A lifetime of specialist care

Royal Brompton & Harefield NHS
NHS Foundation Trust

Before your lung surgery

(your stay in hospital for lung surgery)

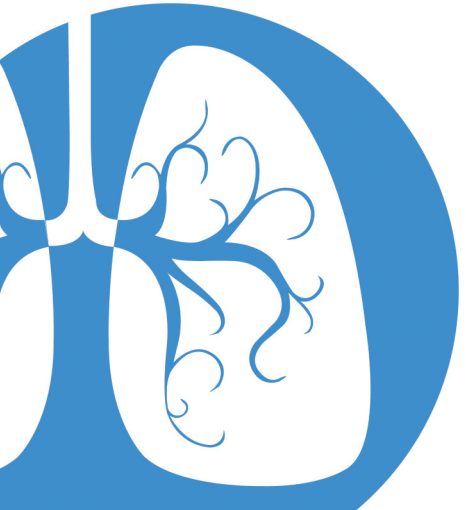


Table of contents

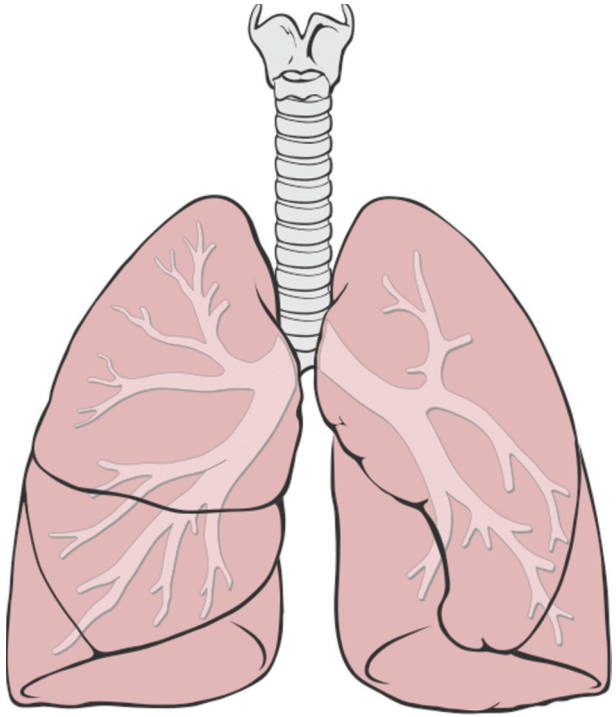
This leaflet gives you information on your stay in hospital for lung surgery. It does not replace the need for personal advice from a healthcare professional. Please ask us if you have any questions.

Why do I need lung surgery?

Lung surgery is carried out to help patients with different conditions. Some patients need lung surgery because they have emphysema, lung cancer, or other cancers that have spread to the lungs. Sometimes, surgery is needed to take biopsies (tissue samples) of the lung for diagnosis.

Your consultant will discuss your condition with you and what type of surgery you may need.

If you have questions about your condition or surgery, please ask us. We can use the image below to discuss which part(s) of your lungs have been affected and the type of surgery recommended.



Lungs: Patrick J. Lynch, medical illustrator; C. Carl Jaffe, MD, cardiologist

Before my lung surgery

Before your surgery, we will arrange tests to check your general health and fitness for surgery.

These may include:

- Blood tests – to check different areas of your general health.
- Chest X-ray – to look at your heart and lungs.
- Electrocardiogram (ECG) – to look at your heart rhythm.
- Lung function tests – to check your lung capacity and how well your lungs are working. We have a separate leaflet called *Your lung function tests*. Please ask if you would like a copy.

Sometimes we need to carry out tests under general anaesthetic to check your condition, decide if surgery is the right treatment for you, and if so, what type of surgery.

