

Your Journey:

Preparing for and recovering following your Lung Operation

An information booklet for patients embarking on lung surgery

Introduction

This booklet provides information about the operation, how to prepare for it and your recovery. The healthier you are prior to the operation the less likely it is you will suffer complications.

Being given a diagnosis of lung cancer can be an emotional time. It is important to help yourself by talking through any concerns, worries or questions you may have. You can contact your Lung Specialist Nurses: Monday - Friday 8.30am - 4.30pm.

Lung Nurses Exeter: 01392 402168

Lung Nurses Derriford: 01752 432383

Now a little about you.....

About me

Name:.....

Lung Cancer Stage:

Type of Lung Cancer:.....

Proposed treatment:.....

Lung nurse specialist contact:

01392 402168 or 07917595123.

Email: rde-tr.lungspecialistnurses@nhs.net

Above all else remember the **three golden rules** to aid your ongoing recovery:

- Stop smoking
- Exercise regularly
- Eat well

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Section one:

Preparing for your operation

Lung specialist nurses:

Lung Specialist Nurses are here to support every patient and their family with lung cancer. They are the first port of call to offer whatever support is needed before, during and after your surgery.

How can the Lung Cancer Specialist Nurses help you?

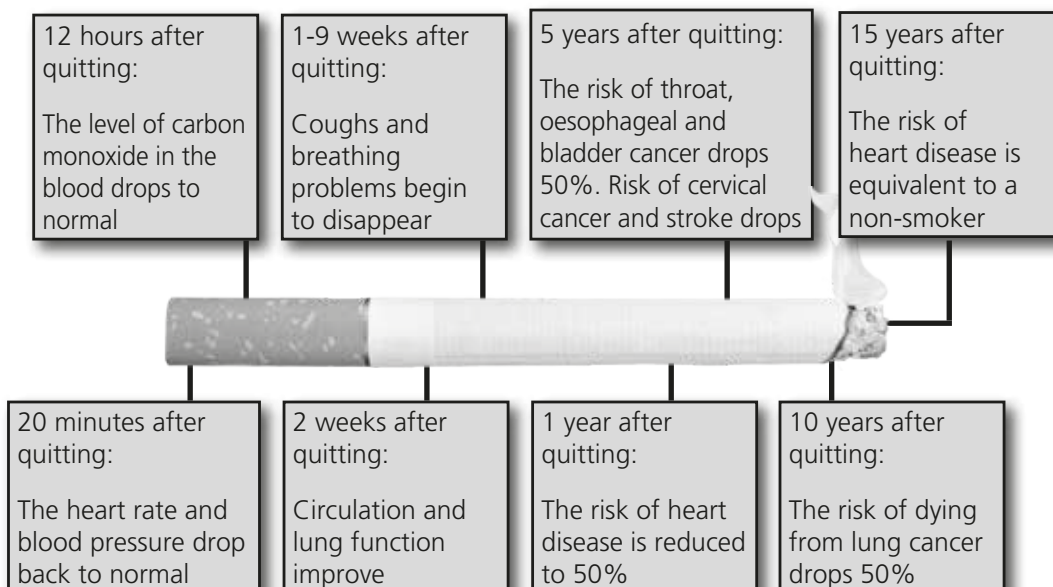
- Explaining your illness and treatment options
- Emotional Support
- Symptom Control
- Benefits/financial advice
- Co-ordinate your care

Further Advice and Resources:

- **FORCE Cancer Support Centre:**
01392 406151
- **National Macmillan Cancer Support Helpline:**
Call free 0808 808 00 00 Monday to Friday 9am – 8pm
or visit their website: www.macmillan.org.uk
- **Roy Castle Lung Cancer Foundation:**
Call Free 0333 323 7200
or visit their website: www.roycastle.org

Stopping smoking:

Stopping smoking is the most important thing you can do to improve your health.



Stopping smoking as soon as you can before your operation has very important benefits:

- Reduces the risk of serious complications including death.
- A shorter hospital stay.
- Improve the body's ability to heal.
- Improves response to radiotherapy and chemotherapy treatment.

