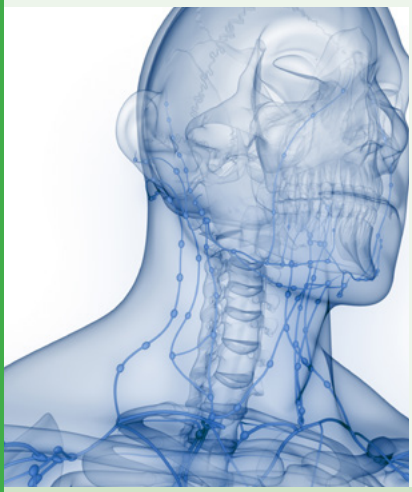
RADIATION THERAPY FOR LYMPHOMAS



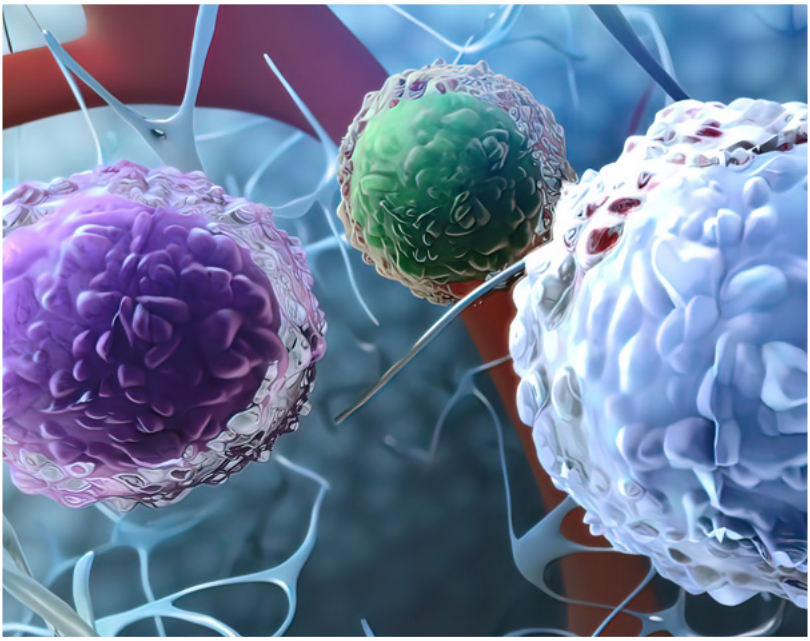
ASTRO

AMERICAN SOCIETY FOR RADIATION ONCOLOGY

RADIATION THERAPY FOR LYMPHOMAS

contents

HODGKIN LYMPHOMA (HL)	2
NON-HODGKIN LYMPHOMA (NHL)	2
STAGING OF LYMPHOMA	3
TREATMENT OPTIONS FOR LYMPHOMA	4
UNDERSTANDING RADIATION THERAPY	4
EXTERNAL BEAM RADIATION THERAPY	5
BIOLOGIC THERAPY	6
CARING FOR YOURSELF DURING TREATMENT	7
SIDE EFFECTS	8
SUGGESTED QUESTIONS TO ASK YOUR TEAM	10



The lymphatic system is a network of tiny vessels extending throughout the body. Scattered along these vessels are lymph nodes, which are often adjacent to arteries and veins. The lymphatic vessels carry a clear fluid called lymph from the extremities and organs back to the heart for circulation. The primary job of the lymphatic system is to fight infection and disease. A tumor of the lymphatic system is called lymphoma.

There are two main types of lymphoma: Hodgkin lymphoma and non-Hodgkin lymphoma. They are further classified into subtypes.

HODGKIN LYMPHOMA (HL)

- Hodgkin lymphoma accounts for 10% of all lymphomas diagnosed in the United States, with the majority presenting in two age groups: 15-30 years of age and then another in adults 55 years or older.
- An estimated 8,500 people will be diagnosed with Hodgkin lymphoma in the United States this year.
- Hodgkin lymphoma is now curable in at least 80% of patients.
- Depending on the stage, the primary treatment approach for this lymphoma is typically a combination of chemotherapy and radiation therapy.

NON-HODGKIN LYMPHOMA (NHL)

- Non-Hodgkin lymphoma is a broad term that encompasses a diverse group of lymphomas that differ from Hodgkin lymphoma. The most common subtypes diagnosed in the United States include: diffuse large B-cell lymphoma (DLBCL), chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL), follicular lymphoma, marginal zone lymphoma and mantle cell lymphoma.
- Non-Hodgkin lymphoma occurs in individuals at almost all ages, but it is uncommon in children.
- Non-Hodgkin lymphoma is nine times more common than Hodgkin lymphoma, with an estimated 80,000 people diagnosed in the United States this year.
- All types of non-Hodgkin lymphoma are treatable, and many are curable. Non-Hodgkin lymphoma is typically treated with chemotherapy, biologic therapy and/

or radiation therapy. In some types of non-Hodgkin lymphoma, a stem cell transplant may be part of treatment. Depending on your subtype and overall health, you might receive only one of these treatments or you might receive several in combination.

