

Treating Lung Cancer - A Quick Guide



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This is a brief summary of the information on 'Treating lung cancer' from CancerHelp UK. You will find more detailed information on the website.

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Lung cancer stages

The stage of a cancer tells you how big it is and how far it has spread. It is important because it helps your doctor decide which treatment you need. The tests and scans you have to diagnose your cancer give some information about the stage. Sometimes it is not possible to be certain about the stage of a cancer until after surgery.

There are different ways of staging lung cancer – they are the number staging system and the TNM system.

The number staging system

The number system divides the stages into 4 main groups

Stage 1 – the cancer is small and only in one area of the lung (localised)

Stage 2 and 3 – the cancer is larger and may have grown into the surrounding tissues and there may be cancer cells in the lymph nodes (locally advanced)

Stage 4 – the cancer has spread to another part of the body (secondary or metastatic cancer)

TNM staging system

TNM staging takes the following factors into account

The size and position of the tumour (T)
 Whether cancer cells have spread into the lymph nodes (N)
 Whether the tumour has spread anywhere else in the body – secondary cancer or metastases (M)



The doctor gives each factor a number. So, a very small cancer which hasn't spread is T1 N0 M0. A cancer that is larger and has spread into the lymph nodes and to another part of the body is T3, N1, M1.

CancerHelp UK has detailed information about the different number stages and the TNM staging of lung cancer.

Statistics and outlook for lung cancer

Outlook means your chances of getting better. Your doctor may call this your prognosis. The likely outcome of treatment for lung cancer depends on how advanced the cancer is when it is diagnosed (the stage), and on the type of lung cancer you have.

Lung cancer is difficult to treat and is often diagnosed very late. Because of these factors, it has one of the lowest survival outcomes of any type of cancer.

On CancerHelp UK, we have quite detailed information about the likely outcome of different stages of lung cancer. The statistics we use are taken from a variety of sources, including the opinions and experience of the experts who check every section of CancerHelp UK. They are intended as a general guide only. For the more complete picture in your case, you'd have to speak to your own specialist.

How reliable are cancer statistics?

No statistics can tell you what will happen to you. The same type of cancer can grow at different rates in different people. The statistics cannot tell you about the different treatments people may have had, or how that treatment may have affected their prognosis. There are many individual

factors that will affect your treatment and your outlook.

Types of treatment for lung cancer

Surgery, radiotherapy, and chemotherapy are all used to treat lung cancer. They can be used alone or together. Your doctor will plan the best treatment for you. NHS guidelines state that everyone diagnosed with lung cancer should be under the care of a multi disciplinary team. This is a team of health professionals who work together to decide how best to manage your treatment and care. There are a number of factors that your specialists take into account when planning your treatment

- The type of lung cancer you have
- Where the cancer is within the lung
- Your general health
- Whether the cancer has spread (the stage)
- Results of blood tests and scans

Small cell lung cancer is mostly treated with chemotherapy. Surgery is not usually suitable because this type of cancer has usually spread at the time of diagnosis. You may also have radiotherapy.

Non small cell lung cancer can be treated with surgery, chemotherapy, radiotherapy or a combination of these, depending on the stage of the cancer. In some people with advanced cancer biological therapies called erlotinib or gefitinib may be used after chemotherapy treatment.



