

Patient information from BMJ

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Lung cancer (non-small-cell)

It can be devastating to find out that you or someone close to you has lung cancer. You will have to make some important decisions about treatment. This information is to help you understand some of the choices ahead.

You can use our information to talk to your doctor and decide which treatments are right for you.

What happens in lung cancer?

When your body's cells are healthy they divide, grow, and are replaced in an orderly way. But when you get cancer, your cells grow too quickly and don't develop properly. Lung cancer usually starts in your airways. Abnormal cells form a lump called a tumor, which slowly gets bigger.

Nearly all types of lung cancer can spread to other parts of your body and form more tumors. These are called secondary tumors or metastases. Treatments for lung cancer are improving, but many people still die from it, especially if the cancer is at an advanced stage.

Doctors divide lung cancer into two kinds, based on what the cancer cells look like under a microscope.

Most people with lung cancer get a type called non-small-cell lung cancer (NSCLC). But about 15 in 100 people who have lung cancer get small-cell lung cancer. Small-cell lung cancer spreads more quickly. This information is about treatment for non-small-cell lung cancer.

Smoking is the cause of most lung cancers. Other causes include exposure to other people's tobacco smoke ("second-hand" or "passive" smoking), working in industries where you breathe in chemicals like asbestos, and long-term exposure to radon gas.

Stopping smoking can be hard, even when you know it is seriously affecting your health. For information on stopping smoking, see our leaflet: **Stopping smoking**.

Screening for lung cancer

The US Preventive Services Task Force (USPSTF) and the National Comprehensive Cancer Network (NCCN) both recommend screening for people who are considered at high risk of

Lung cancer (non-small-cell)

developing lung cancer. This includes people who have smoked for many years or heavy smokers who stopped smoking less than 15 years ago.

The screening uses low-dose computerized tomography (CT) scanning to look for tumors in the lungs. If you are concerned about lung cancer, you can ask your doctor if screening is available where you are.

What are the symptoms?

The most common symptoms of lung cancer are coughing and breathlessness. These are common symptoms of many illnesses, but with lung cancer they don't get better over time.

It's important to see a doctor if you have a cough or breathing problems that last longer than a normal cold or chest infection. There are several other symptoms:

- You may sometimes cough up blood.
- If a tumor is blocking your airways, you may be prone to chest infections, such as bronchitis and pneumonia.
- You might start to lose weight without trying.
- If your lung cancer has spread, you may have chest pain, hoarseness when you speak, or difficulty swallowing.
- If the cancer has spread to your bones, you may have pain in your arms, legs, or back.

If you have a cough that has lasted more than a few weeks, your doctor should refer you for a chest x-ray. But your doctor might also refer you for a chest x-ray if you have any of the other symptoms.

If the x-ray shows a tumor, you should be referred to a specialist in treating lung cancer. If it doesn't show a tumor, you may still need to see a specialist or have more detailed tests to rule out cancer for sure.

Doctors classify cancer by stages. A cancer stage is a number that gives an idea of how much the cancer has spread. This number is important, because it makes a difference to how your cancer is treated.

Stage 1: The cancer is only in the lung.

Stage 2: The cancer is small but has spread to the areas closest to the affected lung.

Stage 3: The cancer has spread to other nearby places in the chest. Stage 3 can also mean that there is more than one tumor in the lung.

Stage 4: The cancer has spread to another lobe of the lung from where it started, or to other parts of the body, such as the liver or brain.

What treatments work?

The main treatment for lung cancer, where possible, is surgery to remove the tumor. You may also have radiation therapy, chemotherapy, or both, to kill any remaining cancer cells. But not all lung cancers can be treated with surgery.

Lung cancer (non-small-cell)

The treatment you have will depend on:

- what type of lung cancer you have
- what stage your cancer is at
- your general levels of health and fitness.

The treatment you have should also depend on what treatment you want.