Tests that may be carried out under general anaesthetic include:

- Fibreoptic bronchoscopy – to check the airways of the lungs. A thin flexible tube with a camera at the end is guided down your windpipe to your lungs. At the same time the doctor may take biopsies (tissue samples) for analysis.
- Rigid bronchoscopy – to check the airways of the lungs. A thin and rigid (firm) tube with a camera at the end is guided down your windpipe to your lungs. At the same time the doctor may take biopsies for analysis. Rigid bronchoscopy gives a better view of the airways and makes it possible to take more difficult samples than using a flexible tube.
- Mediastinoscopy – often carried out at the same time as a bronchoscopy. A small incision (cut) is made in the upper chest. A telescopic camera is inserted into the small incision that lets us see pictures of the space between the two lungs. We may also take tissue samples for analysis.

What if my tests reveal cancer?

If your tests reveal cancer, your consultant will discuss the most appropriate treatment with you. This may include surgery, radiotherapy, chemotherapy, other forms of medication (targeted therapies), or a combination of treatments.

If you feel the need to talk to someone about your condition, treatment, or any other concerns, clinical staff are always available. Our Macmillan clinical nurse specialists in cancer care can provide support and information for you and your family. Religious representatives and Macmillan welfare rights advisers are also available.

Coming into hospital for lung surgery

We usually ask that you come into hospital a day before or on the day of your surgery, but it may be necessary to come in a few days earlier for some final tests. If so, we will discuss the details with you before you come into hospital.

Please remember to bring all your medicines (in their original containers) with you when you come into hospital.

During your stay in hospital, staff from different specialist areas will help take care of you.

Your surgical team will manage your care. The team includes a consultant thoracic surgeon, registrar, junior doctor and an advanced nurse practitioner in thoracic surgery. A member of this team will see you every day, usually on a morning ward round.

On your first day in hospital, a member of the team will examine you and ask questions about your medical history, if this was not completed in clinic before you came into hospital. He or she will discuss with you the specific type of surgery planned and ask you to sign a consent form. This form records that you

understand the surgery and agree to go ahead with it. If you have any questions, please ask.

When you arrive, a nurse will show you around the ward, find out how you are and start to plan your care with you. Your nurse will also help you plan to ensure that you have the right support at home after you have left hospital.

A specialist doctor called an anaesthetist, will visit you on the ward before your surgery to discuss your medical history, what will happen to you in the anaesthetic room and the risks to you of having a general anaesthetic. He or she will also plan your care immediately after the surgery, including pain relief and your recovery. Please let the anaesthetist know if you are taking anticoagulants (medicines to prevent blood clots), aspirin, antiplatelets such as clopidogrel (also prevents blood clots), medicines for diabetes, or antidepressants. The anaesthetist may also give you a premedication to help you relax before surgery.

During surgery, the anaesthetist will check your heart, lungs and kidneys and give you medication to keep you asleep and pain free. After surgery, we will wake you up and take you to the recovery unit where we will look after you until you are well enough to move to the high dependency unit (HDU) or intensive care.

A clinical nurse specialist (CNS) can discuss with you any treatments you have been offered and how these treatments can help. The CNS can help manage your care at our hospitals and liaise with the team at the hospital you were referred from. He or she can work with you to find out your specific needs relating to your medical condition, how you feel about your condition, and how you will cope when you are back home. Your CNS can put you in touch with the right members of our specialist team, such as the welfare rights adviser, discharge co-ordinators or psychological support.

A physiotherapist may see you the day after surgery. He or she will show you how to keep your lungs clear and get you exercising regularly to help you recover from surgery more quickly.

If you need specialist advice and support on food and nutrition, **a dietitian** can discuss this with you.

The discharge co-ordinators can liaise with your local social services to set up any support you or your carer may need when you are back at home.

Most patients are able to make their own arrangements for travelling back home. However, if you think you will need special assistance, please discuss this with **your nurse.**

The Macmillan welfare rights adviser can advise you on any benefits that may be available to you and discuss issues such as employment rights, or in some circumstances, grants to help with the costs of your illness.