Surgery

Types of surgery for lung cancer

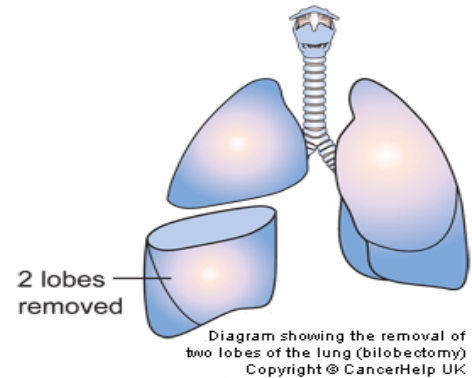
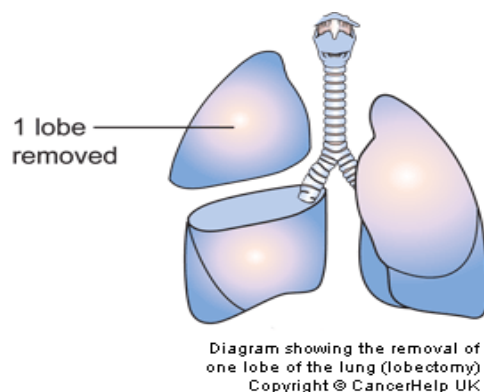
Surgery is mostly used to treat non small cell lung cancers. It is not normally used to treat small cell lung cancer.

If your cancer is very near your heart, windpipe, gullet or a major blood vessel, it may be better for you to have other treatments. Your doctor may suggest chemotherapy or radiotherapy instead. If you have other health problems such as a severe heart condition or other lung disease, you may not be fit enough to have major lung surgery.

There are three main types of surgery used to treat lung cancer. These are

- Removing a section of lung
- Removing a lobe of the lung (lobectomy)
- Removing the whole lung

During your operation your surgeon will remove some of the lymph nodes from around the lung. The surgeon sends the lymph nodes to the laboratory where they are examined under a microscope. If the nodes contain cancer cells this may affect the treatment that you need after the surgery.



If your cancer has spread

If your cancer has spread to anywhere else in your body, then a major operation to remove your cancer will not be the right treatment for you. Your doctor will probably suggest another type of treatment such as chemotherapy and radiotherapy instead.

Before surgery for lung cancer

Information and tests

Before your operation your surgeon and specialist nurse will explain what the operation involves. They may meet you in the outpatient pre assessment clinic or when you arrive at the hospital for your operation. They will answer any questions that you have. Your doctor will ask you to sign a form saying that you agree to have the operation. Your doctor will also want to do some blood tests to check your health and make sure you are not anaemic. They will probably also want you to have an ECG (electrocardiogram).

Tests for your breathing

If you are going to have part, or all, of a lung removed, the doctor must be sure you will be able to breathe comfortably afterwards. He or she may want you to have lung



function tests. These tests measure how much air you can breathe in and out.

When you go into hospital

Before your operation you will see a physiotherapist and a doctor. The physiotherapist will teach you breathing exercises and leg exercises to do after your operation. These will help you to avoid chest infections or blood clots in your legs as you recover. You may also have injections of anti clotting drugs just under the skin and your nurse may give you elasticated stockings to wear.

After surgery for lung cancer

After lung surgery you may wake up in intensive care (ICU) or a high dependency recovery unit (HDU). You may feel very drowsy. As soon as your doctors are sure you are recovering well, you will move back to the ward. The nurses and physiotherapists will get you moving about as soon as possible after your operation. They will also help you to do breathing and leg exercises to help stop complications like chest infections or blood clots in the legs. To start with, you are likely to have some tubes in place. You will have a drip into your arm. And drainage tubes from your wound, connected to a bottle. You will have regular chest X-rays to make sure your remaining lung tissue is working properly.

Painkillers

You will almost certainly have some pain for the first few days. If you are in pain, it is important you tell the nurse or doctor as soon as possible. With your help, they can find the right type and dose of painkiller for you. Rarely, some people have pain that starts a few weeks or months after their operation from damaged nerve endings

growing back. If you have any pain after your operation, do tell your surgeon.

Going home

You will probably be ready to go home after about 5 to 10 days. When you get home, it is important to exercise to get yourself fit again. Check with your doctor or physiotherapist about exercise before you leave the hospital. It is important to start slowly and not overdo it. It may be 4 to 6 weeks before you can drive again.

