

Non-Hodgkin Lymphoma

Information for people with cancer

This information should not be used to diagnose yourself or in place of a doctor's care.

This is information about Non-Hodgkin Lymphoma. For information about Hodgkin lymphoma:

www.bccancer.bc.ca/health-info/types-of-cancer/blood-lymphoid/hodgkin-lymphoma

For information about Skin Lymphomas, including Mycosis fungoides, cutaneous T-cell lymphoma, and Sezary syndrome information: www.bccancer.bc.ca/health-info/types-of-cancer/skin/skin-lymphoma

Lymphomas are cancers that start in the lymphocytes. Lymphocytes are a type of white blood cell that move through your body in the lymphoid system. The lymphoid system is part of your immune system, which protects against infection.

The lymphoid system includes:

- Lymph nodes.
- Lymphatic vessels.
- Lymph fluid.
- Lymph tissue in organs such as the spleen, thymus, and bone marrow.

The lymph nodes are small organs in many places in your body. They are mostly in your chest, neck, armpit, groin and near the blood vessels of your intestines. Lymphatic vessels carry lymph fluid between your lymph nodes and throughout your body.

More information about the lymphoid system: medlineplus.gov/ency/article/002247.htm

Diagram of lymphatic system and lymph node: medlineplus.gov/ency/imagepages/19672.htm

Lymphomas are called B-cell or T-cell lymphoma, depending on the type of lymphocyte that has the cancer.

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- B-cell lymphocytes come from the bone marrow. 90% (90 out of 100) of lymphomas are B-cell.
- T-cell lymphocytes come from the thymus, a gland in the central part of the chest. T-cell lymphomas are less common and have a greater chance of recurring (coming back).

Non-Hodgkin lymphomas can show up almost anywhere in the body:

visualsonline.cancer.gov/details.cfm?imageid=8276

This cancer may also be called NHL, malignant lymphoma, or lymphoid cancer.

Diagnosis and Staging

What are the signs and symptoms of Non-Hodgkin lymphoma?

Most symptoms of Non-Hodgkin lymphoma are also common in other, less serious illnesses. It is always important to have symptoms checked by a health care provider.

Non-Hodgkin lymphoma symptoms can include:

- Painless, enlarged lymph nodes in your neck, groin or armpit.
- Fatigue (extreme tiredness).
- Shortness of breath.
- Itchiness on the trunk (chest and stomach area) of your body.
- Unusual back or abdominal pain.
- Abdominal swelling.

The following are known as "B" symptoms. These symptoms will affect the staging of your disease and what treatment you have:

- A fever that will not go away and has an unknown cause.

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- Unexplained night sweats. These can be so severe that you need to change your bed sheets.
- Unexplained weight loss of more than 10% of your body weight in the last 6 months.

If you have any signs or symptoms that you are worried about, please talk to your family doctor or nurse practitioner.

How is Non-Hodgkin lymphoma diagnosed?

These are tests that may be used to diagnose Non-Hodgkin lymphoma:

- **Physical exam:** close attention to lymph nodes, spleen, liver and pain in bones.
- **Blood and urine (pee) tests**
- **Chest X-ray:** looks for signs of cancer
- **CT (computed tomography) scan:** scans of chest, abdomen and/or pelvis to look for signs of cancer in those organs and nearby lymph nodes.
- **Biopsy:** a surgeon will remove the lymph node(s) or tissue with cancer. A specialist doctor (pathologist) will look at the cells under a microscope.
- **Other scans** of bones or organs, such as the liver and spleen.
- **Endoscopy:** a doctor uses an endoscope (a thin tube with a light and camera) to look at your stomach and intestines.
- **Spinal tap (lumbar puncture):** a doctor takes a sample of your cerebrospinal fluid.

Non-Hodgkin lymphoma does not always spread in a regular pattern, like Hodgkin lymphoma.

For more information on tests used to diagnose cancer, see our Screening and Diagnosis pathfinder: bccancer.libguides.com/pathfinder-screening

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What are the types of Non-Hodgkin lymphoma?

There are many types of lymphoma with different names. Waldenstrom's Macroglobulemia, lymphomatoid granulomatosis, lymphomatoid papulosis, and MALT are all types of lymphoma. Most other types have "lymphoma" in the name.

Lymphomas are called B-cell or T-cell lymphoma, depending on the type of lymphocyte that has the cancer.

- B-cell lymphocytes come from the bone marrow. 90% (90 out of 100) of lymphomas are B-cell.
- T-cell lymphocytes come from the thymus, a gland in the central part of the chest. T-cell lymphomas are less common and have a greater chance of recurring (coming back).

Abnormal or cancerous lymphocytes (T-cell or B-cell) may:

- Stay in the lymph nodes
- Form solid tumours
- Rarely, like leukemia, circulate in the blood

Non-Hodgkin lymphomas are B-cell or T-cell. Each type has a subtype depending on certain features of the cells:

- If the pattern is **follicular** (cells clumped in the lymph node) or **diffuse** (cells are spread out in the lymph node).
- If the size or types of cells with cancer are large, small or a mix of both.
- How well-differentiated (mature) the cells are.

Non-Hodgkin lymphomas can be:

- Low grade, indolent (slow growing).
- Higher grade, aggressive (fast growing).
- Special.

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There are many types of non-Hodgkin lymphoma. The most common are listed below.

Diffuse large B-cell lymphoma

- Most common type of non-Hodgkin lymphoma.
- Aggressive.
- Usually diagnosed in people in their mid-60s.

Follicular lymphoma

- Second most common type of non-Hodgkin lymphoma.
- B-cell lymphoma.
- Usually diagnosed in people 50 years of age or older.