Occupational therapists can advise you on how to continue with your daily activities after your lung surgery, including any equipment you may need to help you live more independently at home.

A pharmacist will visit the ward twice each day to check your medication and discuss any issues you may have.

The pain management nurse specialist will work with you, your consultant and the ward nurse to minimise any pain or discomfort you may experience during your stay.

If you would like to talk to a **religious representative**, please ask us.

What are the risks of surgery?

All medical procedures carry some risk. It is important to remember that we would not recommend surgery if we did not believe the benefits outweigh any risks. The risks will be different for each patient, so we will discuss the risks that apply to you in more detail before the procedure. Possible risks include:

Bleeding

It is normal to lose some blood through your chest drains (see pages 14-16 for more information on chest drains). If blood loss is more than expected, we may have to take you back to the theatre so your surgeon can find the cause of bleeding. You may need to have a blood transfusion.

Prolonged (long-lasting) air leak

If air leaks from the lung over a prolonged period, you may need to go home with a chest drain in place. We will monitor your chest drain at follow-up visits.

Chest infection

Sometimes a chest infection can develop after surgery. Your physiotherapist will discuss with you how you can reduce the risk of a chest infection. It is important that you keep as active as possible after surgery. We will work with you to slowly increase your level of exercise day by day.

Wound infection

There is a small risk of developing a wound infection, which may need antibiotics. To reduce the risk of infection, we ask that you shower before your surgery with a liquid soap and change into a clean theatre gown. It is important that you and your visitors wash your hands frequently and use the alcohol rubs provided. Please avoid touching your wound as this may increase the risk of infection. We have a separate leaflet on *Hygiene and wound care after heart and lung operations.* Please ask if you would like a copy.

Blood clot (deep vein thrombosis, or DVT)

There is a risk of developing a blood clot in a vein after surgery. To help reduce the risk of blood clots, we will ask you to wear supportive stockings during your stay in hospital. The stockings improve circulation in your legs while you are in bed and not moving them around as much as usual. It is important that you keep wearing your stockings until we suggest the best time to remove them. You will also have a small daily injection to thin your blood. Other measures that will reduce the risk of DVT are staying active by walking as much as possible and keeping well hydrated by drinking plenty of fluids. If a clot forms, we can treat it with extra medication.

Risks associated with your general anaesthetic

The risks associated with general anaesthesia are very low. Risks vary for each patient and your anaesthetist will discuss this with you.

The risk of death

All surgical procedures carry some risk and lung surgery can include a risk of death. The risks are different for each operation and each individual patient. Your surgeon will discuss these risks with you.

It is important you understand the risks and benefits of surgery and alternatives available to you. If you have any questions, please ask us.

Are there any long-term side effects?

Some patients develop long-term pain problems around their scar. Long-term pain can be treated with medication.

Some patients may find that they get breathless more easily after surgery. If you have any questions about breathlessness, please ask us.

What happens on the day of surgery?

On the ward
It is very important that you do not eat anything for six hours before your surgery. However, you can drink water or black tea up to two hours before your surgery. You can also drink water with any pills that the anaesthetist asks you to take.

If you are unsure, please ask one of the nurses.

We will ask you to take a bath or shower and put on a clean hospital gown. We will also provide you with compression stockings to help prevent blood clots developing during and after surgery.

Your surgeon will use a special marker pen to mark the area on your skin where the incision will be made.

Premedication
If you have been prescribed premedication, the nurse looking after you will give you this one to two hours before the surgery, which may make you a little sleepy. Therefore, it is important that you stay in bed after you have taken the premedication or ask us to help you if you need to get out of bed.

Leaving the ward
If your family members want to wait with you before the surgery, please mention this to the ward staff.

When you go into the operating theatre, we will lock away any personal items for safekeeping until you return to the ward. Please pack your toiletries and other small items, which you may need straight after surgery, in a separate bag.

Before you go into the anaesthetic room a member of theatre staff will check your details.