STAGING OF LYMPHOMA

The stage of your lymphoma helps doctors describe the extent of the disease and optimize your treatment approach.

- Stage I: Single lymph node or groups of adjacent nodes are affected.
- Stage II: Two or more nodal groups on the same side of the diaphragm (the muscle under the lungs that controls your breathing) are affected.
- Stage III: Lymph nodes above and below the diaphragm are affected or nodes above the diaphragm and your spleen are both affected.
- Stage IV: The cancer has spread outside the lymph nodes to organs such as the liver, bones or lungs. Stage IV can also refer to a tumor in another organ and/or tumors in distant lymph nodes.

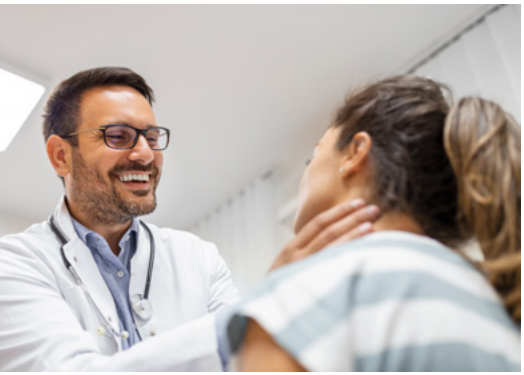
Lymphomas can also primarily arise from and/or involve the skin, brain, eye or stomach.

Talk to your physician to find out exactly which stage you have. Determining the stage and subtype of lymphoma (by microscopic examination of tissue from a biopsy and imaging) are essential steps toward customizing the best treatment for your cancer.

TREATMENT OPTIONS FOR LYMPHOMA

Treatment options depend on the subtype and stage of your lymphoma, as well as your overall health. Treatment may include chemotherapy, radiation therapy or biologic therapy, either alone or in combination. It may help to talk to several specialists before deciding on the best course of treatment for you, your disease and your lifestyle.

A radiation oncologist is a doctor who specializes in treating cancer with high-energy X-rays or other types of radiation. A medical oncologist is a doctor who specializes in treating cancer with drugs in the form of chemotherapy or biologic therapy. Some medical oncologists are also hematologists, meaning they have experience treating blood disorders.



UNDERSTANDING RADIATION THERAPY

Radiation therapy, also called radiotherapy, is the careful use of targeted radiation to kill diseased cells safely and effectively while avoiding nearby healthy tissue.

Radiation oncologists use radiation therapy to cure cancer, to control disease growth, and/or to relieve symptoms. Radiation therapy works within cancer cells by damaging their ability to grow. When these cells are destroyed by the radiation, the body naturally eliminates them. Healthy tissues can also be affected by radiation, but they are able to repair themselves in a way that cancer cells cannot.

EXTERNAL BEAM RADIATION THERAPY

External beam radiation therapy is a treatment approach that encompasses a series of outpatient treatments in which targeted radiation is delivered to areas of disease. Radiation therapy has been proven to be very successful at treating and curing the majority of lymphomas.

