



TYPES OF LUNG CANCER

There are two main types of lung cancer, **non-small cell lung cancer** and **small cell lung cancer**. These names refer to how a cancer looks under the microscope. Non-small cell lung cancer is the most common type of lung cancer and accounts for 84% of cases.

There are different types of non-small cell lung cancer, including:

- Adenocarcinoma - a cancer that forms in the outer parts of the lung.
- Squamous cell carcinoma - a cancer that forms from a cell lining the airway.
- Large cell carcinoma - a kind of non-small cell lung cancer, but the cell it starts from may not be known.

Small cell lung cancer is less common and accounts for 14% of cases. Although the cells are small, they multiply quickly and can form large tumors that may spread throughout the body. Small cell lung cancer is almost always due to smoking.



TREATING LUNG CANCER

Lung cancer treatment depends on several factors, including the type, the mutations specific to the cancer, the stage of the lung cancer and your overall health. Treatment of lung cancer often requires input from radiation oncologists, medical oncologists, thoracic surgeons and lung doctors (pulmonologists).

Radiation Therapy

Radiation is a high-energy X-ray that can be used to treat lung cancer noninvasively. It passes through the chest to treat lung cancer and can be combined with surgery, chemotherapy or both depending upon the circumstances. Radiation therapy works within cancer cells by damaging their ability to multiply. When these cells die, the body naturally eliminates them.

In early-stage lung cancer, surgery has been the standard treatment. However, in patients unable to tolerate surgery, focused radiation, called stereotactic body radiation therapy (SBRT) or stereotactic ablative radiotherapy (SABR), is a good treatment option. For large tumors or those involving lymph nodes, radiation (often combined with chemotherapy) may replace surgery as the main treatment. For more advanced cancers, your doctors may recommend radiation to manage symptoms such as cough, shortness of breath, pain or bleeding.

Medical Therapy

Medical oncologists specialize in treating lung cancer using various drugs. Chemotherapy means drug treatment, but there are many different kinds of medications that can be used to treat lung cancer. New research is helping oncologists learn which drugs may be most effective, and the side effects differ for each one.

Often, chemotherapy is combined with radiation therapy to make the radiation more effective. However, such combined treatment (chemoradiation) can also increase the side effects of treatment.

Other types of medications including targeted therapy or immunotherapy may be a part of your treatment. Targeted therapy are drugs that work on specific

types of cancer cells. Immunotherapy are drugs that work with the body's immune system. These different treatments have their own side effects. Ask your medical oncologist about what drugs may be best for you.

Surgery

Surgery is often a key part of lung cancer care. Even before treatment, surgery may be helpful in diagnosis and finding whether the cancer has spread to lymph nodes in the chest. This type of surgery is part of tumor staging or understanding how advanced the cancer may be. In early-stage tumors, surgery by itself can be curative. Your surgeon may remove part of the lung or the entire lung around the cancer. The amount of lung removed will vary based upon the tumor's location, your health and other factors. If there are no signs of spread, additional treatment is often not needed. In more advanced tumors, surgery is sometimes replaced by radiation and chemotherapy or can be combined with these treatments. Ask your surgeon or other doctors whether your tumor is early or advanced and whether surgery will be helpful for you.

EXTERNAL BEAM RADIATION THERAPY

External beam radiation therapy (also called radiotherapy) is the safe delivery of high-energy X-rays to your cancer. A linear accelerator focuses the radiation beam to a precise location in your body for an exact period of time. Radiation is given in a series of daily treatments, Monday through Friday, for several weeks. In small cell lung cancer, two treatments may be given each day. The full course of treatment varies but can span from one day to seven weeks. Before beginning treatment, you will be scheduled for a planning session to map out the treatment area. This procedure is called a simulation. You will undergo a CT scan to design your treatment and small tattoos will be made on the skin to make sure your treatments are accurate. Different techniques can be used to give radiation for lung cancer.