Stopping smoking can feel scary but lots of people do give up after many years of smoking. There are lots of things available to make stopping smoking easier including a wide choice of medications.

If you are thinking about stopping smoking why not call the Stop Smoking advisor at the RD&E Foundation Trust Hospital on 01392 406133. Appointments are available face-to-face or by telephone.

If you require support in the community, you can also receive support and treatment from your GP or call the Smokefree National Helpline on 0300 123 1044 or go to www.nhs.uk/smokefree.

Just a little motivation to help you quit....YOU CAN DO IT and ...

This is how much money you will save...

Cigarettes a day	1 Week	1 Month	1 Year	5 Years	10 Years
10	£28	£112	£1344	£6720	£13,440
20	£56	£224	£2688	£13,440	£26,880
30	£84	£336	£4032	£20,160	£40,320
40	£112	£448	£5376	£26,880	£53,760
60	£168	£672	£8064	£40,320	£80,640
80	£224	£896	£10,752	£53,760	£107,520

(as per 2016 figures)

Regular Exercise:

Between diagnosis and your surgery it is very important to stay active and maintain, or preferably improve your activity levels. **The fitter you are before your operation the sooner you will recover.**

Consider the following advice about regular exercise before treatment:

- Continue all your normal daily activities or hobbies, e.g. walking, golf
- Go for a walk twice a day. There is a plan on page 24.
- Walk up and down stairs 5 times daily

Consider the following at home exercises:

Step-ups:

Stand 10 inches away from a step. Step up with the right leg first for 15 seconds then the left leg first for 15 seconds.

Walk on the spot:

Walk or march on the spot for 30 seconds.

Sitting to standing:

Sit on a chair and use one hand to help push up to a standing position. Progress with standing up with arms crossed. Stand up and sit down 5-10 times.

There is an exercise diary at the end of this document where you can record your daily activities. Please bring this booklet with you to any appointments at the hospital. Your treatment team will be very happy to see you are exercising regularly. If you are unsure about increasing your activity levels, please speak with your doctor or nurse.

My exercise plan...

Eating well:

Good nutrition is vital in preparing for and recovering from your operation. Maintaining a healthy and well balanced diet provides your body with the nourishment it needs to prevent complications and allow your body to heal.

Eat a balanced diet:

- Fruit and vegetables (at least five portions a day)
- Starchy foods, such as bread, pasta, potatoes and rice
- Protein-rich foods, such as meat, fish, eggs, beans, lentils and nuts
- Milk and dairy foods, such as yoghurts and cheese

If you have a poor appetite or have lost weight recently:

- Aim for 3 small meals and 3 small snacks a day
- Choose high energy and protein-rich foods (Full fat milk, cheese, cream or butter)
- Add cheese, cream or butter to foods like mashed potato, soups and vegetables
- Keep a stock of high-energy snacks (Cheese, biscuits, cakes, nuts, crisps, dried fruit)
- Keep a stock of ready meals so that you always have something easy to prepare
- Have nourishing drinks in between meals (Hot chocolate, Horlicks, milkshakes)
- Choose soft, moist foods (shepherd's pie, fish pie, stews and macaroni cheese)

Nutritional supplements:

If you are underweight, or have lost weight recently then the dietitian may prescribe nutritional supplements. These products are good sources of calories, protein, fat, vitamins and minerals and include milkshakes, juices, soups, puddings, yoghurts and powders.

If you are overweight:

- Continue to eat regular meals, but watch your portion sizes, try using a smaller plate
- Use vegetables and salad to bulk out your meals to help fill you up.
- Grill, steam, boil or microwave instead of frying foods
- Choose low-fat options such as skimmed milk, low-fat yoghurts and spreads and “diet” drinks
- Choose healthy snacks such as fruit, vegetables and low fat yoghurts

Constipation?

Make sure that you eat plenty of fibre (found in fruit, vegetables, whole grain foods and cereals) and drink plenty of fluids. Being mobile and exercising when you feel ready will also help to relieve constipation.

