



Radiation Therapy for Lung Cancer

There are two main ways to treat lung cancer with [radiation therapy](#):

- External beam radiation therapy (EBRT): The use of high-energy x-rays that are aimed at the tumor and harm the DNA of cells. This kills the cancer cells by stopping them from reproducing.
- [Internal radiation therapy](#) (brachytherapy): A radioactive source that is placed inside your body either in or near the tumor to kill the cancer cells.

Radiation therapy can be used:

- Before [surgery](#) to shrink the tumor.
- After surgery to kill any cancer cells left in the lungs.
- As the main treatment and given with chemotherapy.

What should I expect before treatment?

Before starting radiation therapy, you will have a [consultation](#) (meeting) with your radiation oncologist (cancer doctor) to decide if radiation is right for you and to review the [treatment consent](#) paperwork. If you plan to have radiation, you will have a CT simulation. During the simulation, you will be placed in the position you will be in for your treatments and pictures will be taken of the inside of your body. [Immobilization devices](#) (materials that help you stay still during treatment) along with [tattoos](#) (permanent marks on your skin) are often used to get you in the exact same position for each treatment. If [respiratory gating](#) (a tool used to guide the delivery of radiation) is going to be used for your treatment, it will be set up during the simulation.

After the CT simulation, a treatment plan will be made for you. During the treatment planning process, your radiation oncologist will decide [how many treatments](#) you will get and how often. There are many people on [your radiation care team](#), some you will meet, and others you won't.

What side effects can I have?

Radiation is used to destroy cancer cells but can also hurt normal cells in the treated area. The harm to these normal cells is the cause of common side effects of radiation treatment. You will likely see your radiation treatment team once a week while you are getting treatments. This visit gives you a chance to ask questions, talk about side effects, and learn how to manage the side effects. If you start having a new or worsening side effect, you should call your treatment team. Each patient is different so you may not have all the possible side effects.

Side effects from radiation are cumulative, meaning the more treatments you have, the higher your risk for side effects. The possible side effects of radiation therapy are also directly related to the area of the body that is being treated. Most patients do not have any side effects until a few weeks into their treatment. Some side effects go away a few weeks after treatment is done and others are more long-term.

Short-Term Side Effects

Some of the most common short-term side effects of radiation therapy for lung cancer are:

- [Skin irritation](#): The skin in the treatment area may become red, irritated, dry, or sensitive. This may

start to look like a sunburn. Treat the skin gently to avoid more irritation, and bathe carefully, using only warm water and mild soap. Do not use scented lotions or soaps, and avoid sun exposure, as these may make it worse.

- **Esophagitis** and **Mucositis**: Esophagitis is inflammation of the esophagus and mucositis is inflammation of the inside of the mouth. Healthy tissues may become inflamed leading to discomfort, pain, and ulcers. This tends to start 2-3 weeks into treatment and starts to get better about 2 weeks after treatment is done. Your care team may prescribe medications and mouthwashes to manage these side effects.
- **Trouble Swallowing**: This is caused by a sore throat and mouth, or inflammation. Your treatment team can prescribe pain medications and help you manage eating issues. If the pain stops you from eating and drinking, a feeding tube may be used during treatment to maintain your nutrition and prevent weight loss.
- **Taste changes**: This can include a metallic taste in your mouth and not wanting to eat certain foods. This often gets better over time after therapy ends but can last for a year or longer.
- **Alopecia (Hair Loss)**: This can happen in the area where you got radiation. Hair often starts to regrow a month or so after treatment. Your hair might not grow back exactly as it was before treatment and for some, the hair loss is permanent.
- **Fatigue**: Fatigue is feeling very tired or exhausted. This is common and tends to start a few weeks into treatment. Fatigue often gets better slowly over the weeks and months after treatment.
- **Nausea**: Nausea is when you feel sick to your stomach and may even be vomiting. This is common and may start during or right after treatment and last for weeks after treatment ends. If you feel sick or are vomiting, let your care team know so they can help you manage this side effect.

Long-Term Side Effects

Long-term effects can happen months to many years after cancer treatment and your risk depends on the area of the body being treated. This can also depend on the radiation techniques that were used. Some of the long-term side effects of radiation to the lungs are:

- **Radiation Pneumonitis**: Inflammation of the lungs tends to happen within a few months of treatment. It can cause coughing and shortness of breath. For some people, the symptoms go away on their own, but others may need medication.
- **Pulmonary Fibrosis**: Inflammation that happens because of untreated pneumonitis and can cause scar tissue to form in the lungs. The most common symptoms are cough, shortness of breath, and wheezing.
- **Swallowing Problems**: This happens because of scar tissue in the esophagus and it starts months to years after treatment. Tell your care team about any changes in swallowing or new or worsening heartburn.
- **Heart Disease**: Symptoms of heart disease may not appear for years or even longer after radiation is done. It is important to let your provider know if you have chest pains at any time after getting radiation.
- **Secondary Cancer**: These are cancers that develop after radiation treatment. Many current radiation techniques limit this exposure, but it is not always possible to protect all healthy tissues.

There are ways to treat many of these side effects, such as medications and therapy. After treatment, talk with your oncology team about a survivorship care plan, which can help you manage the transition to survivorship and learn about life after cancer. You can make your own survivorship care plan using the [OncoLife Survivorship Care Plan](#).

Interested in learning more about what your radiation therapy will look like? We have a video that explains

what to expect during your radiation therapy that can help answer your questions.

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