

Enhanced Recovery after Lung Surgery

Your guide to a good recovery

Information for patients



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Welcome to the Leeds Teaching Hospitals Thoracic Surgery Unit.

At this point, you have seen a consultant surgeon and are now waiting for an operation to remove a part (or whole) of your lung.

This booklet is designed to guide you through your experience of lung surgery. You may think that there is a lot of information, however it is important that you read this booklet carefully. Having lung surgery requires effort and motivation on your part. It is important that you understand how and why we expect you to play an active role in preparing yourself for the operation and in the recovery period afterwards. It will also give you an insight into your stay in hospital, as knowing what to expect will help to reduce your anxiety, make your stay in hospital more pleasant and speed up your recovery. Ask your family and friends to read this booklet, as they can provide a vital source of encouragement and practical support.

Enhanced Recovery

This is a term applied to a programme of actions which aims to help you to get into the best possible condition for your operation, anaesthesia and post-operative recovery. The key person in an Enhanced Recovery programme is **YOU** - as you can achieve the biggest impact on your ability to cope with the operation and to make a good recovery.

years of age. If there are special circumstances regarding visiting, please ring the ward before visiting and speak with the nurse in charge. All children must be accompanied by a responsible adult at all times.

Telephone enquiries

We kindly ask that phone enquiries be made after 11am by a nominated family member who can then pass on information to other family members and friends. Mornings are particularly busy for the nurses and large volumes of telephone enquiries means that nurses spend less time with the patients. Please also be aware that nursing staff may not be able to give out detailed information over the telephone.

Getting fit for your surgery

Your Enhanced Recovery programme starts from the day you agree to come for lung surgery. You can put the waiting time to good use by making sure that ***you are as fit as you can be*** before your surgery. Being as fit as possible before surgery is important - it will help you to cope with the surgery and recovery afterwards.

Evidence has shown that this will help you to:

- prevent post-operative complications such as chest infection, wound infection and clots in your legs or chest;
- reduce your stay in hospital;
- return home to your normal activities sooner;
- participate more confidently in your recovery;
- feel less stressed physically and emotionally.

Smoking

You need to stop smoking. If you smoke, you will be more at risk of developing a chest infection after your surgery. You may also find that your wounds heal more slowly or become infected. We understand that this is difficult for you, however your lungs need to be at their best to better tolerate the anaesthetic, surgery and recovery. Even though your lungs may be damaged already, stopping smoking as late as two weeks before your surgery can help.

If you need assistance to stop smoking, contact your GP or ask your local pharmacist for advice on Nicotine Replacement Therapy. You may also find useful advice and support from One You Leeds. (Please find the contact details in the back of this booklet).

We are a no smoking hospital which means smoking is not allowed inside any of the hospital buildings. Smoking is only permitted within the designated shelters outside. This also applies to e-cigarettes.

Nutrition

Before your surgery it is important to be well-nourished, as the surgery will increase your body's need for energy. Try to eat a regular and a balanced diet with plenty of calories. A balanced diet should include carbohydrate, protein, fruit & vegetables, a small amount of dairy and fat.

If you are underweight, and/or are losing weight, it may make your recovery more difficult and take longer, as low energy levels can affect your ability to heal and to fight infection. Try to include high calorie snacks and nutritious drinks to keep your weight stable. You may find it better to eat small amounts more often.

If you are struggling with a poor appetite, speak to your GP about a referral to a dietician, or prescribing some nutritional supplements.

Mouthcare

You are advised to clean your teeth morning and night whilst you are waiting for your surgery. This will help to keep the levels of bacteria low in your mouth and to reduce the risk of developing a chest infection after your surgery. If you have dentures, you should use a mouthwash.

Alcohol

It is recommended that you drink no more than 14 units per week.

One unit is:



Half pint of regular beer, lager or cider



A small glass of wine



A single measure of spirits



A small glass of sherry



A single measure of aperitifs

Each of these is more than one unit:



A pint of 3.5% beer, lager or cider



A pint of 5% beer, lager or cider



A 330ml bottle or can of 4.5% alcopop or lager



A 500ml can of 4% lager or strong beer



A 500ml can of 8% lager



A medium (175ml) glass of 11% wine



A bottle 12% wine

If you have more than this you need to try to reduce the amount of alcohol you drink, as this can weaken your immune system putting you at risk of developing complications and prolonging your recovery. You should aim to avoid drinking alcohol at least 24hrs before your surgery.

Physical activity

It is important to be as active as you can before your surgery. This will exercise your lungs as well as improving your stamina, both of which will help your body to cope with the physical stress of the actual surgery and recovery period. Think about how active you are now and what you can do to make yourself fitter. For those of you who already exercise on a regular basis you just need to carry on.

For those who don't exercise regularly we recommend that you start by taking a daily walk at a pace that will make you slightly short of breath but still able to speak a sentence. Gradually increase the distance you walk each time you go out.

We recommend that you start the exercise programme at the back of this booklet which will help you to strengthen your muscles and improve your stamina.

Deep breathing exercises

As part of your exercises you have been given a device called a Spiro-ball in the Out-patients department. This is used before and after surgery to help to improve your deep breathing technique. Because it makes you breathe deeply, it improves your ability to clear sputum from your lungs. You may have been shown how to use the Spiro-ball and /or you can use the accompanying instruction book to help you.