If you have any worries regarding your diet, or would like further information please ask one of the **lung specialist nurses** who can contact the **dietitian**.

My nutrition plan...

Too much alcohol can have a detrimental effect on health and it is important to consider how to address this before and during your treatment.

What are the health risks associated with drinking excessively?

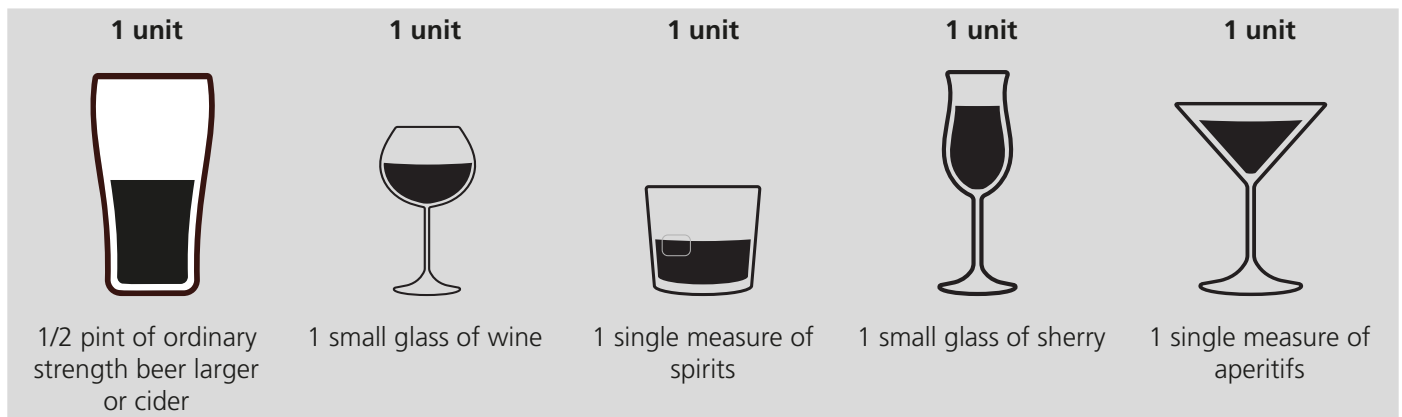
- Alcohol dependency
- Weight gain
- High blood pressure
- Anxiety and depression
- Insomnia

Do I drink too much?

It is recommended that you shouldn't drink more than 14 units of alcohol per week regularly.

What is a unit of alcohol?

Each of these drinks and measures is the equivalent to 1 unit:



If you are regularly drinking more than 14 units a week, try these simple tips to help you cut down.

Make a plan:

Before you start drinking set a limit on how much you are going to drink.

Set budget:

Only take a fixed amount of money to spend on alcohol.

Let them know:

Let your friends and family know you are cutting down to get more support.

Make it a smaller one:

When choosing your drink, order a smaller one, such as a bottle of beer instead of a pint.

Have a lower strength:

Cut down on alcohol by ordering drinks with a lower percentage.

Take a break:

Have several drink free days a week.

Stay hydrated:

Have a glass of water before you have alcohol and alternate alcoholic drinks with soft drinks.

Take each day at a time:

Cut back a little each day. That way, every day will be a success.

Am I drinking excessively?

The quiz below can be used to identify levels of risky drinking. A total of 5+ indicates increasing or higher risk drinking.

AUDIT	Scoring system					Your score
	0	1	2	3	4	
Q1. How often do you have a drink containing alcohol?	Never	Monthly or less	2-4 times per month	2 - 3 times per week	4+ times per week	
Q2. How many units of alcohol do you drink on a typical day when you are drinking?	0 -2	3 - 4	5 - 6	7 - 9	10+	
Q3. How often have you had 6 or more units if female, or 8 or more if male, on a single occasion in the last year?	Never	Less than Monthly	Monthly	Weekly	Daily or almost dally	
Q4. How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than Monthly	Monthly	Weekly	Daily or almost dally	
Q5. How often during the last year have you failed to do what was normally expected from you because of your drinking?	Never	Less than Monthly	Monthly	Weekly	Daily or almost dally	
Q6. How often during the last year have you needed an alcoholic drink in the morning to get yourself going after a heavy drinking session?	Never	Less than Monthly	Monthly	Weekly	Daily or almost dally	
Q7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than Monthly	Monthly	Weekly	Daily or almost dally	
Q8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?	Never	Less than Monthly	Monthly	Weekly	Daily or almost dally	
Q9. Have you or somebody else been injured as a result of your drinking?	No		Yes, but not in the last year		Yes, during the last year	
Q10. Has a relative or friend, doctor or other health worker been concerned about your drinking or suggested that you cut down?	No		Yes, but not in the last year		Yes, during the last year	

