



# Non-Hodgkin Lymphoma: Staging and Treatment

## What is staging for cancer?

Staging helps you learn where your cancer is, how much is in your body, and if it has spread. For non-Hodgkin Lymphoma (NHL), a [biopsy](#) is done of the lymph nodes. The tissue is looked at under a microscope to help determine what type of NHL you have. You will have other tests done to help determine what stage the NHL is:

- Blood tests, [including complete blood count](#) (CBC), sedimentation rate, [LDH](#), [albumin](#), Hepatitis B and C testing, and beta-2 microglobulin.
- Chest x-ray
- [CT scan](#) or [MRI](#) of the chest, abdomen, and pelvis.
- [PET scan](#).
- [Bone marrow biopsy](#).
- [Echocardiogram](#) or MUGA scan.

## How is NHL staged?

After testing is done, your provider will give your NHL a stage. Staging helps guide your treatment. “I” means involvement, and “E” means extranodal (outside the lymph node.) The complex staging system of NHL from the Lugano Modification of Ann Arbor is shown here:

**Stage I** can be either (I or IE):

- The cancer is only in one lymph node or lymphoid organ.
- There is cancer in one organ outside the lymph system.

**Stage II** can be either (III or IIE):

- The cancer is in two or more groups of lymph nodes on the same side as the diaphragm (III).
- The cancer is in a nearby organ and a group in one or both lymph nodes. It could be in other groups of lymph nodes near the diaphragm as well (IIE).

**Stage III** can be either:

- The cancer is in the lymph nodes on both sides of the diaphragm.
- The cancer is in the lymph nodes above the diaphragm, and it is in the spleen.

**Stage IV:** The cancer has metastasized (spread) to at least one organ outside of the lymph system.

The subtype of NHL is important in staging/classification and treatment planning. They are classified in two ways:

- Aggressive lymphomas: growing quickly and need treatment as soon as possible.
- Indolent lymphomas: slow-growing and may not be treated immediately. Your provider will watch them and wait.

There are over 60 subtypes of NHLs. To learn more about the types, read our [Non-Hodgkin Lymphoma: The Basics](#) article.

## How is NHL treated?

Treatment for NHL depends on the stage and how aggressive your cancer is, along with your age, other health issues, and your goals for treatment. NHL is often treated in these ways with chemotherapy being the most common:

- Chemotherapy
- Targeted therapy.
- Immunotherapy.
- Radiation.
- Radioimmunotherapy.
- Bone marrow and stem cell transplants.
- Clinical trials.

## Chemotherapy

[Chemotherapy](#) attacks fast-growing cells. Aggressive lymphomas often respond well to this treatment. It may be taken in a pill form, given through an intravenous (IV) infusion, and it can be given directly into your spinal fluid. Intrathecal chemotherapy may be used to treat NHL that is affecting the tissues of the brain and spinal cord. Chemotherapies that can be given intrathecally are [methotrexate](#) and [cytarabine](#).

Often, a regimen (group of medications) is used for your treatment. Two common regimens are:

- [Cyclophosphamide](#), [doxorubicin](#), [vincristine](#), and [prednisone](#).
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Some of the other chemotherapies used are [chlorambucil](#), [methotrexate](#), [etoposide](#), [cytarabine](#), [cisplatin](#), [carboplatin](#), [ifosfamide](#), [fludarabine](#), [bendamustine](#), [gemcitabine](#), [lenalidomide](#), and [cladribine](#).

Your provider will talk to you about any potential side effects of the chemotherapy you receive.

## Targeted Therapy

[Targeted therapy](#) is a type of chemotherapy that works by targeting specific genes or proteins that are helping the cancer to grow. They include:

- Proteasome Inhibitors: [bortezomib](#).
- HDAC Inhibitors: [romidepsin](#) and [belinostat](#).
- Kinase Inhibitors: [ibrutinib](#), [acalabrutinib](#), and [zanubrutinib](#).
- PI3K Inhibitors: [idelalisib](#), [copanlisib](#), [umbralisib](#), and [duvelisib](#).
- BCL-2 Inhibitor: [venetoclax](#)
- BTK Inhibitor: [zanubrutinib](#)

## Immunotherapy

[Immunotherapy](#) is aimed at using the body's own immune system to attack the cancer cells. These are the type of immunotherapies your provider may use to treat NHL:

- Monoclonal Antibodies: [rituxan](#), [obinutuzumab](#), [alemtuzumab](#), [ofatumumab](#), [brentuximab vedotin](#), and [polatuzumab vedotin-piiq](#).

- Immune Check Point Inhibitors: [pembrolizumab](#).
- Immunomodulating Drugs: [thalidomide](#) and [lenalidomide](#).
- Chimeric Antigen Receptor (CAR) T-cell Therapy: [axicabtagene ciloleucel](#) and [tisagenlecleucel](#).

## Radiation

[Radiation therapy](#) is the use of high-energy x-rays to kill cancer cells. Radiation therapy may also be done as a [palliative treatment](#). This means it is done to help with symptoms, such as bleeding, pain, or problems caused by metastasis (especially to the brain and bones).

There are two main types of radiation used to treat non-Hodgkin lymphoma: photon (traditional radiation) and proton therapy. [Proton therapy](#) is only available at certain centers. Many radiation oncologists now choose to treat just the lymph nodes that were involved and the surrounding areas where the tumor had spread (called involved site radiation therapy, ISRT). You should discuss with your provider which type of radiation therapy is right for you.

## Radioimmunotherapy

Radioimmunotherapy combines monoclonal antibodies and radiation. Currently, the only available radioimmunotherapy treatment is [Zevalin](#) which works against CD20 (a protein found on B cells).

## Bone Marrow and Stem Cell Transplants

Transplants are used for some patients who have NHL and are in remission or relapse during or after treatment. Chemotherapy will be given before the transplant and in some cases, patients will also receive radiation. Transplants can be done using a donor's bone marrow or stem cells ([allogeneic](#)) or a patient's own bone marrow or stem cells ([autologous](#)).

## Clinical Trials

You may be offered a clinical trial as part of your treatment plan. To find out more about current clinical trials, visit the [OncoLink Clinical Trials Matching Service](#).

## Making Treatment Decisions

Your care team will make sure you are included in choosing your treatment plan. This can be overwhelming as you may be given a few options to choose from. It feels like an emergency, but you can often take a few weeks to meet with different providers and think about your options and what is best for you. This is a personal decision. Friends and family can help you talk through the options and the pros and cons of each, but they cannot decide for you. You need to be comfortable with your decision – this will help you move on to the next steps. If you ever have any questions or concerns, be sure to call your team.

You can learn more about [Non-Hodgkin Lymphoma](#) at [OncoLink.org](#).

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