What to ask your doctor about lung cancer surgery

- Why do I need an operation?
- Which type of operation should I have and why?
- Are there any other choices of treatment?
- What are the risks and benefits of having this operation?
- How safe is the operation you recommend for me?
- Can the operation cure the cancer?
- Will I need other treatment as well as surgery?
- Are there any long term effects of this operation?
- Will I have any pain after this operation?
- Will I be able to breathe properly after this operation?
- How can I help myself get over the operation?

Radiotherapy

About radiotherapy for lung cancer

Radiotherapy uses high energy rays to kill cancer cells. Cancer specialists use radiotherapy to treat all types of lung



cancer. For non small cell lung cancer, you may have it on its own or with another treatment, such as chemotherapy or surgery. For small cell lung cancer, you may have radiotherapy with or after chemotherapy. And you may also have radiotherapy to your brain. This aims to kill off any small cell lung cancer cells that may have spread there.

External radiotherapy

Most radiotherapy for lung cancer is external radiotherapy. The radiation is aimed at your body from a machine. You have the treatment in the hospital radiotherapy department. Your treatment plan will depend on what you are having the treatment for. You may have one treatment, two treatments about a week apart, or daily treatments from Monday to Friday for a few weeks. Some people have 3 treatments a day for about 12 days, including weekends.

If you are having radiotherapy to help control symptoms, you may have one treatment, two treatments about a week apart, or daily treatments for up to 3 weeks.

Internal radiotherapy

Internal radiotherapy uses a radiation source inside a narrow tube that the doctor puts inside your airway for a few minutes.

There is more information in the 'radiotherapy' section of CancerHelp UK.

Radiotherapy for non small cell lung cancer

For early stage cancer your doctor may suggest radiotherapy instead of surgery to try to get rid of the cancer cells. This is called radical radiotherapy and your doctor may suggest it if you can't have an

operation due to a medical condition such as heart failure or lung disease. Or if the cancer is close to your heart or in an awkward place in the lung and surgery would be too difficult. Some people may have radiotherapy after chemotherapy or surgery.

There are two different treatment plans for radical radiotherapy. A plan called CHART means you stay in hospital or a hostel nearby and have 3 daily treatments for 3 weeks, including at weekends. The other plan involves having one treatment each day from Monday to Friday, for between 4 and 7 weeks. You have this as an outpatient.

Chemotherapy and radiotherapy together

Chemotherapy can sometimes help radiotherapy work better. Having both treatments together is called chemoradiation. Because the side effects are increased, not everyone is fit enough for this treatment.

Radiotherapy to improve lung cancer symptoms

Radiotherapy is very good at controlling chest symptoms such as pain and coughing. It can also reduce the pain if cancer cells have spread into the bone. You may have one treatment only, two treatments about a week apart, or a course of treatment over about 2 weeks.

Radiotherapy for small cell lung cancer

Your doctor may suggest radiotherapy after or alongside chemotherapy for small cell lung cancer to help stop the cancer coming back in the lung. Your doctor will be most likely to suggest this treatment if your



cancer has shrunk a lot or disappeared after your chemotherapy. You have this type of radiotherapy over a period of about 3 to 6 weeks.

Radiotherapy to the brain

Your doctor may suggest you have radiotherapy to the head because small cell lung cancer can spread to the brain. Giving radiotherapy makes it much less likely that this will happen. You may hear your doctor talk about prophylactic cranial radiotherapy or PCI. You have this treatment over 1 to 3 weeks and side effects include tiredness, headaches and feeling or being sick.

Radiotherapy to relieve symptoms

Your doctor might use radiotherapy to help control symptoms. For example, you might have radiotherapy to your chest to help control pain, breathlessness or cough. Or you may have radiotherapy to a bone that is causing pain because the cancer has spread there.

You might also have radiotherapy to treat symptoms of lung cancer that has spread to the brain. Brain secondaries are also called cerebral metastases.