What happens in the anaesthetic room?
We will check your consent form and wristband and help you onto the operating table.

We will place a small drip, usually in the back of the hand, to help you fall asleep. For major surgery, we may insert another small tube, usually in the wrist, to continuously measure your blood pressure during surgery. Both of these can be done with local anaesthetic so they are not painful.

So we can measure your heart rate and oxygen levels in your blood, electrodes (small sticky patches) will be attached to your chest and an oxygen mask placed over your mouth. This is not painful.

After you are asleep, the anaesthetist will usually insert another drip into a bigger vein in the neck and a catheter into the bladder to drain any urine.

Once you are asleep, a breathing machine (ventilator) will support your lungs. The ventilator is connected to a tube inserted down your windpipe.

How is lung surgery carried out?

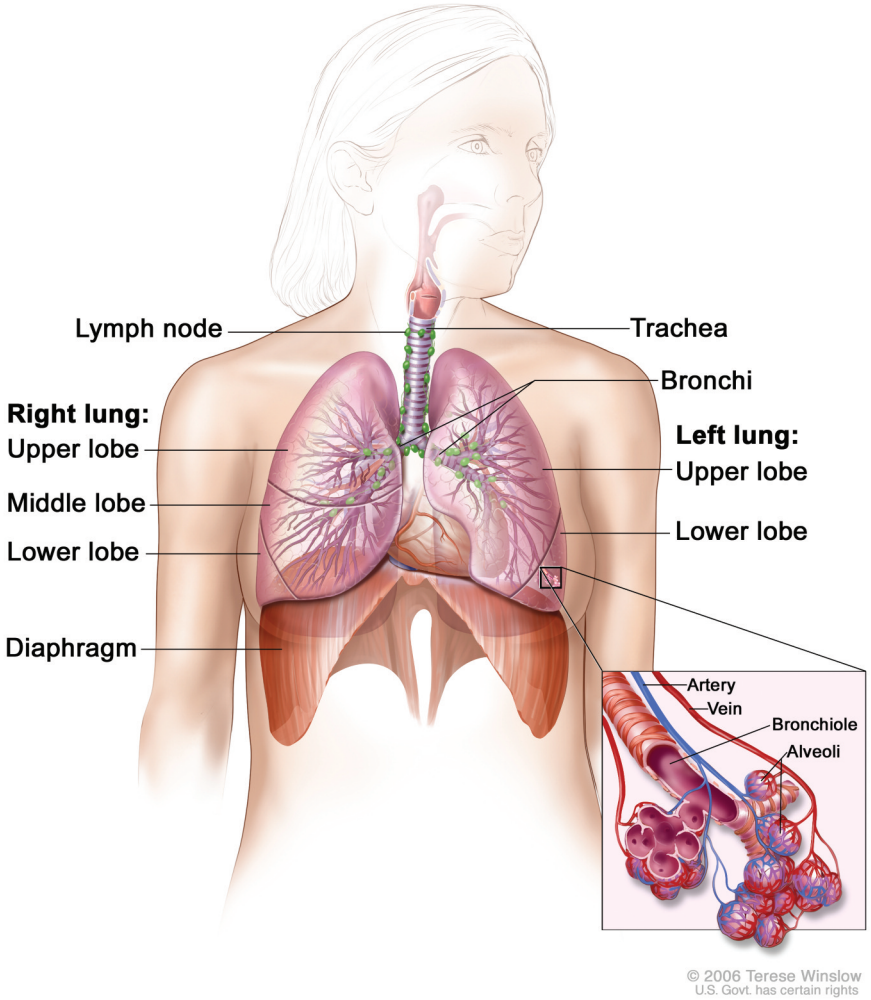
There are three main ways a surgeon can carry out lung surgery. Your surgeon will discuss which option is best for you.

Thoracotomy
This is an incision that runs around the side of the chest to access the lung. Sometimes it may only be a few centimetres long, but it can run from under the nipple and around onto the back under the shoulder blade (about 20-30 centimetres).