You will be treated by a team including a specialist cancer doctor, called an oncologist. Your doctors should explain all the treatment choices to you and be sure that you understand them.

Your doctor should also offer you the chance of a second opinion if you want one, and should respect the decisions you make about your treatment.

Surgery

In general, surgery is the most suitable treatment if you have a small tumor that has not spread. It's the first choice of treatment for non-small-cell lung cancer at stage 1 or stage 2. Some stage 3 cancers are also operable.

There are various reasons why some cancers cannot be treated with surgery. For example, if the tumor is close to your heart or to an important blood vessel or your windpipe, your surgeon may decide that an operation is too dangerous and recommend another type of treatment.

In the operation, the surgeon will remove part or all of the affected lung. The type of operation you have will depend on where in the lung your tumor is and how big it is.

Whether you can have surgery depends partly on your general health and fitness. You'll need tests on your lungs to see how well they work.

They need to work well enough that you can breathe without the part of the lung the surgeon is going to remove. Your doctor will also check that your heart is strong enough for the operation.

As with any kind of surgery, complications can happen with surgery for lung cancer, so it's important to ask your doctor about the risks.

How quickly you recover will depend on your age, the type of operation you've had, how your lungs are working, and the stage of your disease.

You may be in a lot of pain right after your operation. But good pain relief can make you more comfortable. Don't be afraid to ask for more medication if you're still in pain.

Try to move about as soon as possible, even if it's just walking to the end of the room and back or stretching your legs in bed. This will help keep your blood moving and reduce the chances of a clot forming in one of your blood vessels.

Chemotherapy

Chemotherapy means taking medications that kill cancer cells. You might have chemotherapy as a treatment after surgery, or if your cancer is not operable you might have it instead of surgery. You might have chemotherapy alone, or with radiation therapy.

Chemotherapy for lung cancer is usually given through a needle into your vein. You will need to go to a clinic to have this treatment. You might also take chemotherapy as pills, either at the clinic or later at home. Each course of treatment lasts a few days.

Chemotherapy drugs can have various side effects. Your doctor will explain to you what side effects you should expect. Some of the more common side effects include nausea and vomiting, infections, tiredness, and diarrhea.

You may be able to take extra drugs to help with some of these side effects: for example, you may be able to take drugs called anti-emetics that can help reduce nausea and vomiting. Some, but not all, chemotherapy drugs can make your hair fall out (although it will grow back).

Radiation therapy

Radiation therapy can be used in several ways. You might have it before or after surgery, or along with chemotherapy. You may also have radiation therapy if you are not able to have surgery.

Radiation therapy uses high-energy x-rays to kill lung cancer cells and to shrink tumors. The radiation therapy goes to your chest area.

When you have this treatment, you lie inside the radiation therapy machine and keep very still while you have the therapy. It only takes a few minutes each time and it does not hurt. You will probably need to have the treatment on most days for 6 or 7 weeks.

The most common side effect after radiation therapy is irritation or swelling in your throat or lungs. This is called esophagitis. This can make it painful to eat or swallow and can cause indigestion, but it can be treated with drugs that reduce the swelling.

What will happen to me?

The outlook for people with lung cancer is improving. The type of lung cancer you have and how early it was found will affect what happens to you. The kind of treatment you have and the way you decide to live with your cancer will also make a difference.

Predicting what will happen to people with lung cancer is hard. But, with treatment, up to two-thirds of people with early-stage lung cancer are still alive five years later.

Sadly, though, most people with lung cancer are diagnosed only when the disease is advanced and it has already spread either to tissues nearby or around their body. This makes it harder to cure.

Whatever stage your cancer is at, you will want to discuss with your oncologist what might happen in your future.

Lung cancer (non-small-cell)

Wherever possible, your treatment should be designed to help you get what you want out of life. You may wish to spend time with friends or family, or you may want to stay as active or independent as possible.

Your doctors should respect your priorities and help you choose the treatments that you feel are right for you.

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