Internal radiotherapy for lung cancer

Internal radiotherapy is called brachytherapy or endobronchial therapy. The radiotherapy is given **inside** the lung airway. It is sometimes used when a tumour is blocking your airway. It can shrink the blockage to help make your breathing easier and quieter. It can also help control infections and bleeding caused by the tumour. Radiotherapy given this way can be repeated 2 to 3 times.

Having internal radiotherapy treatment

Having this treatment is similar to having a bronchoscopy. You usually have a local anaesthetic and a sedative. A tube called a bronchoscope is put into your windpipe, either through your nose or your mouth.

A thin tube called a catheter is put through the bronchoscope and into your lung. The doctor then puts a radioactive source down the catheter and positions it next to the tumour. The source is a radioactive metal and gives a dose of radiation to a small area around it. It is left in place for a few minutes. The treatment does not hurt. Most of the radiotherapy dose goes straight to the cancer and very little reaches healthy tissue. This means there are few side effects. Your throat may feel a bit sore for a few days. And you may find that you have a cough and produce more phlegm temporarily.

Lung cancer radiotherapy side effects

The side effects you have from radiotherapy depend on your treatment plan. A few weeks of treatment will have different side effects from treatment given in one or two doses. Radiotherapy side effects usually come on slowly and last for a few weeks after your treatment ends. A small number of people have long term side effects, which develop up to 2 years after treatment has finished.

General side effects

Side effects of radiotherapy can include tiredness and feeling run down, a sore throat and difficulty swallowing, a cough, hair loss, chest pain, temperature and shivering, feeling sick, and sore skin in the treated area. Tell your doctor or



radiographer if you have side effects. Often they can do something to help.

Possible long term side effects

Serious long term side effects are rare after radiotherapy for lung cancer. If you have radiotherapy just to treat symptoms, you are very unlikely to have side effects. Long term side effects are caused by the development of fibrous tissue which is less stretchy than normal tissue. This is called fibrosis. It may affect your lungs and make your breathing get worse. Sometimes fibrosis can narrow your food pipe. This can usually be relieved by a small operation. Rarely, your spine or the covering of your heart can be damaged by radiotherapy.

What to ask your doctor about lung cancer radiotherapy

- Why are you recommending radiotherapy for me?
- Is the radiotherapy to cure my cancer or make my symptoms better?
- How long will the course of treatment last?
- Is it possible to have help paying my fares to and from the hospital?
- Are there any other treatment options?
- What are the side effects likely to be?
- Can I do anything to help prevent the side effects?
- If I have trouble swallowing, should I change my diet?
- With radiotherapy to the head, will I lose my hair?
- Will hair loss be permanent?
- How should I look after my skin?
- Are there likely to be any long term side effects?

Chemotherapy

About chemotherapy for lung cancer

Chemotherapy means using anti cancer or 'cytotoxic' drugs to destroy cancer cells.

Chemotherapy for small cell lung cancer

Chemotherapy is the main treatment for small cell lung cancer. This type of cancer responds very well to chemotherapy. And because chemotherapy treats the whole body, it can treat any cells that have already broken away from the lung tumour.

Chemotherapy for non small cell lung cancer

Chemotherapy may be used before or after surgery or radiotherapy for non small cell lung cancer. If you have advanced non small cell lung cancer, your doctor may suggest combined treatment with radiotherapy and chemotherapy. Or you may have it to help control symptoms of the cancer.

How you have chemotherapy

You have most chemotherapy drugs by injection into a vein or through a drip. But there are some that come as tablets or capsules that you swallow. Usually, you have treatment with a combination of 2 or 3 different drugs. Most often, you have chemotherapy every 3 or 4 weeks. You usually have 4 to 6 treatments. So a full course can take 3 to 4 months.

CancerHelp UK has information about different drug combinations for lung cancer.

Side effects of lung cancer chemotherapy

Chemotherapy drugs affect people in different ways. The side effects vary from



person to person. Some people have few side effects and others have more.