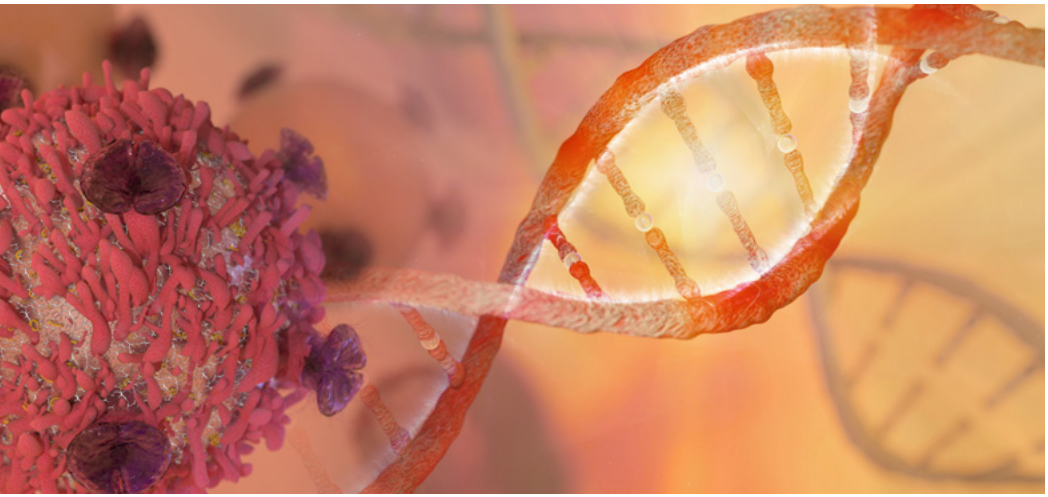
- Radiation oncologists deliver external beam radiation therapy from a machine called a linear accelerator.
- Each treatment is painless. Once the treatment is done, there is no active radiation left behind so you are not a danger to others. Treatments are usually short and typically delivered five days a week from Monday through Friday for several weeks. Sometimes only a few treatments of radiation therapy are required.
- Involved site radiation therapy is when your doctor delivers radiation only to the parts of your body known to have the cancer. Treatments are often combined with chemotherapy, which often precedes radiation.
- Your radiation oncologist may also deliver radiation to the entire body. This is called total body irradiation. It is often done before chemotherapy and a stem cell or bone marrow transplant to eliminate any remaining diseased cells.
- Certain lymphomas involve the skin and can be treated with either focal skin radiation or total skin radiation therapy.

Radiation therapy may be used alone or in combination with chemotherapy or biologic therapy. You will work with your radiation oncologist and other specialists as a team to determine which approach is best for you.

BIOLOGIC THERAPY

Biologic therapy, also called immunotherapy, works with your immune system to fight disease. Biologic therapy is like chemotherapy, but with a different approach. Chemotherapy attacks the diseased cells directly, whereas biologic therapy helps your immune system fight the disease.

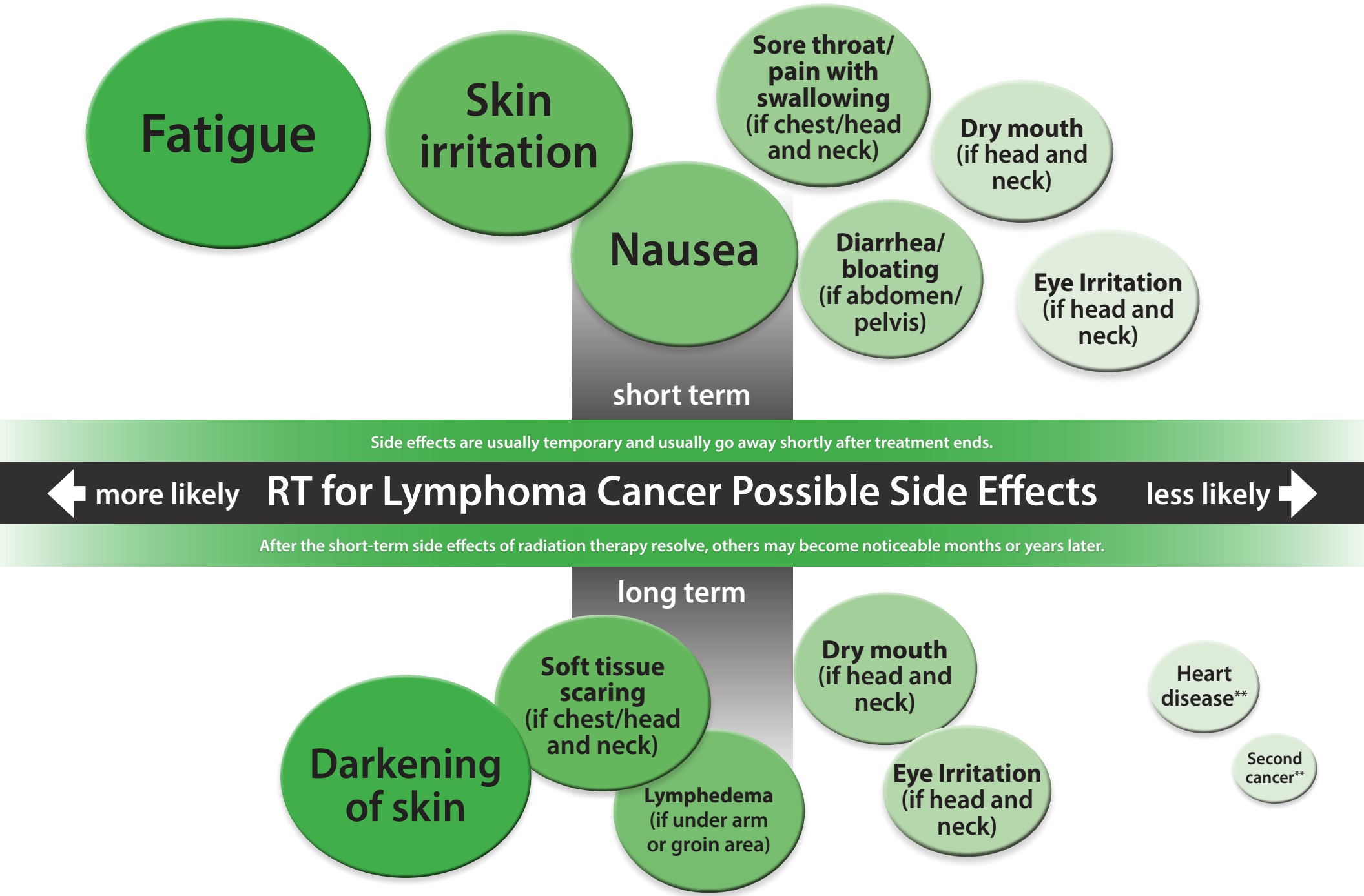
- Monoclonal antibodies work by targeting certain molecules found on the surface of cells within the body. These medications work by attaching themselves to those molecules, which causes some cells to die and makes others more likely to be destroyed by radiation and chemotherapy.
- Radiolabeled antibodies are monoclonal antibodies with radioactive particles attached. These antibodies are designed to attach themselves directly to the diseased cells and damage them with small amounts of radiation without injuring nearby healthy tissue.
- Cell therapy, like CAR-T, uses a patient's cells that are taken from the blood and engineered to target certain molecules on patient's lymphoma cells.