Your Score:

0-7: You are within the sensible drinking range and have a low risk of alcohol-related problems.

Over 8: Indicate harmful or hazardous drinking.

8-15: Medium level of risk. Drinking at your current level puts you at risk of developing problems with your health and life in general, such as work and relationships. Consider cutting down.

16-19: Higher risk of complications from alcohol. Cutting back on your own may be difficult at this level, as you may be dependent, so you may need professional help from your GP and/or a counsellor.

20 and over: Possible dependence. Your drinking is already causing you problems, and you could very well be dependent. You should definitely consider stopping gradually or at least reduce your drinking. You should seek professional help to ascertain the level of your dependence and the safest way to withdraw from alcohol.

Overall:

In general, a score of 1 or more on Question 2 or Question 3 indicates consumption at a hazardous level.

Points scored above 0 on questions 4-6 (especially weekly or daily symptoms) imply the presence or the beginning of alcohol dependence

Points scored on questions 7-10 indicate alcohol-related harm is already being experienced.

Am I dependent on alcohol?

If you are drinking daily and experience any of the below symptoms, you may be drinking at dependent levels:

- Shaking
- Sweating
- Sickness
- Trouble sleeping
- Anxiety
- Headache
- Hallucinations (seeing things that aren't there)
- Confusion
- Seizures

Should I stop drinking prior to my treatment?

You must discuss with your doctors how much and how regularly you drink alcohol. If you are drinking over the recommended limit of 14 units per week you should make every effort to cut down.

If you are concerned you are drinking excessively or dependent on alcohol it is important that you DO NOT stop drinking suddenly before surgery. This can cause withdrawal and can be very dangerous. Plans can be made to treat withdrawal in a controlled way if you are drinking excessively or dependent on alcohol. The alcohol team can help with this.

How can I get help?

If you would like to discuss your alcohol intake, ask questions or seek help then **contact the Lung Cancer Specialist Nurse or your local alcohol team; Together Drug & Alcohol Service, Devon on: 01392 492360**

My plan for reducing alcohol ...

Section two:

Learn more about lung operations

How is lung cancer treated?

The treatment for lung cancer is dependent on the “stage” of the cancer. The stage of lung cancer describes the extent of the disease and where in the body the cancer is present. Lung cancer is best treated when it is a single tumour confined to one area of the lung (a “primary tumour”, where the cancer began). Unfortunately lung cancer rarely causes any symptoms at this stage and can be difficult to find. Lung cancer can spread to other parts of the body including lymph glands in the chest and places outside of the chest like the liver, bones and brain (secondary tumours). The higher the stage of the lung cancer the harder it is to treat.

Stage 1: Lung Cancer is a small primary tumour confined to one part of a lung.

Stage 2: Lung Cancer has spread to the lymph nodes inside the same lung as the tumour

Stage 3: Lung Cancer has spread to lymph nodes in the centre of the chest, outside the lung

Stage 4: Lung Cancer, there is secondary tumours in other places of the body, outside of the lungs.

Stage 1 and 2 lung cancer is called “early stage lung cancer” and is treated with either an operation or radiotherapy. Sometimes (but not all the time) stage 1 and 2 lung cancer may require chemotherapy after an operation. The intention of treatment in early stage lung cancer is to cure the cancer.

Stage 3 lung cancer is called “locally advanced lung cancer” and frequently needs two types of treatment like surgery and chemotherapy or chemotherapy and radiotherapy. Stage 3 lung cancer is hard to cure but not impossible.

