: STOPOXFORD to 60777

Website: www.stopforlifeoxon.org

Drinkaware

Drinkaware is an independent UK-wide alcohol education charity that offers a variety of services and information on calculation of units & calories in alcohol, alcohol intake self-assessment as well as tools and services available to support you reduce your alcohol intake.

Telephone: 02077 669 900

Email: contact@drinkaware.co.uk

Website: www.drinkaware.co.uk

Personal care

Mouth care

Research suggests that a build-up of micro-organisms in your mouth can increase the risk of infection in your lungs following major operation. Practicing good mouth care can reduce this build-up and help towards your recovery after operation.

Before you come into hospital, we recommend that you:

- brush your teeth or dentures twice a day using a fluoride-based toothpaste
- rinse your mouth with an alcohol-free, antiseptic mouthwash 30 minutes after brushing
- visit your dentist or dental hygienist as part of your routine check-up, to manage any existing dental health problems.

Bring your toothpaste, toothbrush and mouthwash with you when you come into hospital, to continue with your mouth care after operation and after your discharge from hospital, as part of your recovery.

Should I shower before my operation?

We advise that you have a shower and wash your hair the evening before or the morning of your operation. This helps towards reducing the risk of developing an infection.

On the day of your operation

You will come into hospital as a Theatre Direct Admission (TDA) and will be seen by an anaesthetist and the surgeon. You may also have some tests, such as an ECG, if it was not done during your preoperative assessment.

What happens after the operation?

Below is an example of what to expect after your operation.

Day of operation

You may have the following tubes attached to you after the operation:

- an oxygen mask or oxygen through small plastic tubes in your nose
- an intravenous drip of fluid in a vein in your arm or through a small tube in your neck to help hydrate you until you are eating and drinking
- a urinary catheter (hollow tube) in your bladder to collect and measure your urine
- a wound drain into the side your tummy to allow excess fluid to drain away from the wound area
- a small tube to give continuous local numbing pain relief medication through a pump into the wound (wound infusion).

Your initial recovery will take place in either the Recovery Unit or the Churchill Overnight Recovery Unit (CORU) depending on the type of operation (open or keyhole) and your recovery needs. You will be helped to sit up in bed if you are able to and can have something to eat and drink.

Post-operative day 1

You will be encouraged to sit out in the chair, walk the length of the ward and have something to eat and drink.

Post-operative day 2 onwards

You will be encouraged to sit out in the chair for longer periods, walk increasing lengths at regular intervals and eat and drink normally as you are able. We will look to remove the tubes and attachments from your operation if it is safe to do so.

Once most of your tubes and drain have been removed, you will be encouraged to dress in your usual clothes.

During your stay in hospital

You will be given a patient diary to use after your operation, which explains goals for you to achieve during your hospital stay and for leaving hospital. Whilst we hope you will complete this, it will not affect your care if you choose not to.

Early mobilisation

Getting up and moving after an operation is important to recovery. This means getting out of bed the day after your operation and walking increasing distances on the ward every day until you are discharged home. Early mobilisation plan involves sitting out of bed for increasing lengths of time and walking increasing distances. This is one of the most important parts of the Enhanced Recovery programme. It will help prevent or reduce complications such as chest infections (e.g: pneumonia) and blood clots (e.g. deep vein thrombosis or pulmonary embolism). It will also get your gut working which will help to stop you from feeling sick. This means you will be able to eat and drink sooner, giving your body energy to recover.

Details of your early mobilisation goals are written in your patient diary. Your ward team also will give you the 'Physiotherapy advice after abdominal operation' leaflet to help with your recovery goals. We will help you to meet the goals in your personalised mobility plan if you have problems walking. If you have prob-lems walking, we will develop a personalised, realistic mobility plan with you during your recovery.

Rest breaks

Your energy levels can fluctuate after surgery and you could feel tired more easily than normal. To manage any tiredness it can be helpful to plan rest breaks or a short nap during the day. We advice planning your nap for the middle of your day to avoid disruption to your sleep routine.

Sleep

Sleep plays an important role in your body healing, recovering after surgery and in supporting your emotional wellbeing. It is not always easy adjusting to sleeping in a new environment.

The following tips could help you to sleep better whilst in hospital:

1. Bringing in an eye mask and ear plug to use to help reduce noise and light.

2. Avoid looking at phone screen for an hour before sleep. The blue light emitted from phone screens can affect your natural sleep cycle and make you feel more awake. Opting for decaffeinated drinks in the evening. Caffeine can keep some people awake.