Video assisted thoracoscopy (VATS)
This is often referred to as keyhole surgery. It involves passing a telescopic camera through small cuts in the chest to access the lung or pleura (lining of the lung) under video guidance. The surgeon will make one, two or three small incisions on the side of the chest to insert the camera and surgical tools to carry out the surgery. Not all surgery can be performed using VATS.

If VATS cannot be performed at the time of surgery, your surgeon will usually carry out a thoracotomy operation (see above).

Sternotomy
This is where a cut is made through the sternum (breastbone) in order to gain access to both of the chest cavities.



What happens immediately after surgery?

Before taking you to the recovery unit, we will wake you up and remove the tube in your windpipe. You will then receive oxygen through a facemask.

A specially trained recovery nurse will look after you, making sure that you are not in pain and that you are breathing well.

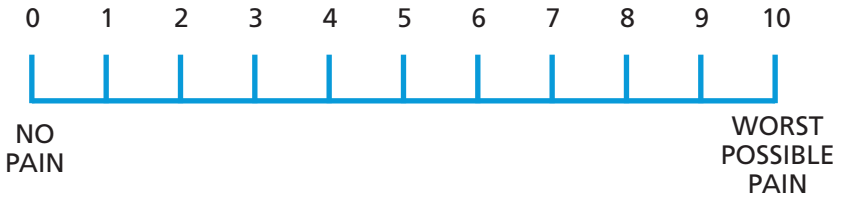
We may also take a chest X-ray while you are in the recovery ward to check that your drains are in place and your lungs are re-inflating.

You may need to stay in the recovery unit overnight or may have to go back to the high dependency unit and / or the ward so we can continue to monitor your progress closely.

Your family and friends will be able to see you when you are back on HDU or the ward. One of our nurses will talk to them and bring them to see you.

Managing pain after surgery

During your stay in hospital your nurse will use a scale of 0 to 10 (0 being no pain, 10 being worst pain) to check your pain level with you (see image below).



How strong is your pain?
What about when you move around or cough?

Our aim is to ensure your pain is at a level that you can deal with. It is important that you tell us if you have any increased pain or discomfort so that we can make changes to your pain-relieving medication.

For the first 24-72 hours after your surgery, we will give you pain medication in one of the following ways:

- Epidural: medication through a small tube in your back – this is usually inserted while you are in the anaesthetic room. We have a separate leaflet called *Epidurals for pain relief after surgery*. Please ask us if you would like a copy.
- Paravertebral Block (PVB): medication through a small tube placed in the chest cavity at the time of the surgery.
- Patient controlled analgesia (PCA): medication through a drip in your hand or arm. PCA lets you give the medication to yourself by pressing a button when you feel you need it. There is no risk of addiction or overdosing. We have a separate leaflet called *Patient controlled analgesia.* Please ask us if you would like a copy.
- Intravenous infusion: medication through a drip in your hand or arm. A pump gives you a constant dose of medication.

Once you are eating and drinking again, we will also give you pain relief tablets at regular intervals to keep you as comfortable as possible.

We will discuss the best pain relief method with you.

Medical equipment used after surgery

You may have some or all of the following for the first 24-72 hours after your surgery:

- Up to three chest drains to remove fluid and air from your chest and help your lungs to re-inflate.
- A cardiac (heart) monitor so we can check your heartbeat.
- One or two drips in your hand(s) so we can give you fluids and / or medicines.
- Arterial line (a drip that goes into an artery) to monitor your blood pressure and oxygen levels.
- Neckline (a drip that goes into a vein in your neck) to monitor your blood pressure and fluid levels.
- Bladder catheter (a tube going into your bladder) to drain away urine.
- Oxygen saturation monitor (clip attached to your finger or ear lobe) to measure the amount of oxygen circulating in your blood.
- Oxygen mask (over your mouth and nose) or nasal prongs (two soft plastic tubes under nostrils) to provide oxygen after your surgery if needed.

