

Lung cancer: Understanding side effects of radiotherapy

The following information is provided by **Radiotherapy UK**, a charity dedicated to improving radiotherapy treatment throughout the UK.

Radiotherapy for lung cancer can cause side effects. These can happen during treatment, soon after, or much later after treatment has finished. Early (sometimes called acute) side effects happen during and soon after radiotherapy. Everyone is different so it is not possible to say exactly when side effects will start, end, or how severe they will be. The best advice is to talk to your team if you are concerned about anything.

You might have side effects or symptoms not listed here, because everyone is different. They may also be caused by a different part of your cancer treatment. Research and support for side effects and late effects of radiotherapy is growing. Ask your treatment or clinical team if you need more support or have any side effects at all.

How likely am I to get early side effects?

Before treatment you will discuss and sign a consent form with your clinical oncologist or therapeutic radiographer. They will tell you what to expect, and you can ask questions and discuss any concerns you have about treatment effects. It's important to know what you are consenting to and can help to take someone with you.

When you consent to treatment, you are saying you understand that you have a chance of getting early and late side effects. Your team will use words like **Expected, Common, Less Common and Rare**.

This table shows what these words mean.

Wording on the consent form	% chance of side effect
Expected	50 to 100%
Common	10 to 50%
Less common	Less than 10%
Rare	Less than 1%

Early side effects (during or soon after treatment)

- **Feeling very tired or fatigued:** You might feel very tired during and after your treatment. It's important to get plenty of rest but sometimes you will still feel really tired, even with lots of sleep. Some tiredness can be caused by having cancer and having cancer treatment, and some can be caused by travelling to and from hospital every day for treatment.
- **Swallowing issues: If your treatment site is close to your food and windpipe** you might feel like you have heartburn, making swallowing hard. Soft foods and avoiding hot or spicy foods can help. Medications can also help and can be given by your doctor or specialist team. In rare cases it might be necessary to insert a feeding tube if swallowing becomes a big problem.
- **Skin reactions:** You might notice a change in colour, swelling, itching, or changes in the texture of your skin where you're treated. For people with lighter skin tones these changes can be pink, red or darker than the surrounding area. People with brown and black skin tones might have colour changes such as maroon, purple, yellow or grey pigment changes. Or the skin can look darker than the surrounding area. These changes usually improve after treatment, but this can take 4 to 6 weeks in some cases.
- **Hair loss:** you might lose hair in the area where you are treated. Often, this grows back over time.

- **Breathing:** You may experience a shortness of breath and a cough which is due to temporary inflammation of the lungs.
- **Feeling sick:** This is common but usually mild. It is less common to be sick but this can happen.

Rare Side effects

- **Blood in mucous:** This is a rare side effect but you might notice blood when you cough.
- **Hospitalisation:** It can sometimes be necessary if you are struggling to be admitted to hospital to help manage your symptoms. This is rare.

How to feel better during or soon after treatment

Here are some ideas you can try to make you feel better.

- **For swallowing issues:** Try soft foods that are high in protein and energy. Avoid foods that are spicy or hot (temperature) and take advice from your treatment team. Some people find ice cream soothing and foods that are warm (temperature) can help. It can also help to eat smaller meals more often. Ask for an appointment with a dietician if you need more support with eating.
- **Skin reactions:** Your treatment team can suggest creams to soothe your skin. Sometimes, extra care is needed if the skin breaks down in the treatment area. Wear loose clothing around the treatment area and keep it out of the sun.
- **Drinking fluids:** Drinking plenty of fluids such as water, juice and squash can help with fatigue and tiredness caused by your treatment. It can also help flush out toxins in your body caused by treatment. You can try diluted juice if you don't like water.
- **Keeping active:** Gentle movement can help you feel better, both during and after treatment. Your treatment team can tell you what is safe for you to do.

- **Alcohol use:** Please follow the NHS guidelines on safe drinking levels and any instructions you get from your team on what is right for you, your diagnosis and your treatment. If in doubt, please ask your team.
- **Sexual changes:** Talk to your team if you are experiencing issues with sex and cancer and they can offer advice.
- **Stop smoking:** If you are looking to stop or reduce smoking, there are services available to help you.
- **Rest and care:** Take breaks, get plenty of sleep, and be kind to yourself during treatment.
- **Seek support:** Speak to other patients and find support groups who understand what you are going through, they can help support you.