3. Letting your nurse know if you are hot, cold, worried, uncomfortable or in pain at any point.

If the above tips do not help with your sleep, do speak with your ward team to discuss alternative solutions.

Pain management

You will have a pain management plan discussed with you prior to surgery. The pain management nurses will visit you regularly after your operation to review your pain management until you are stable on oral pain killers.

Eating and drinking after operation

You can eat and drink straight away after your operation unless advised differently by your surgical team. We recommend that you start with small portions of foods that are easy to digest (such as cornflakes, white bread or toast, eggs, soup, chicken, mashed potato, cheese, puddings) for the first day of your operation and build up to a normal diet from the second day of operation onwards as tolerated.

Preventing blood clots after operation

You will be started on blood thinning injections whilst you are in hospital to reduce the risk of you getting blood clots in your legs after your operation. You may need to continue with once daily injections, for 28 days in total after your operation, which you will need to give yourself until the course has finished. You will be taught how to inject yourself and will have the chance to practice before you go home.

If you are already on blood thinning medication before operation your surgical team will plan for resuming your medications. If you have any further questions, please discuss these with your specialist team.

Leaving hospital

How long do I stay in the hospital after the operation?

You are likely to be in hospital for 3 to 4 days if you have a minimally invasive (keyhole) operation, and 5 to 6 days if you have an open surgery.

The Enhanced Recovery After Surgery (ERAS) programme sets out goals and tar-gets to achieve at set days after your operation. Your discharge from hospital is also based on you reaching set goals.

These goals include:

- staff assessing you to be medically fit for discharge
- your pain to be controlled effectively with pain killers
- eating and drinking, with no nausea of vomiting
- to be independently mobile (or back to your level of independence); able to get yourself out of bed and on/off the toilet
- passing wind or have opened your bowels
- competent with blood thinning medication self-administration (if applicable) or have an alternative option in place.

You will need to make your own arrangements for discharge including transport and ensuring that you have adequate support at home. Please ensure you have a supply of paracetamol ready for your discharge from hospital. These can be purchased cheaply from your local pharmacy or supermarket.

Preparing for your recovery at home

Before you come to the hospital for your operation, try to organise and prepare for when you come home after the operation. Plan and arrange with your next of kin, relatives and/or friends to help with heavy work (such as changing bed linens, laundry, gardening, shopping etc) and to look after children and other dependents as needed. If you have a freezer, stock it with foods that are easy to prepare and cook.

If you have any questions or concerns about leaving hospital or you are concerned that you might struggle to manage at home, please speak with the nurses on the ward.

Recovery after discharge

You may be a little worried about returning home when you have been discharged from hospital after an operation. However, all the professionals involved in looking after you will have decided that you are well enough to leave hospital. We have answered some commonly asked questions over the next few pages to help aid your recovery. However, this is a general guide, for questions related to your specific needs, please speak to a member of your clinical team.

When can I start exercising again?

Please request the 'Physiotherapy advice after abdominal surgery' leaflet from the ward which helps outline guidance on recovery and exercise after your surgery. We encourage light walking after your surgery and building up your activities goals each week as advised in the physiotherapy leaflet. You can resume more strenuous activities such as jogging, aerobic exercise and heavy lifting if you are feeling well enough to do so six weeks after your surgery.

How do I manage my pain after discharge?

You will be given pain management medications to take home when you are discharged from hospital. You may need to continue the pain management medications when you return home and should be reduced and gradually stopped as your pain settles. Most patients may not need stronger pain medications after a week.

If you have ongoing pain which does not get better, please contact your specialist nurses.

Do I follow a special diet after the operation?

Eating a balanced and varied diet at regular intervals will ensure you get the right nutrients to help you heal and recover after operation. Including foods rich in protein (e.g: eggs, meat, fish, pulses such as beans, lentils, chickpeas, cheese, milk and milk puddings) in your meals can help towards wound healing. Food rich in fibre will help to avoid constipation (e.g: fresh fruit, vegetables, beans and pulses, porridge, wholemeal bread etc). If your appetite is reduced or your portion sizes are smaller than normal try having more small sized meals, snacks or nourishing drinks often during the day (little and often). If you have a stoma, please follow the diet most suitable for your stoma.

What do I do if I become constipated?

You will usually have started passing wind before discharge from the hospital but may not have opened your bowels. Stronger painkillers can also make you more likely to be constipated, and you may require laxatives whilst in hospital. It is important that you move around regularly and continue gentle activities such as walking when you are home to help keep your gut working.

How much should I drink?