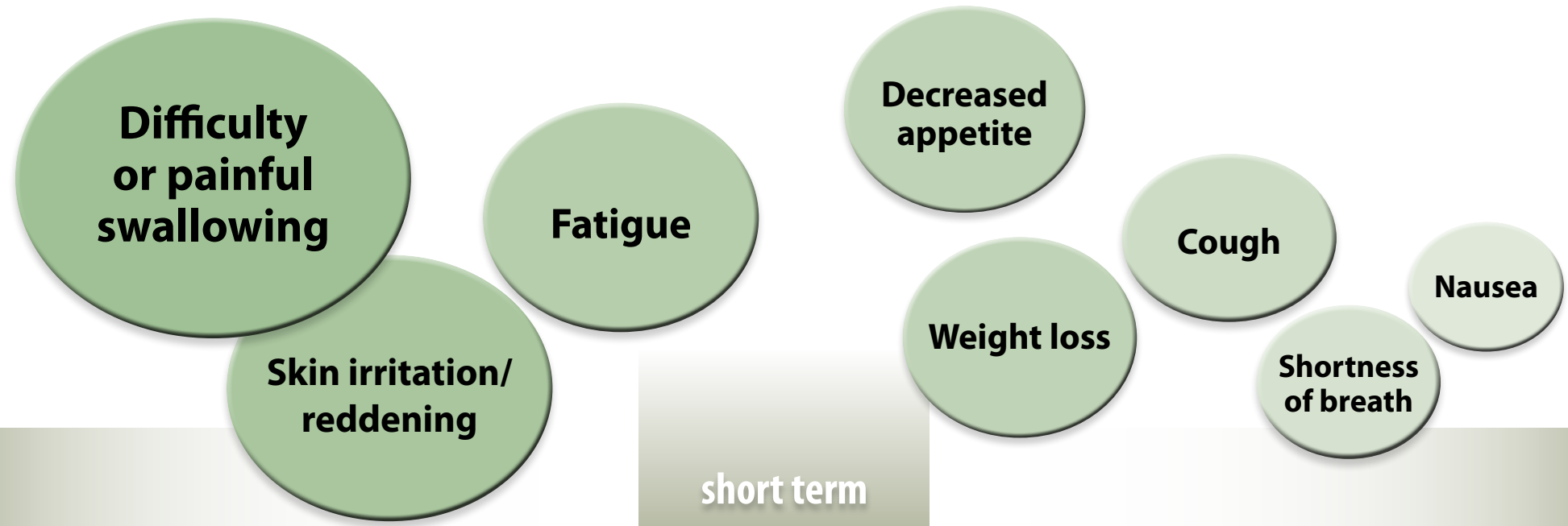
- Three-dimensional conformal radiotherapy (3-D CRT) combines multiple radiation treatment fields to deliver precise doses of radiation to the lung tumor. Radiation oncologists are able to tailor each of the radiation beams to focus on the tumor while protecting nearby healthy tissue.

- Intensity-modulated radiation therapy (IMRT) is a specialized form of 3-D CRT that modifies the radiation by varying the intensity of each radiation beam.
- Stereotactic body radiation therapy (SBRT) is a specialized form of radiation that delivers high doses of radiation to small and very precisely defined targets over a shortened course of therapy, usually in five treatments or less.
- Proton beam therapy is a type of external beam radiation therapy that uses proton beams rather than X-rays, which can give less radiation to normal tissue. The benefits of proton beam therapy over other external beam radiation therapies are still being studied.