Start straight away and practice a cycle of five breaths between five and ten times per day. This will help you to avoid developing a chest infection after your surgery. It is important to remember to take 4-5 normal breaths between each breath on the Spiroball to avoid feeling dizzy and also to gain the most benefit from the exercise.

Rest and relaxation

We understand that you may be feeling vulnerable at this time and be experiencing a variety of emotions. You may also be feeling that waiting for your operation 'feels like forever'. Try and take some time to relax, you will get more benefit if you do it regularly, as part of your daily routine. Below is a simple relaxation exercise that can be done anywhere and it only takes five minutes.

You can do it standing up, sitting in a chair that supports your back, or lying on a bed or yoga mat on the floor. Make yourself as comfortable as you can. If you can, loosen any clothes that restrict your breathing.

- If you're lying down, place your arms a little bit away from your sides, with the palms up. Let your legs be straight, or bend your knees so your feet are flat on the floor.
- If you're sitting, place your arms on the chair arms.
- Whatever position you're in, place your feet roughly hip width apart.
- Let your breath flow as deep down into your belly as is comfortable, without forcing it.
- Try breathing in through your nose and out through your mouth.

- Breathe in gently and regularly. Some people find it helpful to count steadily from one to five. You may not be able to reach five at first.
- Then, without pausing or holding your breath, let it flow out gently, counting from one to five again, if you find this helpful.
- Keep doing this for three to five minutes.

Planning for your recovery at home

You need to think about who will collect you from hospital and who will help you with your shopping, cooking and cleaning until you are well enough to do this yourself. In some cases this can be a few weeks. Discuss this with your family and friends.

If you live on your own it is advisable to plan ahead and make sure you have plenty of food in the freezer.

'Please do not take any diabetic medication on the morning of surgery however all other medication should be taken at 6am. Your relative or friend can stay with you on SDA until you go to theatre. As space is limited, please keep the number of family/ friends to a minimum.

Heparin injections

When you go home, you will need to have a daily heparin injection for a period of time.

This will help to prevent you developing a blood clot in your legs (deep vein thrombosis (DVT)) or lung (pulmonary embolus (PE)). Your nurse will teach you how to give these injections



to yourself when you are in hospital. If you cannot do this yourself, you should nominate a family member who will be available to be taught during this time.

Before you come into hospital - checklist

What you need to bring

- All your current medications in their boxes and a prescription list from your GP if you have one:
- Spiroball and information folder;
- Pre-op drinks (if being admitted the day before surgery);
- toiletries;
- dressing gown;
- two clean sets of nightwear;
- underwear;
- well-fitting slippers;
- loose fitting comfortable clothes;
- a small amount of loose change for newspaper etc;
- a pen.

Please do not bring valuables or large amounts of money into hospital.

Pre-op drinks

You will have been given six lemon flavoured 'Pre-op' drinks to take before your surgery (unless you have diabetes). These are high energy and will help to provide you with the extra energy your body needs during your surgery and to reduce the risk of infection afterwards.

Pre-op drinks are counted as water and you should take them as follows:

- Four bottles between 6pm and 12midnight the night before surgery AND
- Two bottles between 5 - 6 am on the morning of surgery.

Fasting

You can eat normally up until midnight the day before your surgery.

You can drink water up until 6am on the morning of your surgery.

Medications

Please make sure that you have enough of your regular medicines to last whilst you are recovering at home after your surgery.

You should also ensure that you have enough paracetamol and ibuprofen at home for pain relief, as you may not be given them to take home on discharge.

Have a bath or a shower

Have a bath or a shower on the morning of your surgery. This will help to keep your skin as clean as possible and reduce the risk of a wound infection after your surgery. If you are unable to have a bath or shower that morning, please have one the night before.



Your admission into hospital

The Admissions Lounge / Specialist ward

Most patients are admitted to the Same Day Admissions Lounge (SDA) on the morning of their surgery. There are some circumstances when patients are admitted directly to ward J84 the evening before their surgery. This will have been discussed with you in clinic when you saw the surgeon.

If you are being admitted to the SDA will have been asked to be there for 7am. Please take any morning medication by 6am before coming into hospital. Your relative or friend can stay with you on SDA until you go to theatre. As space is limited, please keep the number of family/friends to a minimum.

For those of you who are being admitted to Ward J84 the day before your surgery, you will have been asked to ring the ward after 3pm to check when your bed will be available. Please do not worry if the ward is unable to tell you at this time as it can sometimes take a while for the bed to become vacant. We will take your contact number and ring you back.

On occasion, your bed may be on another surgical ward for the night before your surgery. You will then return to Ward J84 after your surgery. Alternatively, we may ask you to come to Ward J84 fasting on the morning of your surgery.

Preparation for your operation

The nurses will get you ready for surgery.

This will include:

- checking your blood pressure, temperature and pulse;
- giving you pre surgery pain relief approximately 1hr before your operation;
- being seen by a surgeon and an anaesthetist - this is your opportunity to ask any questions;
- being asked to wear compression stockings, and;
- being placed in a theatre warming gown.

The **compression stockings** are worn to reduce the risk of blood clots forming (DVT). These stockings are meant to be tight so you may need help getting them on. It is important you wear these daily until you go home.

The **warming gown** helps to regulate your temperature before, during and after your surgery. The gown will be attached to a small machine that will blow warm air into it. The nursing staff will show you how to control the temperature for your comfort.