Low blood cell levels

Chemotherapy can lower the number of healthy blood cells you have. You may be more tired than usual and have bleeding problems. It can also mean you are more likely to get infections. It is very important to contact the hospital straight away if you think you have an infection, or if you have a temperature of 38 degrees C or more.

Other side effects

- Feeling or being sick and diarrhoea are quite common chemotherapy side effects - you can have medicines to help
- Hair loss or thinning happens with some chemotherapy drugs, but not all - your hair will grow back when the treatment is over
- You may have mouth ulcers or a sore mouth - regular mouthwashes can help prevent infection
- Feeling tired and run down - some people feel very tired during and after chemotherapy - try to take things more slowly if you need to

What to ask your doctor about lung cancer chemotherapy

- Why are you recommending chemotherapy for me?
- What do you hope the treatment will do for me?
- How will you know if the treatment is working?
- If it isn't working, will the treatment be stopped?
- What are the risks and benefits of this treatment?

- How often will I have to come to the hospital?
- Can I have the treatment as an out patient or will I have to stay in hospital?
- How long will the course of chemotherapy be?
- Is there any other choice of treatment?
- What are the side effects likely to be?
- What can I do to reduce the side effects?
- Are there any new treatments on clinical trial that may help me?

Biological therapy for lung cancer

Types of biological therapy

Biological therapies are treatments that use natural substances from the body, or that change the way cells signal to each other. They can stimulate the body to attack or control the growth of cancer cells. Several types of biological therapy are now used to treat advanced lung cancer. They include erlotinib (Tarceva), gefitinib (Iressa), cetuximab (Erbix), and bevacizumab (Avastin). Research is also looking at using some biological therapies to treat earlier stages of lung cancer.

Side effects of biological therapies

The side effects vary depending on which drug you have. But the possible side effects of biological therapies for lung cancer include

- Tiredness (fatigue)
- Diarrhoea
- Skin changes (rashes or discolouration) – rashes may be severe for some people
- A sore mouth
- Weakness
- Loss of appetite



- Low blood counts
- Swelling of parts of the body, due to build up of fluid

Radiofrequency ablation for lung cancer

Radiofrequency ablation (RFA) uses heat made by radiowaves to kill cancer cells. Radiofrequency is a type of electrical energy. Ablation means destroying completely. The electrical energy heats up the tumour and kills the cancer cells. You can have it along with other types of lung cancer treatment. It can be done more than once if needed.

Having radiofrequency ablation

You have RFA under local or general anaesthetic. The doctor passes a small probe (like a needle) through the skin and directly into the tumour. Radiofrequency energy then passes through the probe, producing heat which destroys the tumour tissue. You may need to stay in hospital overnight afterwards.

Side effects of radiofrequency ablation

You may have some discomfort or pain in the treatment area for a few days. You may also have a slight temperature and feel a bit tired and weak. You may need to avoid any strenuous activity during that time.

The most common complication with RFA for lung cancer is air getting into the chest cavity (pneumothorax). This is not a serious complication though and usually goes away on its own with no treatment.

Photodynamic therapy for lung cancer

Photodynamic therapy (PDT) uses a drug that makes cancer cells sensitive to light (a photosensitising drug), combined with a laser light. It may be used for people with small early stage non small cell lung cancer who don't want to have conventional surgery, or can't have surgery. It may also be used for people with advanced lung cancer where the tumour is blocking an airway. You can have it along with other types of lung cancer treatment. It can be done more than once if needed.

Having PDT

You have an injection of a photosensitising drug which is absorbed by cells all over the body, but stays in cancer cells longer than in normal cells. A few days later, you have a bronchoscopy. The doctor puts a tube down the bronchoscope that shines a very bright light at the tumour. The light triggers the drug to destroy the cancer cells.

You may need to stay in hospital overnight after the procedure. You need to have another bronchoscopy 48 hours later to remove the damaged tissue from the area where the tumour was. This is called debridement.