Stage 4 lung cancer is unfortunately “advanced stage lung cancer” and is virtually impossible to cure. Treatment is designed to slow the cancer as much as possible. This generally is with drug treatment like chemotherapy but there are new drug treatments used more and more in lung cancer and your doctors will talk to you about what treatments are available.

Learn more about lung surgery for cancer:

What type of surgery do I need?

There are two types of surgery that can be performed to remove a tumour in the lung:

- Thoracotomy
- VATS – Video Assisted Thoracic Surgery (keyhole surgery)

What is a thoracotomy?

It is an operation done under a general anaesthetic where the surgeon makes a cut between two ribs round the side of your chest. Once the chest wall has been opened the surgeon can take a good look around inside and remove the part of lung that needs to be removed.



This diagram shows a thoracotomy wound.

What is a VATS?

It is an operation done under general anaesthetic using a keyhole method which means smaller cuts. Your surgeon will discuss with you if he thinks this may be possible.

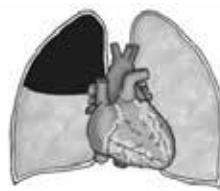
The surgeon will discuss with you how much lung must be removed to best treat the cancer. This often involves a balance between removing as much lung around the tumour as possible, whilst preserving lung function.

There are different names given to how much lung is removed:

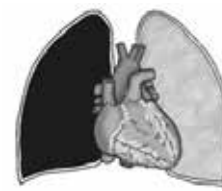
- Wedge resection: a small section or “wedge” of lung is removed
- Lobectomy: a lobe of the lung is removed
- Pneumonectomy: the entire lung is removed



Wedge resection



Lobectomy



Pneumonectomy

What are the risks?

There are risks with any operation. Your surgeon will explain that this is a major operation and, inevitably a small number of patients have complications. If you have part of your lung removed (lobectomy) the risk of death from surgery is approximately 2%. If you have your whole lung removed (pneumonectomy) the risk is slightly higher at approximately 5%. These risks may vary depending on your previous medical history. Some of the complications are bleeding, infection, heart attacks, strokes, and pain. Risk must always be weighed against the benefits of surgery. Surgery is one of the best treatments for lung cancer and provides the best chance of long term cure.

What happens on the day of surgery?

You will be admitted to hospital the day before or on the day of your operation. On arrival to the ward you will be shown to your bed when it is ready. Your anaesthetist will usually see you and will explain when to stop eating and drinking prior to your surgery.

What happens after the operation?

When the operation has finished you will wake up in the recovery room. You will stay there for a few hours to make sure you are comfortable before being taken back to the ward.

Will I have any tubes or drains after the operation?

Yes. Unless you have had your whole lung removed, this is to help the lung heal after the operation and to drain away any remaining fluid. A chest drain is left in the space between the lung and the chest wall and then attached to a bottle on the floor. Occasionally the lung can take slightly longer to heal after the operation. Air can leak from the lung and through the tube causing it to bubble for several days after the operation. This is called a “persistent air leak”. This can mean the drain has to stay in place a little longer and occasionally patients go home with the drain for a few days before returning to the hospital to see if can be removed.

How do I care for my wound?

If you have a thoracotomy you will have a wound around the side of your chest following the operation. After a VATS operation you will have up to three small scars measuring 2-3cm. Scars from both operations may feel raised and lumpy. This is normal scar tissue. You may shower as normal but avoid rubbing soap or shower gel directly into your wound. Pat dry with a soft towel. Do not pick any scabs which form as they are protecting the new tissue that is growing underneath.

Stitches:

If your surgeon has used stitches then the ward staff will arrange for a nurse from your GP practice to remove these. This is normally done at 7-10 days after your operation.

Dressings:

Some wounds require a dressing on them as they can leak a little fluid. If this is the case the ward staff will arrange for the community nurses / practice nurses to change this dressing for you.