What are chest drains and why might I need them after surgery?

Most patients need chest drains after surgery. Chest drains are designed to remove the blood, fluid and air that collect within the chest cavity after surgery.

The drain is a one-way system that prevents fluid and air from returning to the chest.

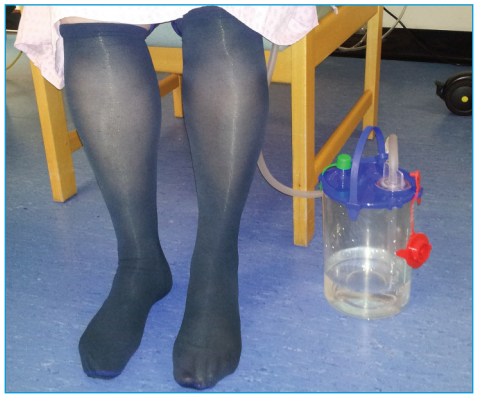
One end of a plastic tube is placed in your chest and the other end goes into a drainage bottle. The tube is held in place with a stitch. The drain is placed between the ribcage and the lung.

We use two different types of chest drains at the Trust (see images below). We will discuss with you which drain you will have and how best to look after it.

At first, some patients may also need a suction device to help their lungs re-inflate. The length of time patients need to stay on the suction device is different for each patient. If you need a suction device, we will discuss this with you in more detail.

We may also ask you to walk around the ward or use an exercise bike to help your lungs re-inflate fully. Chest drains will be removed after they have finished draining fluid and air. This usually takes a few days.

Electronic chest drain being carried by a patient



Underwater seal drain

Note: the patient is wearing compression stockings to minimise the risk of blood clots.

How do I care for my chest drains?

To help you take care of your chest drain(s) you should:

- Avoid trapping, kicking or folding the tubes as this may stop them from draining.
- Try to avoid the tubes getting caught in clothing or equipment to prevent pulling on them as this may cause discomfort and pain.
- If the tube becomes detached, call a nurse immediately and he / she will ensure the system is correctly attached again. You may need an extra chest X-ray to check this.

If you are using an underwater seal drain, you should:

- Keep the chest drain bottles upright and standing on the floor. Please do not worry if the bottle tips over. Simply stand it up again and ask a nurse to check everything is working properly.
- Make sure you keep the bottles below the level of your chest at all times. The drains work using gravity so the flow out of your chest must always be downwards.
- Carry the bottle(s) either by the handle or in a carrier.

What will happen during my recovery in hospital?

Exercise is a very important part of your recovery. As soon as possible after your surgery, the physiotherapist will help you to start with basic exercises. This usually involves short walks around the ward with assistance if needed. As your recovery progresses, you should be able to walk further.

If you are unable to move away from your bed due to lines and drains, you can exercise by walking on the spot or using a static exercise bike.

If you have any sputum (phlegm) after your surgery, the physiotherapist will show you how to clear it effectively.

The physiotherapist will also ensure that you can move your arm fully on the operated side. This is because you may unconsciously be keeping it still for fear of pain. If you do not move your arm, it may develop into a stiff shoulder, which would require treatment in the future.

What are the different stages in recovery?

Stage 1 (day of surgery)

- Start pain medication

Stage 2

- Get out of bed and sit in chair
- Continue pain medication
- Physiotherapist visits to teach exercises and then repeat these hourly
- Most tubes and lines removed, but drains remain
- You may have a chest X-ray

Stage 3

- Chest X-ray
- Drains removed
- Exercise increased
- Taking pain medication by mouth only
- Wound dressings removed as requested by your surgical team

Stage 4

- Wound checked daily
- Receive advice about exercise and pain medication at home
- Receive *After your lung surgery – guidelines for recovery* information leaflet
- Chest X-ray
- Walk around with physiotherapist if needed

Stage 5

- Chest X-ray
- Go home

What should I eat to help my recovery?