Side effects of PDT

The photosensitising drug makes your skin sensitive to light for around 6 weeks or more after treatment. You will have to avoid bright sunlight and bright indoor light during this time. You may have some discomfort or pain in the treatment area. Your throat may feel sore when you swallow for a while. You may cough up some blood and mucus for a few days.



Treatment for advanced lung cancer

What advanced lung cancer is

Advanced (or metastatic) lung cancer means the cancer has spread from where it started in the lung. Your cancer may be advanced when it is first diagnosed. Or it may come back some time after you are first treated (recurrent cancer).

Lung cancer can spread into nearby body tissues (local spread). It may grow into an airway, or into the chest wall or lining of the lung. Specialists regard a lung cancer as advanced if you have fluid collecting around the lung and the fluid contains cancer cells. This situation is called a pleural effusion.

A cancer that has spread to another part of the body is called a secondary cancer. The most common areas of lung cancer spread are the lymph nodes in the chest, abdomen, neck or armpit, and the liver, the bones and the brain. More rarely lung cancer can spread to the adrenal glands.

Symptoms of lung cancer spread

The symptoms will depend on where the cancer has spread to. Cancer in the lymph nodes usually causes a swelling or lump. Cancer spread to the liver may cause pain under your ribs on your right side, or you may feel sick. Cancer in the bone usually shows up as bone pain. Cancer spread to the brain may make you drowsy and confused. Or you may have severe headaches, often with sickness.

Which treatment for advanced lung cancer?

Chemotherapy or radiotherapy may be used to treat advanced lung cancer. They can shrink the cancer or stop it growing and

so can help to reduce symptoms and keep you well for longer. Biological therapies called erlotinib (Tarceva) or gefitinib (Iressa) are sometimes used. The best treatment for you depends on the type of lung cancer you have, where the cancer has spread to, and the treatment you have already had, as well as any other medical conditions you might have.

Treating a blocked airway

If the cancer is blocking, or partly blocking, an airway and making you breathless your doctor may suggest one of several different treatment options to relieve the blockage.

Treating fluid on the lung (pleural effusion)

The treatment for a pleural effusion is to drain the fluid off the lung. Under local anaesthetic, the doctor puts a drainage tube into your chest through a small cut. The tube is connected to a bottle or a bag. If there is a lot of fluid it may take a day or two to drain, during which time you stay in hospital.

Treating superior vena cava obstruction (SVCO)

The vena cava is a large vein that carries blood from the brain, head and arms back to the heart. If cancer presses on or blocks this vein, it can cause swelling in the face. Treatments aim to reduce the blockage and relieve symptoms. You may have steroids or you might have chemotherapy or radiotherapy. Sometimes doctors put a metal sleeve (stent) inside the vein to keep it open.

Treating breathlessness due to a blocked airway

Sometimes, people with lung cancer develop a blockage in one of the main



airways. This is due to a growing tumour and can cause difficulty breathing. There are several ways of treating breathlessness caused by a blockage. Treatment may be

- Radiotherapy
- Burning some of the tumour away with an electric current or laser beam
- Freezing some of the tumour away with a cold probe
- Radiofrequency ablation
- Photodynamic therapy but this is not common

Airway stents

If your airway is being squashed closed by pressure from outside it, your doctor may be able to use a stent to hold it open. Some stents are rigid, plastic tubes. The type of stent used most often to keep an airway open looks like a tiny umbrella. It is put in to your airway under general anaesthetic.