**Surgery for lung cancer will be performed at:
Derriford Hospital,
Plymouth,
Devon,
PL6 8DH.**

Physiotherapy and recovery from surgery

Physiotherapy in hospital

Physiotherapy is an important part of the recovery process after your operation. You will be assessed by a physiotherapist the day after your operation and treated either once or twice a day whilst you are in hospital.

Breathing Exercises

Breathing exercises and coughing are the most important exercises after your operation. They help prevent chest infections and pneumonia because the anaesthetic (used during the operation) can cause sputum (phlegm) to collect on your chest. You do not breathe as deeply when in bed as you do when you are up and about. This can mean that the bottom parts of your lungs don't fully expand in the early days after an operation. Also, many patients are reluctant to take deep breaths and cough because of their wound, pain and drains.

Your physiotherapist will teach you the following exercises:

- Take a slow deep breath in, trying to fill your lungs as much as you can, hold it for three seconds and then breathe out - Repeat this three times
- Perform a 'huff'. This is a short sharp breath out with your mouth open. Cough. Repeat the cycle again.

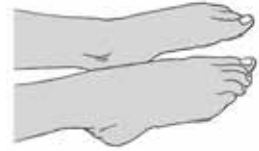
To reduce any discomfort when huffing or coughing you can support your chest with your hands or you may be given a rolled up towel. You should expect some discomfort when carrying out the breathing exercises but if the pain is stopping you from doing them effectively you must inform your physiotherapist or nurse.

Foot and leg exercises

This exercise will help to reduce the risk of blood clots forming and reduce swelling in your legs.

Lying on your back or sitting, bend and straighten your ankles quickly.

Repeat 10 times.



Arm and shoulder exercises



This exercise helps to prevent stiffness in your shoulder joint and to stretch the scar tissue over your wound. It should be performed five times each side, three times a day.

Lying on the bed or sitting, raise one arm out in front and then up above your head. If necessary, use your other arm to assist and achieve full range of movement.

Post-discharge activities

Once you have recovered sufficiently and the surgeon is happy with your progress you will be discharged home.

It is important you continue with your breathing exercises as directed by the ward physiotherapist.

Additionally, you must continue walking regularly, slowly building up to your pre-operative levels.

What about pain following my operation?

There will always be some pain following surgery due to the nature of the operation. Straight after the operation this will be managed by the acute pain team at the hospital, who will be able to help.

Can the pain last longer?

Temporary nerve injury from surgery is the most likely cause for pain following the operation. Sometimes after surgery the nerves can become sensitised which means the pain continues or feels numb.

How long it can last?

The pain can be variable in length. It often resolves within a few weeks. Sometimes it can be more persistent and last longer. Under these circumstances we would recommend being reviewed by your doctor.

How can it vary?

Most patients have some pain after surgery but in most circumstances as the wound from the surgery heals, the pain improves. If it becomes more persistent you may need extra support and medication.

What do I do if my pain persists?

If your pain persists the first thing would be to use regular Paracetamol. Sometimes you can use anti-inflammatory medications such as Ibuprofen. This should be checked with a doctor first as there can be reasons why you should not take this medication.

If these are not sufficient sometimes a doctor can prescribe strong pain killers such as codeine or morphine. This should only be in the short term.

To treat nerve pain specifically we may use pain killers which act by modulating the nerve pain. Examples are; Amitriptyline, Gabapentin and Pregabalin.

These can be prescribed by your doctor but if the pain persists it would be sensible to discuss with the Lung Specialist Nurses.

What other symptoms might I feel?

Breathlessness, loss of appetite, fatigue or nausea.

These symptoms are normal before and after the procedure. If they are troubling you there are things that can be done to help you. Contact the Lung Specialist Nurses.

The lung specialist nursing service is available from 8.30am to 16:30 Monday to Friday. You can contact the service yourself or give permission for others involved in your care to contact us. There is an answer phone – please leave a message and your call will be returned as soon as possible. **01392 402168**

Section three:

Life after treatment

What happens when my treatment finishes?

The focus is now on recovering and returning to normal life. Remember the **three golden rules** for successful treatment? They are just as important for your recovery.