Aim to drink 1.5 to 2 litres of a variety of fluids each day to help keep you well hydrated and prevent constipation. Fluids can include water, flavoured water or diluted squash, tea, herbal tea, coffee, malted drinks, hot chocolate and milk. Foods such as soup, ice-lollies, jelly, yoghurt and milk puddings contain fluid and can also help you to maintain your hydration. Taking note of the colour of your urine is a good way to check how hydrated you are. Your urine should be pale yellow to clear colour.

How long should my wound dressing(s) stay on after operation?

The wound(s) are often left uncovered to help with healing. If your wound(s) require dressing, the ward team will advise you on caring for your wound(s) and provide you with spare dressings.

Can I shower or bath with my wound(s)?

We recommend you take a shower after your operation. Having a shower in the hospital before your discharge will help you gain confidence to shower at home after discharge. The stitches in your tummy are dissolvable. You can use soap or shower gel to wash your body, but it is important that you do not rub any soap or shower gel directly onto your wounds. Rinse the soap thoroughly from your body with running water to avoid it irritating your wounds and to gently pat your wounds dry with a clean towel.

Swimming or bathing should be avoided until your wounds and scars have completely healed.

When can I drive?

You can drive when you are able to confidently perform an emergency stop and comfortable to do so. This is normally up to 6 weeks after your surgery. Please confirm the duration with your surgeon and also check with your insurance company before returning to driving.

When can I return to work?

Give yourself a couple of weeks to recover before returning to work. The amount of time required will depend on the nature of your work. If you require a Fit note for your work or your work involves lifting, please speak to your doctor before leaving hospital.

When can I have sex again?

This will depend on when both you and your partner feel comfortable, but it is safe after four to six weeks.

What else should I look out for?

You should monitor the healing of your wounds, look out for any sudden changes in your overall recovery, for any signs of infection or a new cough.

Contact your Specialist Nurse or GP if you:

- feel feverish or generally unwell
- have increased redness, throbbing pain or pus-like discharge from your wound(s)
- increasing abdominal pain, not controlled with pain management medications
- new productive cough that is not getting better.

Very occasionally following operation serious complications can develop. Please attend your nearest Emergency Department if you:

- start vomiting and are unable to keep fluids down
- have worsening shortness of breath
- develop chest pain or a painful swollen leg.

Support after discharge

If you are unsure on any aspects of your care, please do not hesitate to contact us.

For advice during office hours, please contact your specialist nurse on the telephone numbers listed on the next page. If you are unable to contact a member of the team, please contact your GP or the UGI ward.

Useful Contact numbers:

Specialist Cancer Nurses or Specialist Dietitian

(for recovery related queries)

Tel: **01865 235 130**
9.00am to 5.00pm, Monday to Friday
(or call switchboard and ask for bleep 1386/1891).

Consultant Surgeon's secretaries

(for appointment related queries)

Tel: **01865 235 668**
8.00am to 5.00pm, Monday to Friday

Oxford Upper GI Ward (Churchill Hospital)

Tel: **01865 235 061** (24 hours)

If the ward is unavailable, and your question needs an urgent response or it is outside of office hours, please contact your GP or out-of-hours GP's service (including NHS 111.They can assess you and decide what further action needs to be taken. 111 calls are free from any landline or mobile.

In an emergency or life threatening situation, call 999 or go to your nearest Emergency Department.

Information about operation for patients and their families

Oxford University Hospitals NHS Foundation Trust

Website: **www.ouh.nhs.uk**
Information about the hospital services

Patient information leaflets

Website: **www.ouh.nhs.uk/patient-guide/leaflets/**

- About Liver Resection- Surgical removal of part of the liver.
- Anaesthesia explained
- Preparation for your operation and Theatre Direct admission
- My Journey home - patient discharge leaflet

Useful Resources

Maggie's centre

Website: **www.maggiescentres.org**

Free practical, social and emotional support for cancer patients and their family and friends.

Tel: **01865 751 882** (at the Churchill Hospital)

Macmillan Cancer Support

Website: **www.macmillan.org.uk**

Cancer Research UK

Website: **www.cancerresearchuk.org/about-cancer/liver-cancer**

Research studies

Many research studies are carried out at the Oxford University Hospitals, and you may be eligible to be part of one. During your visit you may be approached about research studies. If you would like further information, please ask your healthcare professional.

Further information

If you would like an interpreter, please speak to the department where you are being seen.

Please also tell them if you would like this information in another format, such as:

- Easy Read
- large print
- braille
- audio
- electronic
- another language.

We have tried to make the information in this leaflet meet your needs. If it does not meet your individual needs or situation, please speak to your healthcare team. They are happy to help.

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