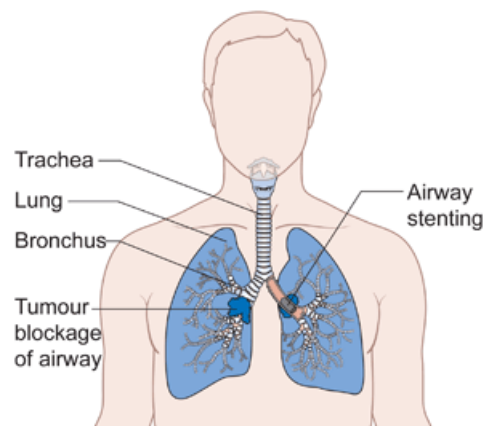


Diagram showing an airway stent
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What to ask your doctor about advanced lung cancer treatment

- Is my breathlessness likely to be caused by a blocked airway?
- Can I have laser treatment as an out patient?
- What are the side effects of laser treatment?
- What will happen if the cancer grows back again?
- Can I have a stent put in as an out patient?
- Will I be able to feel the stent?
- Now my cancer has come back, what treatment do you recommend for me?
- What will the treatment do for me?
- What are the side effects likely to be?
- Are there any experimental treatments or trials you would recommend for me?
- Are there any trials for lung cancer going on at this hospital?
- Is there a counsellor here I could talk things through with?
- What will happen if I decide not to have treatment?

Follow up for lung cancer

After your treatment has finished, your doctor will want you to have regular check ups. Your doctor will usually examine you and listen to your chest. They will ask how you are feeling, and whether you have had any new symptoms. You may also have chest X-rays, CT scans, ultrasound scans or blood tests at some visits.

How often you have appointments depends on what treatment you've had and how well it has worked. You might go to the hospital or see your GP or specialist nurse. At first your check ups will be every



few months. If all goes well, they will gradually become less frequent. If you are worried, or notice any new symptoms between appointments, you must let your doctor know straight away. You do not have to wait for your next appointment.

If you have symptoms due to advanced cancer, you might see a specialist nurse or palliative care team regularly. They may visit you at home. They will check to make sure your symptoms are as well controlled as possible. And advise you about any practical help and support you and your family need.

Many people find their check ups quite worrying. If you are able to share your worries, they may not seem quite so bad. It is quite common nowadays for people to have counselling after cancer treatment. There is more information about counselling in the 'coping with cancer' section of CancerHelp UK.

Lung cancer research

All treatments must be fully researched before they can be adopted as standard treatment for everyone. This is so that we can be sure they work better than the treatments we already use. And so we know that they are safe.

First of all, treatments are developed and tested in laboratories. Only after we know that they are likely to be safe to test are they tested in people, in clinical trials.

Researchers are looking into the causes, prevention, screening, diagnosis and staging of lung cancer. They are also researching treatments including radiotherapy and chemotherapy, biological therapies and treating symptoms. Other research is

focusing on quality of life for people with lung cancer and on symptoms that could show a cancer has come back.

What to ask your doctor about lung cancer treatment

- What can you tell me about the stage of my cancer?
- What can you tell me about the grade of my cancer?
- What sort of treatment do I need? Is there any choice of treatments?
- For how long will I be having treatment?
- Could you arrange for me to have a second opinion?
- How often will you want to see me when my treatment is finished?
- What will happen at my follow up appointments?
- What should I do if I am worried between appointments?



Notes

More information

For more information about lung cancer, visit our website
<http://cancerhelp.cancerresearchuk.org>

You will find a wide range of detailed, up to date information for people affected by cancer, including a clinical trials database that you can search for cancer trials in the UK. You can view or print the information in a larger size if you need to.

For answers to your questions about cancer call our Cancer Information Nurses on **0808 800 4040** 9am till 5pm Monday to Friday

Adapted from Cancer Research UK's Patient Information Website CancerHelp UK in April 2011. CancerHelp UK is not designed to provide medical advice or professional services and is intended to be for educational use only. The information provided through CancerHelp UK and our nurse team is not a substitute for professional care and should not be used for diagnosing or treating a health problem or disease. If you have, or suspect you may have, a health problem you should consult your doctor. © Cancer Research UK 2011. Cancer Research UK is a registered charity in England and Wales (1089464) and in Scotland (SC041666).