Lung cancer: Understanding late effects of radiotherapy

Radiotherapy for lung cancer can cause late side effects. They might happen once, carry on over the long term or come and go. They can even begin many years later. Sometimes they cannot be cured, but it might be possible to manage them.

How likely am I to get late side effects?

Before treatment you will discuss and sign a consent form with your clinical oncologist or therapeutic radiographer. They should tell you what to expect, and you can ask questions and discuss any concerns you have about late effects. It's important to know what you are consenting to and can help to take someone with you.

Possible late side effects

- **Breathing difficulty:** Some people might find it hard to breathe, have a cough, or get a fever 1 to 6 months after treatment. Medicines from your doctor can help with these symptoms. It is less common but in some cases this can become a long term issue requiring the need for oxygen so please speak to your medical team if this is an issue.
- **Lung fibrosis:** This is when the lungs become scarred. It usually doesn't cause major problems and its effect on breathing is often small. The scarring can be seen on an X-ray picture or CT scan.
- **Irritation of food pipe:** The tube your food passes down may become sore and you may feel food is getting stuck. It is less common but you can get scarring here that causes a narrowing of the tube.
- **Heart:** There is a risk of damage to your heart but this depends on where the treatment is directed. Ask your clinical team if this applies to you.
- **Bone fractures:** Bones in the treatment area can be more likely to break.
- **Cancer-related fatigue:** You might find you still have fatigue after your treatment has finished. For some people this can go on for months or years.

Rare late effects

- **Second Cancer:** There is a very small chance that you could develop another type of cancer. This is rare, and depends on lots of different factors like age, area treated and radiation dose.
- **Hypothyroidism:** This is where the treatment can affect the thyroid gland causing a hormone deficiency, this may require you to take medications.
- **Reduced spleen function:** This can lead to an increased risk of infection. This is where the spleen is affected by the radiation. When this happens it can lower your immunity (ability to fight infection) and may require additional vaccinations and long-term antibiotics to help.

- **Spinal cord myelitis:** Radiotherapy may cause inflammation of the nerves in the spinal cord. This can lead to muscle weakness or changes in sensation.
- **Lung infections:** You can become more prone to lung infections long term.
- **Arm weakness or numbness:** You might feel weakness or numbness in your arm if the treatment is near the top of your lung. This happens because the nerves that control your arm can be affected.
- **Risk of organ damage:** This is rare but the treatment can cause damage to the lungs, heart, food pipe, windpipe including a hole (perforation) or an abnormal connection between two body parts (fistula).

What can help with these late effects?

If you have late side effects, doctors can help with different treatments:

- **Keeping active:** Gentle movement can help you feel better, both during and after treatment. Your medical team can tell you what is safe for you to do.
- **For breathing difficulty:** Medicines prescribed by your treatment team can help you breathe easier.
- **For lung fibrosis:** Your doctor might give you treatments or exercises to help with breathing.
- **For arm weakness or numbness:** Physical therapy or exercises can help strengthen your arm. There are treatments that may help if the nerves are affected speak to your medical team.
- **For spinal cord damage:** If you experience numbness, a loss of sensation and/or strength in your arms or legs and any incontinence (losing control over when you wee and/or poo) then tell your medical team; or go to your local accident and emergency department straight away.
- **Monitoring rare side effects:** Talk to your medical team if you notice any changes, catching symptoms early can make treatment easier.

- **Managing cancer-related fatigue:** Food and drink, keeping active, keeping a fatigue diary, medicines like steroids and physiotherapy may all be options for managing fatigue. Speak to your doctor or medical team for advice.
- **Drinking fluids:** Drinking plenty of fluids such as water and squash can help with fatigue and tiredness caused by your treatment. You can try diluted juice if you don't like water.
- **Skin care:** The skin in the treatment area will always be more sensitive to the sun. Always protect it by covering up and use a high factor sunblock.
- **Alcohol use:** Please follow the NHS guidelines on safe drinking levels and any instructions you get from your team on what is right for you, your diagnosis and your treatment. If in doubt, please ask your team.
- **Stop smoking:** If you are looking to stop or reduce smoking, there are services available to help you.

Always talk to your doctor or medical team about any late effects you have. Even if they are not mentioned here. Everyone is different and experiences treatment differently. There may be ways they can help you reduce or manage symptoms. The earlier these can be identified the better.