Your recovery in hospital

Post Anaesthetic Care Unit (Recovery)

You will be in the recovery area until you wake up from the anaesthetic, although you may not remember this afterwards. The staff there will monitor your blood pressure, pulse and oxygen level, and also make sure that you are as comfortable as possible until you are ready to be taken to the High Dependency Unit.

The High Dependency Unit (HDU)

You will be in the HDU on ward J84 for usually about 24hrs or until you are well enough to move to a ward bed. Occasionally we have to send patients to the Surgical HDU on Ward J81 straight from theatre when there is limited space on Ward J84.

In the HDU, you will be attached to a monitor which looks like a television screen so that we can continuously monitor your blood pressure, heart rate, oxygen levels and breath rate. Being in the HDU may make you feel anxious, however it is important to remember that this is normal for the surgery you have had.

You will also have:

Oxygen - via a facemask which covers your mouth and nose or via a small soft tube which sits just inside your nostrils. It is important to leave this on. The physiotherapist, doctor or nurse will tell you when you no longer need oxygen.

A cannula. This is a small plastic tube in the back of your hand through which we can give you fluids to make sure that you are hydrated. You may also have an arterial line which is a small flexible plastic tube inserted into the artery in your wrist by the anaesthetist when you are asleep. From this, we can continuously measure your blood pressure and take blood samples.

Pain relief - the type of pain relief you receive will depend on the surgical wound (incision) you have. This is explained in more detail on page 24.

A chest drain - This is explained in more detail on page 26.

You will be nursed upright in bed at a minimum angle of 45 degrees. This will help to both expand your lung and clear sputum after your surgery.

What to do for a good recovery

Motivation

You are the most important person in your recovery. It is essential that you:

- Take deep breaths
- Cough
- Walk/ move around
- Eat
- Drink

You will note that no one else can do the above actions for you. It is important that you do them, even when you feel you do not want to. Try to remain positive and focused - your family and friends will be able to help you with this.

Breathing and coughing exercises

Physiotherapy plays an important part in your recovery. A member of the physiotherapy team will see you on the morning after your surgery and thereafter on a daily basis as necessary.

Deep breathing exercises- These are used to help re-expand your lungs after surgery and will help you to avoid developing a chest infection. It is helpful to do these when you don't have access to doing your deep breathing exercises with your spiropall. You should start to practice these as soon as you wake up from the anaesthetic. Take a deep breath in, hold for

three seconds and breathe out. Although this exercise may feel uncomfortable initially, try to repeat it 5-10 times every hour (when awake). If you find it too painful, you must ask your nurse for a pain killer.

Spiroball - Your surgeon will request that you practice the Spiroball five times every hour. Remember to take five normal breaths in between each, so you do not feel dizzy. Initially, you will not do as well as before your surgery and this is to be expected. Find your new baseline and raise the yellow marker as you improve.

Breathing control - This is a breathing technique used to control breathlessness and is also useful for pacing yourself as your walking improves. This involves concentrating on breathing out. Stop and do 3-4 slow breaths all the way out when you feel breathless, and then breathe normally. Repeat the above cycle until you feel your breathing is under control.

Coughing to clear sputum

Sometimes people feel a bit “chesty” after surgery. It is a combination of the anaesthetic, the surgery, and not being able to move as much as you usually do. It is vital that you clear any sputum - if you have any - by coughing. This will help you to avoid developing a chest infection.

The deep breathing exercises described earlier move sputum up your chest so you don't have to cough as hard to clear it. You can also be shown a good way to support your wound by wrapping a towel around your back or tucking one under your arm.

Please note that you will not cause any damage by coughing. If you think that it is too painful to cough, you need to ask your nurse for a pain killer.

Some people find it hard to cough and, instead, prefer to 'huff'. This is a sharp, fast, forced breath out after a medium breath in - rather like the breath you would take when trying to steam up a mirror.

After doing your deep breathing exercises, get into the habit of doing a huff or a cough to make sure sputum isn't building up in your chest. It is also easier to clear sputum after you have moved (i.e. sat out in your chair or had a walk). So combine deep breathing exercises with walking, and have a cough afterwards when you sit down.

Walking and moving around

Sitting out of bed and walking around as soon as possible after your surgery has been shown to reduce your stay in hospital AND help you to avoid developing a complication such as a chest infection, a clot in your leg or lung or a pressure sore.

Sitting in your chair in a more upright position and walking regularly will help to improve your breathing and to re-expand your lung quicker. This will allow us to take your chest drain out as soon as possible. Getting up, washed, dressed and keeping active will help your bowel movements to recover faster and also give you a feeling of wellbeing.

If you have difficulty, you can ask your nurse to help you out of bed or walk with you until you are able and confident enough to walk independently. You can also ask your family and friends to walk with you. Alternatively, you can stand up and march on the spot as this will also exercise your lungs.



At first concentrate on how often you walk rather than how far, as shorter walks more frequently will exercise your lungs better without tiring you out. The distance you can walk will depend on how far you could walk before your surgery, how much lung has been removed and if you feel breathless when walking. Remember, your normal mobility level may be different to that of other patients. The physiotherapist will advise if you need oxygen to walk with initially.

The 'walk-talk test' is a good guide to help you progress your walking. It simply means that you should be able to maintain a conversation whilst walking. If you are unable to, you should stop and practice the breathing control exercises explained earlier until you get your breath back.

