

FACTS ABOUT NON-HODGKINS LYMPHOMA

The lymphatic system is a network of thin tubular vessels that branches out to almost all parts of the body. Scattered in between these vessels are lymph nodes. The job of the lymphatic system is to fight infection and disease. Cancer involving the lymphatic system is called lymphoma. Non-Hodgkins is one of two main types of lymphoma with Hodgkins lymphoma (or Hodgkins disease) being the other.

- Non-Hodgkins lymphoma (or NHL) refers to a variety of cancers involving the lymph system. Non-Hodgkins lymphoma can begin in any part of the body, not just the lymph nodes.
- According to the American Cancer Society, nearly 64,000 new cases of lymphoma will be diagnosed this year.
- Survival rates vary widely by cell type and stage of disease. More than 75 percent of patients with NHL live longer than a year after diagnosis; nearly 60 percent of patients live longer than five years.

RISK FACTORS FOR NON-HODGKINS LYMPHOMA

Risk factors for developing lymphoma are unknown. However, doctors believe immune system problems as well as age may increase a person's chance of developing this disease.

- Non-Hodgkins is most commonly found in people in their 60s and 70s. However, the disease can affect anyone.
- People with auto-immune disorders, including HIV and AIDS, are more likely to develop non-Hodgkins lymphoma.
- People who have received an organ transplant have a high risk of developing non-Hodgkins. This is because they must take drugs that suppress the immune system.

HELPFUL WEB SITES ON NON-HODGKINS LYMPHOMA

American Cancer Society
www.cancer.org

Leukemia and Lymphoma Society
www.lls.org

Lymphoma Information Network
www.lymphomainfo.net

Lymphoma Research Foundation
www.lymphoma.org

People Living With Cancer
www.plwc.org

LEARNING ABOUT CLINICAL TRIALS

The radiation oncology team is constantly exploring new ways to treat lymphomas through studies called clinical trials. Today's standard radiation therapy treatments are a result of clinical trials completed in the past. These organizations can help you learn more about clinical trials.

Cancer and Leukemia Group B
www.calgb.org

National Cancer Institute
www.cancer.gov/clinicaltrials

Radiation Therapy Oncology Group
www.rtog.org

ABOUT THE RADIATION ONCOLOGY TEAM

Radiation oncologists are the doctors who oversee the care of each person receiving radiation treatment. Other members of the radiation oncology team include radiation therapists, radiation oncology nurses, medical physicists, dosimetrists, social workers and nutritionists. To find a radiation oncologist near you, visit www.astro.org/patient.



ABOUT ASTRO

The American Society for Therapeutic Radiology and Oncology is the largest radiation oncology society in the world. ASTRO's mission is to advance the practice of radiation oncology by promoting excellence in patient care, promoting research and disseminating research results.



RADIATION THERAPY for NON-HODGKINS LYMPHOMA

Understanding Your Treatment Options

ASTRO

THE AMERICAN SOCIETY FOR THERAPEUTIC RADIOLOGY AND ONCOLOGY

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SIGNS AND SYMPTOMS OF NON-HODGKINS LYMPHOMA

The signs and symptoms of lymphoma are general and may also be associated with other, noncancerous conditions. Talk to your doctor about any of these problems.

- Swollen lymph nodes in your neck, underarm or groin.
- Unexplained fevers.
- Unexplained weight loss.
- Constant fatigue.
- Skin rash or itchy skin.
- Unexplained pain in the chest, abdomen, pelvis or bones.
- Drenching night sweats.

Unexplained fevers, night sweats and weight loss are known as "B" symptoms. Ask your doctor about their significance in your case.

DIAGNOSING NON-HODGKINS LYMPHOMA

Lymphoma is not just one disease. Rather, it is more than 30 types of cancer that act differently and may need special treatment. To see if you have lymphoma and what kind it is, your doctor may order some or all of the following tests.

- The doctor may order blood tests to evaluate a variety of factors, including the number of blood cells in your blood and how well your liver and kidneys are working.
- During a lymph node biopsy, your doctor will perform surgery to take out a lymph node. It will then be examined under a microscope to look for cancer.
- A bone marrow biopsy may help determine if lymphoma has spread to that part of the body.
- Your doctor may order imaging tests to see if lymphoma has spread to other organs. These tests may include X-rays or CT, PET or MRI scans.