You will need more calories (energy) from your food and drink to help your body to heal and regain strength after the surgery. Vitamins and minerals are also important for healing, so it is important to get a balance of nutrients from your food. You will also need fibre to help regular bowel function.

You may find it is easier to eat smaller amounts more often. Extra snacks are always available. If you think this may help, please ask your nurse.

If you are having any problems with your diet talk to your nurse who will be able to give advice or refer you to a dietitian as needed.

What will happen when I leave hospital?

Please note that hospital transport is only available to patients with medical conditions that prevent them from using other transport and who do not have relatives or friends who can help them.

Please arrange for a family member or friend to take you home when you leave hospital. You can stay in the discharge lounge / day room until he / she can pick you up.

Before you go home, we will check your wound and make sure your stitches are in place. The stitches will dissolve over time.

If you had a chest drain removed after your surgery, you will need to have the drain stitch(es) removed within a week after you leave hospital. We will arrange for your GP practice or district nurse to remove your stitches.

If you have any problems with your wound when you are at home, such as redness, soreness, or if the wound feels hot to touch or oozes liquid, please see your GP or call the ward for advice.

When you leave hospital we will give you:

A supply of medication

Your nurse will discuss the medication with you and how to take it. The pharmacist will give you enough medication for the first few weeks. You can arrange a repeat prescription from your GP if needed. You should take pain medication for as long as you feel you need it. We have a separate leaflet called *Managing your pain at home after lung surgery*, which includes advice on how and when to reduce your pain medication. Please ask us for a copy if you have not received one. If you need any advice on your medication, you can call our medicines helpline on 020 7351 8901.

An outpatient appointment

This will usually be three to six weeks after your surgery. You will be able to discuss your wound, pain you are having and your general recovery at this appointment.

A letter for your own records and one to hand to your GP

It is important that you do not leave the hospital without these letters – they list your medication and describe the surgery you had.

Royal Brompton Hospital contacts

Where a bleep number is listed, call the main switchboard and ask for the bleep number. Please contact the individual ward to check visiting times.

Switchboard	020 7352 8121
Princess Alexandra ward	020 7351 8596
Sir Reginald Wilson ward	020 7351 8483
Adult intensive care unit (AICU)	020 7351 8587
Recovery unit	020 7351 8478
High dependency unit (Elizabeth Ward)	020 7351 8595
Specialist physiotherapist	bleep 7301
Macmillan lead nurse for cancer *Mon-Fri 9am-5pm*	07531 978 548
Macmillan lung nurse specialist	020 7352 8121 extension 4134 or 4133 or bleep 7068 or 7079
Advanced practitioner – thoracic surgery	020 7352 8121 bleep 1353
Pain management nurse specialist	020 7352 8121 extension 2408 or bleep 7037 or 7064
Occupational therapy	020 7352 8121 extension 4453
Macmillan welfare rights adviser	020 7352 8121 extension 4736
Patient advice and liaison service (PALS)	020 7349 7715
Medicines helpline	020 7351 8901

Relatives' accommodation office	020 7351 8044

Medical secretaries

Secretary to Mr Dusmet	020 7351 8228
Secretary to Mr Jordan	020 7351 8559
Secretary to Mr Ladas	020 7351 8567
Secretary to Mr Lim	020 7351 8591

Harefield Hospital contacts

Where a bleep number is listed, call the main switchboard and ask for the bleep number. Please contact the individual ward to check visiting times.