Try to follow the following exercise plan as you are able:

Day 1: Four walks or marching on the spot.

Day 2 onwards: A walk or marching on the spot every hour.

Build up the distance that you walk gradually. When you feel confident and comfortable, you may want to leave the ward with family and friends.

After doing any physiotherapy or exercises you may find you need a rest. Ideally this is best done by sitting in a chair rather than lying down in bed.

Arm exercises to prevent shoulder stiffness

It is also important after your surgery to exercise your arms to help prevent stiffness in your shoulders and back, and to promote good posture.

This exercise should be started on the first day after your surgery, and should be done 2-3 times daily. When your

shoulder on the operated side can move as well as the shoulder on the other side just do these exercises once a day. It is normal to feel a stretch or "pull" over the incision site when exercising your arms, but it should not be painful.

To start with, try shrugging your shoulders. Aim to lift the arm of your operated side above your head. Lift your arm as far as is comfortable and hold it for 3-4 seconds. You may need your other hand to support the raised arm initially. Continue to do these exercises in the hospital and for the first 6 weeks at home after discharge.

Ankle exercises

You should also do ankle exercises to help your circulation. Circle your ankles both ways and then point your toes up towards you and then back down briskly.

Doing this exercise ten times every hour whilst in your bed or chair will be beneficial until you are walking regularly.



Preventing blood clots

You will have daily heparin injections to reduce the risk of blood clots forming in your legs (deep vein thrombosis (DVT)) or chest (pulmonary embolus (PE)). Your nurse will teach you how to give these injections to yourself, as you will need to continue these when you go home for a period of time. If you cannot do this yourself, you can nominate a family member for your nurse to teach.

Whilst in hospital you should also wear the compression stockings.

Eating and drinking

You will be allowed to eat and drink the same day as your operation if you are not feeling sickly. It is important that you eat and drink early after your surgery so that your body gets the energy it needs to heal and repair. Try to drink at least two litres of fluid a day which will help to keep your kidneys working well after the anaesthetic. Each cup measures about 150-200mls so you need to try to drink at least the equivalent of 10 cups per day.

Try to avoid fizzy drinks which may make you feel sick. You will also be given nutritional supplements to have after each meal, which will help to give you extra calories while you are in hospital.

Sometimes the anaesthetic and the painkillers can make you feel sick and affect your appetite. This should not stop you from attempting to eat and drink. If you are feeling sickly, ask your doctor or nurse for medication to help settle this and allow you to eat better. If your appetite is low, try to choose foods from the menu that are high in energy, such as carbohydrates and protein. You can also ask your family to bring in snacks for you to eat between meals. Aim to eat regularly throughout the day as this will provide your body with a steady flow of energy to help heal your wounds.

Mouth care

You will be given a mouthwash to take twice per day, after lunch and evening meal. Also, you should continue to clean your teeth morning and night.

Pain control

It is important that you are as comfortable as possible following your surgery. You must be able to deep breathe, cough, move around in bed, walk around the ward and eat your meals without too much discomfort. As soon as you feel unable to do this, ask your nurse for a pain killer.

The nurse looking after you will assess your pain regularly. You will be asked to score the severity of your pain using the pain score below.

0 No pain	2 Moderate pain
1 Mild pain	3 Severe pain

Methods of pain control

The following are the different ways we use to give you painkillers after your surgery. This is decided according to the surgical incision (wound) needed for your surgery, which will be either:

- “Keyhole” (VATS = Video Assisted Thorocoscopy”), or;
- “Open” (Thorocotomy)

Paravertebral - this is a thin tube inserted into your back to the side of your spine while you are asleep during your operation. An infusion of local anaesthetic is given through it to numb the nerves on that side of your chest where your wounds are. You will have this for the first two days after your operation during which time the nurses will assess how effective it is regularly by tapping a sharp pin on your chest and asking you to say if it feels sharp or dull. As an alternative to a paravertebral, the surgeon or anaesthetist may inject local anaesthetic into the nerves along your ribs whilst you are asleep under the anaesthetic.

Patient Controlled Analgesia (PCA) - This is a system you can control yourself. You will be given a handset with a green light and a button on it.

When you press the button you will receive a small dose of morphine into your blood stream through a drip in your hand. There is a lockout period of 5 minutes during which the pump will not give you any further morphine.



This safety feature allows you to use your pain relief without worrying that you may take too much. You will have this system until the morning after your operation.

Intravenous - Depending on the type of wound you have, you may be given pain relief medication via a drip in your hand.

Tablets - You will be given a combination of regular painkilling tablets which work well together and work in different ways to relieve the pain you may feel from your wound or from irritation of the nerve pathways along your ribs. If you feel that the regular painkillers are not controlling your pain, you can ask the nurse for an additional fast acting painkiller.

Please remember, the best way to manage your pain is for you to tell the nurse as soon as you feel the pain start to get worse. Do not wait until it feels severe as it will take longer for you to feel comfortable again.

Constipation

Constipation can become a problem due to the painkillers and reduced mobility. To prevent constipation, walk regularly,

drink plenty of fluids, eat foods high in fibre (eg; Weetabix, wholemeal bread) and take the laxatives you are prescribed.