CARING FOR YOURSELF DURING TREATMENT

Cancer treatment can be difficult. You 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 doctors' recommendations. Ask your doctor, nurse or other member of your treatment team if you are unsure about anything or if you have questions about your treatments and side effects.
- 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 and avoid hot or cold packs. Use lotions and ointments only after checking with your doctor or nurse. Clean the area with warm water and mild soap.



*Larger bubbles show higher likelihood of occurrence. This list does not represent all of the possible side effects.
Side effects are highly dependent on the site of the lymphoma and dose of radiation therapy recommended. Please talk to your doctors about your specific diagnosis.
** Very low likelihood

SUGGESTED QUESTIONS TO ASK YOUR TEAM

What stage is the cancer?

What are the treatment options?

Are there any other physicians that I need to see?

What are the benefits, risks and alternatives of having this treatment?

What is my life going to look like (e.g., number of visits, types of visits)?

What can be done to prepare for this treatment?

How many treatments will I have?

How long will it take to get treatment started?

What are the potential short-term and long-term treatment side effects?

Who can I contact if I have questions or concerns during the treatment?

How will the cancer be monitored after treatment?

What can be done if the cancer comes back after treatment?

What kind of follow-up will I have with your team?

If you have any questions about your diagnosis, treatment or side effects, please contact your doctor or other members of your treatment team. To locate a radiation oncologist in your area, or for additional cancer treatment information, please visit www.rtanswers.org.

ABOUT THE RADIATION ONCOLOGY TEAM

Radiation oncologists are doctors who 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.

RTAnswers

ANSWERS TO YOUR RADIATION THERAPY QUESTIONS

I Have Cancer. Now What?

Receiving a diagnosis of cancer can be frightening and confusing. **RTAnswers.org** provides detailed information and resources for cancer patients and their caregivers, including:

- Treatment information by disease site.
- Videos walking you through the radiation therapy treatment process.
- Stories from patients and caregivers sharing their experiences from diagnosis and treatment to survivorship.
- A "Find a Radiation Oncologist" portal where you can search by city, state and disease site specialty.

RTAnswers

ANSWERS TO YOUR RADIATION THERAPY QUESTIONS

THE AMERICAN SOCIETY FOR RADIATION ONCOLOGY

(ASTRO) is the largest radiation oncology society in the world, with more than 10,000 members who specialize in treating patients with radiation therapies. As the leading organization in radiation oncology, biology and physics, ASTRO's mission is to advance the specialty of radiation oncology through promotion of equitable, high-quality care for people with cancer, cultivating and educating a diverse workforce, fostering research and innovation, and leading policy development and advocacy. Visit www.astro.org for more information.

AMERICAN SOCIETY FOR RADIATION ONCOLOGY
251 18th Street South, 8th Floor, Arlington, VA 22202
rtanswers@astro.org
www.astro.org • www.rtanswers.org

ASTRO
AMERICAN SOCIETY FOR RADIATION ONCOLOGY

Patient education resources are supported in part by ASTRO's Partners in Patient Education (PiPE).
For more information about PiPE visit ASTRO.org/PiPE.

© ASTRO 2023