Switchboard	01895 823 737
Maple ward	01895 828 552
Cedar 1 ward	01895 828 618
Cedar 2 ward	01895 828 581
Cherry Tree day case unit	01895 828 658
High dependency unit (HDU)	01895 828 572
Intensive therapy unit (ITU)	01895 828 685/2
Advanced practitioners in thoracic surgery	bleep 6253 or 6182
Specialist physiotherapist	bleep 6306
Macmillan lung nurse specialist	01895 828 989 bleep 6181 or 6310
Macmillan lead nurse for cancer *Mon-Fri 9am-5pm*	07531 978 548
Pain management nurse specialist	bleep 6144 or 6165

Harefield Hospital contacts *(continued)*

Occupational therapy	bleep 6304 or 6406
Macmillan welfare rights adviser	020 7352 8121 extension 4736 or bleep 7550
Relatives' accommodation	01895 828 823 or 01895 828 599
Patient advice and liaison service (PALS)	01895 823 737 extension 6572
Medicines helpline	020 7351 8901

Medical secretaries

Secretary to Mr Anikin	01895 838 558
Secretary to Ms Beddow and Mr Kyparissopoulos	01895 838 948
Secretary to Mr McGonigle	01895 838 621

If you have concerns about any aspect of the service you have received in hospital and feel unable to talk to those people responsible for your care, call PALS on 020 7349 7715 or email pals@rbht.nhs.uk. This is a confidential service.

Other useful contacts

SMOKEFREE (Advice to help you quit smoking)	0800 02224 332 *www.smokefree.nhs.uk*
Macmillan Cancer Support	0808 808 0000 *www.macmillan.org.uk*
Information Prescription Service	*www.nhs.uk/ips*
Roy Castle Lung Cancer Foundation	0333 323 7200 *www.roycastle.org*
Cancer Research UK	0808 800 4040 *www.cancerresearchuk.org*
British Lung Foundation (BLF)	03000 030 555 (local support groups) 020 7688 5555 *www.blf.org.uk*
Lymphoma Association	0808 808 5555 *www.lymphomas.org.uk*
Sarcoma UK	020 7250 8271 *www.sarcoma.org.uk*
Disability Benefits helpline	08457 123 456 *www.gov.uk/disability-benefits-helpline*
Lynda Jackson Cancer Information Centre Mount Vernon Hospital	01923 844 014 *www.ljmc.org*
Carers' Trust	0844 800 4361 *www.carers.org*
Cancer Black Care	020 8961 4151 *www.cancerblackcare.org*
Mesothelioma UK	0800 169 2409 *www.mesothelioma.uk.com*

Some advice from previous patients

What to bring

- Slippers that fit comfortably and have a good grip and a light dressing gown.
- Pyjamas can be comfortable as they are easy to use with the lines and tubes.
- Your own wash bag and toiletries.
- A small personal radio, or MP3 player, with earphones.
- Books, magazines, laptop or tablet computer (free wi-fi is available to connect to the internet).

On the ward

- Remind your visitors to stick to the visiting times. You will be tired after your operation and you will need rest.
- Strong pain medication that you need after the surgery may make you drowsy, forgetful and even have hallucinations. Ask the specialist pain nurses to get the right medication and dose for you.
- You may forget things that you have been told and need to have someone repeat them. Don't worry, this phase passes quickly.
- Find out from your team when they will have results ready after your operation. You may want your family or a friend to be with you and help you remember everything that you have been told.
- If you do not understand or remember anything, don't be afraid to ask more questions or get someone to write things down for you.

Your notes

Royal Brompton Hospital
Sydney Street
London
SW3 6NP
tel: 020 7352 8121
textphone: (18001) 020 7352 8121

Harefield Hospital
Hill End Road
Harefield
Middlesex
UB9 6JH
tel: 01895 823 737
textphone: (18001) 01895 823 737

Website: www.rbht.nhs.uk

إذا كنت ترغب في الحصول على ترجمة فورية لمضمون هذه الوثيقة إلى اللغة العربية، يرجى منك الاتصال بأحد مستخدمينا بجناح المصلحة التي يتم فيها استشفائك. أحد موظفينا سيسعى لترتيب إجراءات الترجمة وإتمامها في الوقت المناسب لك.

Brosurteki bilginin Turkçe tercumesi için tedavi goruyor oldugunuz bolume bas vurunuz. Bolum personeli tercumenin gerçeklesmesini en kisa zamanda ayarlacaktir.

 October 2013