Chest drains

A chest drain is a flexible plastic tube placed by the surgeon into the lining of your lung after the surgery whilst you are still asleep. This is to drain away fluid or blood and remove air from the lining of your lung to allow it to re-expand after your surgery. It is important that you help this process by doing the deep breathing exercises, using your spirometry ball, coughing and clearing sputum and walking around. These activities will exercise your lung and help you to avoid developing a chest infection. The chest drain is portable but you will need to connect it to the charger when you are sat by your bed. When the doctors are happy that your lung has healed enough the drain can be removed. This usually happens 2 -3 days after surgery.

You will have a stitch where the drain was which will need to be removed seven days after the chest drain was removed. You will need to make an appointment with your practice nurse at your GP practice to remove the stitch. If you are unable to get to your GP surgery please tell the nursing staff and they will organise for a district nurse to come to your home to remove the stitch.

Sometimes the lungs can take a little longer to heal. If this happens we use a special chest drain system called a Portex Bag. It is easy to carry and you can walk around with it. This allows you to be discharged home with the drain still in. Your nurse will organise for a district nurse to come and visit you daily at home to drain the bag and change the dressing

around your drain site. You will also come back to Ward J84 to the Nurse Led Clinic on a weekly basis for review. Once the surgical team are happy that your drain can come out it will be removed.

Wounds

The dressings on your wounds will be removed the first day after your surgery. If your wound is leaking it will be re-dressed, otherwise it will be left open to air. Your wounds will be checked and the dressing round the chest drain replaced on a daily basis.

Planning for home



How long you stay in hospital will depend on what type of surgery you have had. You are generally in hospital between 3-7 days if there are no complications. After your operation, start to plan ahead for your discharge by speaking to family and friends about who may be able to collect you. When you are ready for discharge, you should be able to wash, dress, use the stairs and prepare yourself a meal. If you feel that you will need help at home and have not already spoken to your GP, please speak to your nurse as soon as possible, stating that help you think you may need. You will be assessed every day on the ward round so the doctors and nurses may decide that you are well enough to go home on the same day. You should not expect to feel as well on discharge as you did before your surgery, as your recovery has only started and will continue over the next weeks and months at home.

You will be given a discharge information booklet before you go home. You and your family should read this before you go so the staff can answer any questions you may have.

Medication

Before your discharge, you will receive a one week supply of pain killers to take home and your regular medications will be returned to you. The nurse will explain what the medication is for and when to take it. It is important that you take your pain killers as advised so that you can continue to be active at home. You will be given a copy of your discharge letter with a list of your medication and information about your surgery and hospital stay.

The discharge letter will also be faxed or e-mailed to your GP. If you feel that you will need further painkillers after the first week, you should make an appointment with your GP, allowing enough time before they run out.

Out patient appointment

Most patients who have had lung surgery will be seen in the Outpatient Department in approximately 4-6 weeks. Your surgeon may also refer you back to your referring doctor for follow up.

The Nurse Led Clinic

Some patients need to return to the Nurse Led Clinic for assessment of wounds or drainage systems. This is held on a Wednesday on Ward J84. Should you need to attend this clinic it will be arranged by the nursing staff and discussed with you before your discharge. Please let the nurse know if you need transport to come to the clinic before you go home.

If you cannot attend your nurse led clinic appointment please ring 0113 206 89184 as soon as possible. A new appointment will be arranged for you.

District nurse

Your ward nurse will book a district nurse if you are discharged with your chest drain on a portex bag; if your wound needs redressing or to remove drain sutures. This will be discussed with you prior to discharge. Unfortunately we cannot provide you with a time when your district nurse will attend. If for any reason your district nurse does not attend on the organised day please contact your GP practice for advice.

Your recovery at home

Motivation

It is important that you continue to play an active role in your recovery at home.

Once it has been agreed that you are medically fit to go home, staying in hospital is not the best or the right place for you. Research shows that typically the quicker you get home, the quicker you tend to get better. How quickly you recover will depend on YOU and may also be influenced by a number of factors such as: your fitness before your surgery; the type of surgery you have had; your age and your motivation. It is normal that you will not feel as well on your discharge as you did before you came into hospital. This is because your recovery has just started and will continue over the next weeks or months at home.

Looking after your wounds

Most wounds have dissolvable stitches which do not need to be removed. If your wound has clips in, you need to make a practice nurse appointment at your GP practice to have them removed 10 days after your operation. If you have a dressing on your chest drain site wound, you can remove this the day after you go home. If the wound is clean and dry, you do not need to replace the dressing.

You will have 1 or 2 drain stitches from where your drain was removed. You need to make a practice nurse appointment for removal of the stitches for seven days after the drain was removed.

You need to check your wound every day in the mirror if you can, or ask someone to look at it for you.

Please avoid touching your wound unless necessary and ensure that your hands are clean if you do. A scab acts as a natural barrier while your wound is healing, and it will fall off in time, so please do not pick it.

Your wound will go through a natural healing process which may involve:

- Swelling or inflammation - this will reduce over a few weeks.
- Sensations of numbness, tingling and itching.
- A feeling of pulling or tightness as the wound heals.

If you notice any of the following, you must see your GP in the first instance, who may contact the ward with any concerns:

- The amount of pain in your wound increases
- The wound becomes redder than before
- The wound becomes warm to the touch
- The wound becomes more swollen
- The wound has a discharge coming from it
- Any part of the wound appears to be coming apart.