Stopping smoking

Regular exercise

Eating well

Try not to smoke

Not smoking is vital to ensure a speedy recovery. Why not have a chat with the local stop smoking service to see what help and support is available for you?

Exercise regularly

You must gradually build up your activity after your treatment finishes. You should avoid heavy lifting, pushing or pulling e.g. heavy housework for the first 4-6 weeks. After 6-8 weeks you should gradually increase your activity and doing light gardening, housework and gentle exercise will aid your recovery. Sometimes people find they are more breathless following surgery or radiotherapy, this should improve as your body adapts to having less lung capacity but may take between 3-6 months.

The table below is a guide to increasing activity levels after your treatment. Talk to your doctors and a physiotherapist about what is right for you.

Stage of recovery	Length of walking
Week 1	5 minutes, several times a day as a stroll
Week 2	10 minutes, twice a day, at a leisurely pace
Week 3	15 minutes, daily, at a leisurely pace
Week 4	20 minutes, daily, moderate pace
Week 5-6	25-30 minutes, daily, moderate-brisk pace
Target	At least 30-40 minutes, daily, moderate-brisk pace

After your treatment you may find your appetite has reduced. This should gradually improve. Eating little and often may help. Aim for 3 small meals a day with 3 snacks a day.

Can I go on holiday?

Having a holiday to look forward to is a good way of improving your recovery. There are no restrictions to holidaying in the UK but it is advisable to not plan any long journeys until you are feeling comfortable to be able to sit for long periods. If you have had part of your lung removed it is recommended that you do not fly for 12 weeks following your operation.

When can I go back to work?

The amount of time you need off work varies depending on how you feel and what job you do. Ask the doctor or nurse looking after you for individual advice. If you are unemployed or feel you may be unable to return to work our FORCE cancer support benefit adviser will be happy to tell you about benefits.

Can I drive?

You are advised to check with your insurance company and see if they impose any restrictions as to when you are able to drive again. Often this is 4 weeks. You should also consider how comfortable you will be in a driving position and whether you would safely be able to turn and twist as needed and if you could do an emergency stop.

Anything else I need to know?

Emotions: It is normal to feel more emotional after your treatment. Don't worry if you find it difficult to concentrate or find yourself feeling upset or low in mood. The Lung Specialist Nurses are there to offer support.

Bowels:

After an operation it is common to suffer from bouts of constipation. The painkillers and changes in activity and diet are all causes of constipation. To avoid this you should try and eat a diet high in fibre. For example lots of fruit and vegetables, whole meal bread and cereals. Also drink plenty of water. As your activity improves you should find your bowels return to normal.

Sexual relations:

You may resume this as soon as you feel able.

Protecting yourself from illness:

Where possible avoid mixing with people who have colds and flu until you have recovered, as this can put you at risk of getting a chest infection which may delay your recovery. Also avoid smoky environments.

My recovery plan ...

When will I next be seen in clinic?

The surgeon and specialist nurse will plan your review. You will be advised the schedule and imaging needed. All follow up appointments will be at the Royal Devon and Exeter Hospital. If you have any questions about your follow-up please contact the Lung Specialist Nurses.

My follow-up plan....

Section four:

My notepad and diary

Questions I want to ask my Surgeon / the team:

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Information I want to write down to help me remember!

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Appointments diary

Date	Time	Type of appointment	Place/location

This section can be used to document any new medications started before, during or after your treatment as a reminder of why and for how long. It can also be used to record medications at discharge from hospital e.g. after your operation.

Medication	Date started	Reason	Stop/review date

Reference List:

Am I drinking excessively tool:

www.who.int/substance_abuse/publications/alcohol/en/

Drug and alcohol helpline in Devon

www.edp.org.uk/together-drug-alcohol-service/

This booklet was Adapted by lung team RDE but developed by the lung cancer team at the University Hospital of South Manchester and members of the Greater Manchester Cancer Lung Pathway Board and Living With and Beyond Cancer Sub-group.

The Trust cannot accept any responsibility for the accuracy of the information given if the leaflet is not used by RD&E staff undertaking procedures at the RD&E hospitals.

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