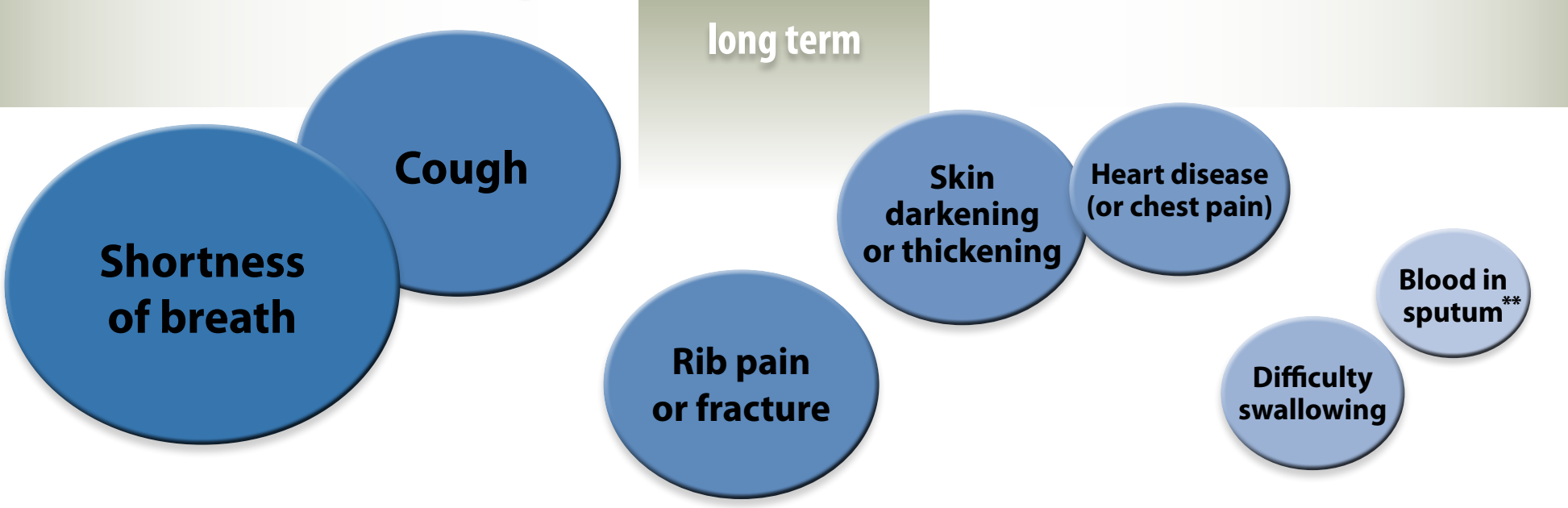
CARING FOR YOURSELF DURING TREATMENT

Cancer treatment can be difficult. You may have many issues to cope with. Ask your oncology team, family and friends for help.

- Get plenty of rest during treatment, and don't be afraid to ask for help.
- Follow your doctor's orders. Your doctor may ask you to call if you develop a fever of 101° F or higher.
- Ask your health care team questions.
- Tell your doctor about any medications, vitamins or supplements you are taking to make sure they are safe to use during radiation therapy.
- Eat a balanced diet. A dietician may be able to help you if you have issues with taste or eating.
- Treat the skin exposed to radiation with special care. Wear a shirt when in the sun, avoid hot or cold packs, only use lotions and ointments after checking with your doctor or nurse, and clean the area with warm water and mild soap.



← **more likely** **possible side effects** **less likely** →



*Larger bubbles show higher likelihood of occurrence. This list doesn't represent all of the possible side effects. Please talk to your doctors about your specific diagnosis.
 ** This side effect is very uncommon <5%



ABOUT THE RADIATION ONCOLOGY TEAM

Radiation oncologists are cancer doctors who also oversee the care of each patient undergoing radiation treatment. Other members of the radiation oncology team include radiation therapists, radiation oncology nurses, medical physicists, dosimetrists, social workers and nutritionists. To locate a radiation oncologist in your area, visit www.rtanswers.org.

ABOUT ASTRO

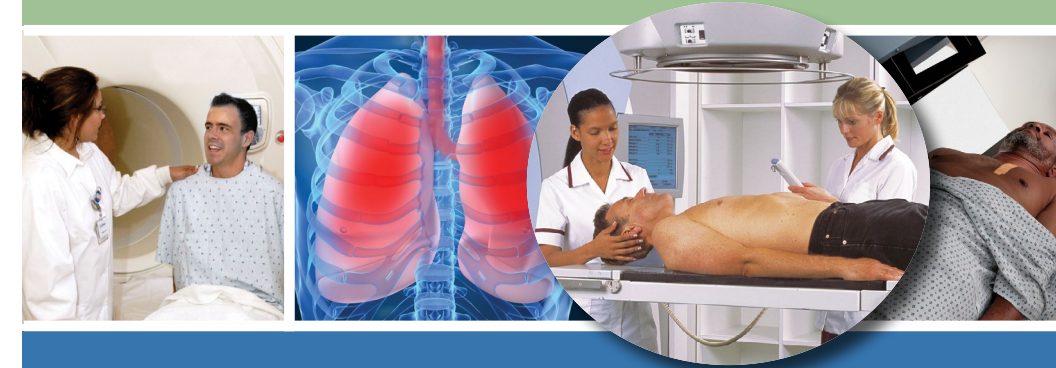
The American Society for Radiation Oncology is the premier radiation oncology society in the world with more than 10,000 members who specialize in treating cancer with radiation therapies. ASTRO's mission is to advance the practice of radiation oncology by promoting excellence in patient care, promoting research and disseminating research results. Visit www.astro.org for more information.

AMERICAN SOCIETY FOR RADIATION ONCOLOGY
 251 18th Street South, 8th Floor, Arlington, VA 22202
 Phone: 703-502-1550 • Fax: 703-502-7852
www.astro.org • www.rtanswers.org



© ASTRO 2020

Radiation Therapy for Lung Cancer



Lung cancer is the second most common cancer and the leading cause of death from cancer each year in both men and women. According to the American Cancer Society, approximately 230,000 Americans will be diagnosed with lung cancer annually. Cigarette smoking is the most common cause of lung cancer. However, exposure to asbestos, radon, environmental factors and secondhand smoke can cause lung cancer as well. Genetic factors can also affect risk for lung cancer.