Having a bath or a shower using unscented soap will ensure that your skin and wounds are kept clean, making sure to pat the wound dry with a clean towel. Do not use lotions on your wound and be careful when using deodorant spray which may cause irritation. If you have a bath, you should avoid soaking your wound for the first six weeks.

Avoid tight clothing which could irritate or place pressure on your wound. Loose comfortable clothes are ideal. Ladies will probably find it uncomfortable to wear certain styles of bra, particularly underwired ones. Seamless bras or camisoles are generally more comfortable.

Portex bag

If you have been discharged home with your chest drain on a portex bag, it is important that you understand the following:

If you accidentally disconnect the drain from the portex bag:

- You need to reconnect it immediately and telephone the ward for advice.
- If you feel very breathless and this does not improve after reconnecting the drain, please go to your nearest Accident and Emergency department.

Managing your pain

You will be discharged with a one week supply of pain killers. Please make an appointment with your GP practice if you require a repeat prescription, allowing plenty of time before you run out.

It is important that you take your painkillers as instructed, so you can take deep breaths, cough and walk around. You can find the instructions on when to take on the medicine label and also on your copy of the discharge letter given to you before you go home. Whilst you have pain, you should continue to take your pain killers.

In the first week, you may find that you experience more pain at home. This is because you will probably be more active at home than you were in hospital. ***This does not mean that you should not be active.*** In this case, you should see your GP who can prescribe you stronger painkillers.

You will find that your skin may be more sensitive whilst it is healing and you may experience pins and needles, shooting pains and numbness. It is normal for these sensations to last for several weeks or months, whilst the nerves damaged at the time of surgery repair themselves.

When you feel that your pain is improving, you can start to gradually reduce your pain killers, starting with the strongest one first (usually the dihydrocodeine). It is advisable to omit either the lunchtime or evening meal dose first.

Your breathing

You may experience some breathlessness on exercise particularly on going up and downstairs or uphill. This varies from person to person and can depend on the type of surgery and your underlying general health. Some breathlessness is expected and should improve in time, although you may find that you will always have a degree of breathlessness.

It is helpful to continue to do your deep breathing exercises in the early weeks after your surgery. Gradually reduce the frequency that you do them because as you become more active your lung volumes naturally improve.

Please ensure that you take your pain killers if it hurts to take a deep breath.

If you feel that your breathing is gradually getting worse and not related to pain or exercise, please contact the ward or your GP for advice.

If you feel a sudden onset of severe breathlessness which is also not related to pain or exercise, you should contact the emergency services.

Exercise and activity

Staying active will help you to recover quicker as it will improve your physical and emotional well-being. Depending on the extent of your surgery, it may take 3-6 months for your lungs to recover. You should continue with your everyday activities such as washing and dressing. You should avoid lifting, pulling or pushing heavy weights until 2-4 weeks after surgery. This includes lifting a small child, vacuuming and carrying heavy bags of shopping.



Walking is a good form of exercise as you will automatically breathe deeper. Take at least one walk every day. Choose a distance within your energy levels and walk at a pace you feel comfortable with. You should be able to walk and talk without feeling that you are gasping for air. You may find it better to attempt a few short walks rather than one longer one. The distance you are able to walk will improve over time.

Build up your exercise gradually without becoming too tired or breathless. The best guidance is to listen to your body and rest when it tells you to.

In the early weeks after your discharge, the exercise programme that you have done before your surgery can be restarted whenever you feel ready to do so. This will help you to gently recover your strength and fitness. This can be done in addition to regular walking or if you are unable to go outside for a walk for example if the weather is poor.

Eating and drinking

After your surgery, your body needs extra energy in order to heal your wounds and keep your immune system healthy, so you can fight off the risk of infection. During your recovery, try to choose foods that are high in energy, such as carbohydrates, protein and fat.

You may find that you have lost your appetite after the surgery, and that eating small amounts more frequently is better for you. Your appetite will gradually return, but if you think that it is not improving, please see your GP who may prescribe nutritional supplements for you. You may also feel you have lost your sense of taste after the anaesthetic and this will gradually return.

Some pain killers can make you constipated which can be very painful and also make you feel sick. Please take your laxatives until your normal bowel function returns. Remaining active will help you to avoid becoming constipated, as will drinking plenty of fluids and eating foods high in fibre, including some fruit and vegetables each day. If you have persistent nausea, vomiting or constipation please visit your GP.

Rest and sleep

It is normal to feel tired on discharge. During the first few weeks, you will find that you tire easily doing the small daily activities that would not normally make you feel tired. It is important that you balance activity with rest and try to plan quiet periods of the day when you can rest. Gradually, you will find that you need less rest throughout the day.

It is important to get a good nights sleep. This may be difficult as your normal sleeping position is now uncomfortable and you may not be able to sleep flat for a while.

You may find that using extra pillows to prop yourself up slightly in bed is more comfortable. Take your painkillers at night to help relieve discomfort from your wound. It may take a couple of weeks for you to settle back into your normal sleeping routine.

If pain is disrupting your sleep, please visit your GP.

Emotional well-being

If you have been diagnosed with lung cancer, you may be finding this difficult to come to terms with, in addition to having had major surgery. It is quite common to feel anxious, low in mood, tearful, resentful and irritable for a period of time. These feelings can happen without warning and will generally get better over time. However, if they continue to affect you, you should contact your lung cancer nurse specialist or your GP. Sometimes talking about what you are going through can be helpful.