STAGING OF NON-HODGKINS LYMPHOMA

The stage of cancer is a term used to describe its size and whether it has spread. Knowing this helps doctors plan the best treatment.

- **Stage I:** Single lymph node or non-lymph node region is affected.
- **Stage II:** Two or more lymph node or non-lymph node regions are affected on the same side of the diaphragm (the muscle under the lungs).
- **Stage III:** Lymph node or non-lymph node regions above and below the diaphragm are 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 tumor in distant lymph nodes.

TREATMENT OPTIONS FOR NON-HODGKINS LYMPHOMA

Treatment options depend on the type of lymphoma you have, the stage of the lymphoma and your overall health. Treatment may include radiation therapy or chemotherapy, either alone or in combination. Other treatments include watchful waiting and biologic therapy. It may help to talk to several cancer specialists before deciding on the best course of treatment for you, your cancer and your lifestyle.

- A **radiation oncologist** is a doctor who specializes in destroying cancer cells with high energy X-rays or other types of radiation.
- A **medical oncologist** is a doctor who is an expert at prescribing special drugs (chemotherapy) to treat cancer. Some medical oncologists are also **hematologists**, meaning they have experience treating blood problems.

UNDERSTANDING RADIATION THERAPY

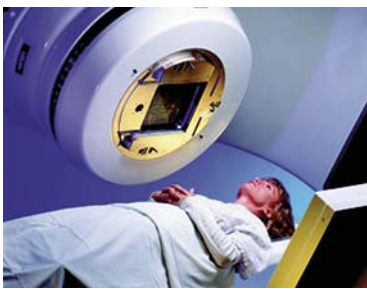
Radiation therapy, also called radiotherapy, is the careful use of radiation to safely and effectively kill cancer cells while avoiding nearby healthy tissue.

- Radiation oncologists use radiation therapy to try to cure cancer, to control cancer growth and to relieve symptoms, such as pain.
- Radiation therapy works within cancer cells by damaging their ability to multiply. When these cells are destroyed by the radiation, the body naturally eliminates them.
- Healthy tissues can also be affected by radiation, but they are usually able to repair themselves in a way cancer cells cannot.

EXTERNAL BEAM RADIATION THERAPY

External beam radiation therapy is a series of daily outpatient treatments to accurately deliver radiation to the cancer cells.

- Radiation oncologists usually deliver external beam radiation therapy to the lymphoma from a machine called a linear accelerator.
- Each treatment is painless and is similar to getting an X-ray. Treatments last less than 30 minutes each and are every day except for Saturday and Sunday for three to four weeks.
- **Involved field radiation** is when your doctor delivers radiation only to the parts of the body known to have cancer. It is often combined with chemotherapy.
- Your radiation oncologist may deliver radiation to all the lymph nodes in the body to destroy cancer cells that may have spread to other lymph nodes. This is called **total nodal irradiation**.
- 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 destroy any remaining cancer cells and create a space for the new stem cells.



BIOLOGIC THERAPY

Also called immunotherapy, biologic therapy works with your immune system to fight cancer. Biologic therapy is like chemotherapy. The difference is that chemotherapy attacks the cancer directly and biologic therapy helps your immune system better fight the disease.

- **Monoclonal antibodies** work by targeting certain molecules in the body and attaching themselves to those molecules. This causes some lymphoma 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 cancer cell and damage it with small amounts of radiation without injuring nearby healthy tissue. Presently, radiolabeled antibodies are being used to treat non-Hodgkins lymphoma that has come back after treatment.

POTENTIAL SIDE EFFECTS

The side effects you may experience will depend on the part of the body being treated, the amount of radiation you are given, and whether or not you have received chemotherapy. Ask your doctor before treatment begins about possible side effects and how best to manage them. Most side effects go away once you finish treatment.

- You may experience very few or no side effects and can continue your normal routine during treatment.
- You may notice mild skin irritation, upset stomach, hair loss, sore throat, loose bowel movements, nausea and fatigue.

Tell your doctor or nurse if you experience any discomfort during treatment. They may be able to prescribe medication or change your diet to help.