Resuming sexual relationships

There are no definite rules about this, it is entirely up to you. Allow between 2-4 weeks to give your body and wounds time to recover. It is unlikely that you will do any damage following the surgery. Choose a position which is comfortable, does not restrict your breathing and avoids excessive strain on the wound.



Returning to work

The physical or emotional demands of your job may influence when you can go back to work. Many people can feel tired

and lack concentration for a period of time following discharge from hospital. It is best not to start work until you feel completely well.

Many employers will allow you to go back to work on a phased return to build back up to working a full working week. You should discuss this option with your employer.

If you are self-employed or do heavy jobs you may need to assess more fully what you are able to do. Please discuss this with your Consultant Surgeon or the Thoracic Surgical Nurse Specialist who can give you advice.

Driving

You are not allowed to drive while you're taking Dihydrocodeine. This is generally about 2-4 weeks after surgery. To be able to start driving again you must be able to wear a seatbelt and make an emergency stop without causing yourself too much discomfort. You must also be comfortable enough to twist to be reverse your car. You should also check with your motor insurance company when you will be covered to drive after your operation.

Air travel

Please check with your surgeon when you come for your check up after surgery if you are able to fly. If you wish to travel before this, please speak to your Consultant Surgeon or the Thoracic Surgical Nurse Specialist who can give you advice.

Holidays

For the first six months after surgery if you wish to travel abroad it is advised to plan a relaxing holiday with minimal travelling.

Use complete sun block over the actual scar for the first six months after surgery.

It is also advised to get holiday insurance cover. The cost of insurance may alter due to your treatment. There are specialist insurance companies that can help with this.

Who to contact for advice

For any concerns, you can contact the ward for advice if you feel that your problem is related to your surgery. Depending on the nature of your enquiry, you may be asked to visit your GP, the ward or attend the nearest A&E department. If you are acutely short of breath, please attend your nearest A&E for assessment.

Ward J84 - 0113 206 9184

The Exercise Programme

This exercise programme has been designed by the physiotherapy team to help you to improve your fitness before your surgery and also to help you regain your strength and fitness whilst you are recovering at home.

Before your surgery

If you already keep fit through a sporting activity or going to the gym, continue to do this until the time of your operation. The exercise programme will be useful in the early stages after your surgery, when you are advised to avoid sporting activity for 4-6 weeks until after you have seen the surgeon for your check-up.

If you are starting to build your fitness for surgery, you should complete the exercise programme three times per week whilst also gradually increasing the distance you are able to walk.

If you have any existing problems with your shoulders or legs, discuss this with your GP before starting the exercise programme.

After your surgery

It is safe to restart the exercise programme whenever you feel ready to do so. It is likely that this will be at a lower level than you could do before the surgery. Do not use any weights for any arm exercises

General advice about the exercises in this diary

Always start with the warm up. The exercises are in a set order to alternate work for your arms and legs. Please keep to this order.

If you feel more breathless than that described by number **5 (severe)** on the scale of breathlessness, slow down and rest. Only return to exercise once you are comfortable again - **2 (slight)** or less on the scale of breathlessness

If any exercise causes you significant discomfort or pain, stop immediately, then move on to another exercise once comfortable again.

How long and at what intensity you can exercise for varies from person to person. You must work at your own pace.

Duration of each exercise

Do each exercise in turn for at least two minutes (even if for most of this time you are resting). When you can complete a particular exercise for two minutes, without resting, increase the time spent on that particular exercise to a maximum of five minutes.

This may mean, for example, that you spend:

- four minutes on exercise 1, (trunk rotations),
- two minutes on exercise 2, (step ups),
- five minutes on exercise 3 etc.

This is absolutely fine. Time yourself with a watch or clock, you can get someone to help you with this.

Scale of breathlessness	
Aim for between 3 and 4	
Score	How breathless you feel
0	Nothing at all
0.5	Very, very slight
1	Very slight
2	Slight
3	Moderate
4	Somewhat severe
5	Severe
6	
7	Very severe
8	
9	Very, very severe
10	Maximum

Difficulty - how breathless you feel

Aim to keep at a pace which means that you are working at a level of 3-4 on the breathlessness scale, 'moderate to somewhat severe breathlessness'. Before the operation, this may mean that you need to use light weights when doing the arm exercises.

Time

In total, including a warm-up, this programme should take a minimum of 25 minutes, increasing to a maximum of 55 minutes as you increase the time slots for each exercise.

Record your progress in your exercise log on pages 46-57. Set yourself realistic targets.

The warm up

Start with the warm up exercises below to prepare your body for exercise and to reduce the risk of injury.

Before you start, make sure that:

- You are wearing loose fitting and comfortable clothing and flat supportive footwear;
 - you are sitting in an upright position;
 - the temperature of the room is comfortable;
 - you have adequate space all around you to exercise; and
 - you have uninterrupted time to complete your exercises.
1. Start in a sitting position - repeat each 5 - 10 times
 1. Look over your shoulder – left and right.
 2. Circle your shoulders one way and then the other.
 3. March on the spot whilst sitting.
 4. Toe tap.
 5. Slouch and stretch your back in the chair.

Suggestion: try doing it to music but at a pace which is comfortable to you.

The Exercises



1. Trunk rotations

Sit on a chair.

Look over your shoulder while turning your upper body.

Hold for five seconds.

Repeat to the other side.



2. Step-ups

Step up with one leg.

Bring the other leg to join it.

Step down with the first leg.

Bring the other leg to join it.

NB: You could use the bottom step of the stairs for this.



3. Overhead arms (without weights after your operation)

Sit or stand holding your hands on your chest.

Lift alternate arms from your chest straight up and bring back down.



4. Heel raises

Stand, holding onto back of chair.

Push up onto your toes.

Hold for three seconds.



5. Wall push-ups

Stand facing a wall with your arms straight out in front of you at shoulder height and your hands on the wall.

Do push-ups against the wall keeping your body in a straight line and keeping your hands on the wall.



6. March on the spot

Stand, either free, or using a wall or solid surface to aid balance.

March on the spot.



7. Double arm raise

Stand straight with your arms in front of you, holding a ball (or similar object).

Keeping your arms straight, raise the object until you are holding it above your head for three seconds.



8. Squats

Stand, holding onto a chair / table with both hands for support.

Slowly crouch keeping your back straight and heels on the floor.

Stay crouched for approx 10 seconds, and feel the stretching in your buttocks and the front of your thighs.



9. Back stroke

Standing or sitting, with both arms hanging down.

Slowly rotate your arms counter-clockwise, so your arms raise in front of you and up above your head, and then down and behind.



10. Sit to stand

Stand up from sitting down.

Sit down again.

Your home exercise and
activity diary pages for
before and after surgery



The diary pages are provided to encourage and
monitor your progress.

Home exercise and activity diary - *After surgery*

Please use the scale of breathlessness to the right to fill in the difficulty of each exercise.

Day Exercise		1		2		3		4	
		Time	Difficulty	Time	Difficulty	Time	Difficulty	Time	Difficulty
	<i>Example</i>	2	4	2	4	2	3	3	4
	Warm-Up								
1	Trunk Rotations								
2	Step Ups								
3	Overhead Arms								
4	Heel Raises								
5	Wall Push Ups								
6	March on Spot								
7	Double Arm Raise								
8	Squats								
9	Back Stroke								
10	Sit to Stand								
Other exercises)									

Home exercise and activity diary - After surgery

Please use the scale of breathlessness to the right to fill in the difficulty of each exercise.

Day	Exercise	1		2		3		4	
		Time	Difficulty	Time	Difficulty	Time	Difficulty	Time	Difficulty
	<i>Example</i>	2	4	2	4	2	3	3	4
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3	Overhead Arms								
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6	March on Spot								
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8	Squats								
9	Back Stroke								
10	Sit to Stand								
	Other exercises)								

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	Other exercises)								

Home exercise and activity diary - After surgery

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8	Squats								
9	Back Stroke								
10	Sit to Stand								
Other exercises)									

Useful contact information

Quality of service

Your views are very important to us as they help us to improve the service we provide. We welcome any kind of feedback, whether positive or negative as this helps us identify where things are working well and also where there may be room for improvement.

While we hope you will not have cause to complain about any aspect of your stay, we would encourage patients and their carers to discuss any issues of concern with the Senior Sister on the ward or the Matron in the first instance, to see if they can be resolved locally. If you do not feel that this has resolved the matter, you can speak to the Patient Advice and Liaison Service (PALS) on:

0113 206 6261 - 9:00-16:30 Monday - Friday, for queries outside normal working hours please leave a voicemail message.

Or you can put your concerns in writing to:

**The Complaints Manager, Patient Experience Team,
Trust Headquarters, St James's Hospital, Beckett Street,
Leeds, LS9 7TF**

Or email your concerns to:

patientexperience.leadsth@nhs.net

All complaints are not only dealt with on an individual basis but reported and investigated to ensure that lessons are learned and similar occurrences avoided.

Leeds Cancer Support

Leeds Cancer Support offers access to information and a wide range of support, in a welcoming environment for you, your family and friends. The information centre is open 10am-4pm and can be found on Level 1 in Bexley Wing and also in the purpose built Sir Robert Ogden Macmillan Centre.

The Sir Robert Ogden Macmillan Centre

The centre provides a drop in service from 10am-4pm on weekdays for all cancer patients and their families. A range of therapeutic services are provided free of charge such as aromatherapy, counselling and benefit advice. It provides psychological and social support to cancer patients and their families.

Contact numbers:

Information Centre Level 1 Bexley Wing - 0113 206 8816

Sir Robert Ogden Macmillan Centre - 0113 206 6498

Both of the above centres can be emailed on:

leedsth-tr.cancersupport@nhs.net

Smokefree National Helpline - 0300 123 1044

Be Smoke Free - One You Leeds - 0800 169 4219 -
oneyouleeds.co.uk/be-smoke-free/

Macmillan Cancer Support - 0808 808 0000 -
www.macmillan.org.uk

The Roy Castle Lung Cancer Foundation - 0333 323 7200 -
www.roycastle.org

They supply free books on lung cancer and treatments

Cancer Research

www.cancerresearchuk.org

Maggie Centre - SJUH - 0113 457 8364

Mesothelioma UK - 0800 169 2409

www.mesothelioma.uk.com

Provides impartial up-to-date information relating to malignant mesothelioma for all UK mesothelioma patients and their carers
Monday - Friday 9am - 6pm.

Marie Curie Cancer Care - Support line: 0800 090 2309

www.mariecurie.org.uk

What did you think of your care? Visit bit.ly/nhsleedsfft
Your views matter

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