MALT (mucosa-associated lymphoid tissue) lymphoma

- B-cell lymphoma.
- Also called extranodal marginal zone B-cell lymphoma.
- Usually diagnosed in people in their 60s.
- Usually slow growing but can be aggressive.

Mantle cell lymphoma

- B-cell lymphoma.
- Usually diagnosed in people in their 60s.
- Has often spread at the time of diagnosis.
- May be slow growing or aggressive.

What are the stages of Non-Hodgkin lymphoma?

Staging describes the cancer. Staging is based on how much cancer is in the body, where it was first diagnosed, if the cancer has spread and where it has spread to.

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The stage of the cancer can help your health care team plan your treatment. It can also tell them how your cancer might respond to treatment and the chance that your cancer may come back (recur).

Non-Hodgkin lymphoma staging:

- **Stage 1:** Cancer is only in one lymph node area.
- **Stage 2:** Cancer is in two or more lymph node areas on the same side (above or below) of your diaphragm. The diaphragm is a thin muscle below your lungs and separates your chest from your abdomen.
- **Stage 3:** Cancer is in lymph node areas on both sides of your diaphragm.
- **Stage 4:** Cancer has spread outside of the lymph system, into other organs or tissues.

Each stage is divided into A and B categories:

- **A:** you have no symptoms from the “B” list [see signs and symptoms above]
- **B:** you have symptoms from the “B” list.

Other letters may be added to the staging:

- **E:** Lymphoma is in nearby tissue outside of the lymph nodes (extranodal site)
- **S:** Lymphoma has spread to your spleen.
- **X:** There are large areas of lymphoma (bulky disease).

For more information on staging, see our About Cancer page:

bccancer.bc.ca/health-info/types-of-cancer/about-cancer

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What are the grades of non-Hodgkin lymphoma?

The grade of the cancer describes how different the cancer cells look from normal cells and how fast the cancer cells are growing. A pathologist will give the cancer a grade after looking at the cells under a microscope.

Non-Hodgkin lymphoma is either low grade (indolent) or high grade (aggressive).

Low grade (indolent): cells are abnormal but look a lot like normal cells. Low grade cancers usually grow slowly and are less likely to spread. However, some low grade types of non-Hodgkin lymphomas can change into high grade types.

High grade (aggressive): cells are abnormal and do not look like normal cells. High grade cancers usually grow more quickly and are more likely to spread.

Treatment

What is the treatment for Non-Hodgkin lymphoma?

Cancer treatment may be different for each person. It depends on your particular cancer. Your treatment may be different from what is listed here.

Treatment for lymphomas depends on grade, type, and stage. Your age, health, and other concerns are also part of planning treatment.

Almost all people with lymphoma can be helped with proper treatment. About 50% (half) can be cured. About 50% can have their disease made better for periods of time, from several months to many years.

You may be offered new treatments or clinical trials that are not listed here.

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Some situations or lymphoma in certain areas of the body may affect treatment planning. For example:

- Lymphoma related to a previous or existing infection, such as AIDS, HTLV-1, or hepatitis B or C.
- Lymphoma in certain parts of the body: GI tract, testes, central nervous system (brain, spinal cord), eye, paranasal sinus, or skin.
- Lymphomas related to organ transplant.
- Discordant histology lymphomas (more than one kind of lymphoma at the same time).

In the cases above, you may need extra tests and your treatment may be different than described below.

Observation

- For some slow growing, indolent lymphomas, you do not need treatment right away.

Systemic therapy (chemotherapy)

- Many different drugs are used to treat lymphoma.
- A combination of different drugs, along with radiation therapy, can have excellent results.
- You may get immunotherapy drugs called monoclonal antibodies. This is sometimes called biological therapy.
- For more information about systemic therapy go to:

[bccancer.bc.ca/our-services/treatments/systemic-therapy-\(chemotherapy\)](http://bccancer.bc.ca/our-services/treatments/systemic-therapy-(chemotherapy))

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Radiation therapy (uses high energy x-rays to kill or shrink cancer)

- Used to treat early stage follicular lymphomas. Often has excellent results.
- Used to treat stages 1 and 2 diffuse lymphomas, along with radiation therapy.
- You may need radiation therapy after systemic therapy, depending on the results of your imaging scans, like CT and PET.
- For more information about radiation therapy go to:
bccancer.bc.ca/our-services/treatments/radiation-therapy

Bone Marrow Transplant (BMT)

- If regular systemic therapy does not work, you may need very high doses of systemic therapy and a bone marrow transplant.
- Information is available from The Leukemia/Bone Marrow Transplant Program of B.C., at Vancouver General Hospital: www.leukemiabmtprogram.org

What is the follow-up after treatment?

- Follow-up testing and appointments are based on your type of cancer.
- Guidelines for follow-up after treatment for Non-Hodgkin lymphoma are on our website: www.bccancer.bc.ca/health-professionals/clinical-resources/cancer-management-manual/lymphoma-chronic-leukemia-myeloma/lymphoma#Follow-Up
- These are guidelines written for your doctor, nurse practitioner or specialist. You can look at them to see what appointments and tests you might need after treatment.
- After treatment, you may return to the care of your family doctor or specialist for regular follow-up. If you do not have a family doctor, please talk to your BC Cancer health care team.

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- **Follow-up appointments and tests:**
 - For the first two years after treatment, you should see your doctor every 3 months. Then, see your doctor every 6 months for the next 3 years. After, you should see your doctor once per year.
 - At every visit, you should have an exam and a blood test.
 - Depending on your cancer, you will need a chest x-ray once per year or at every visit.
 - You may also need other tests every year, such as a mammogram, pap smear or TSH level. Please talk to your doctor about what tests you may need.
- The BC Cancer Life after Cancer page has information on issues that cancer survivors may face: bccancer.bc.ca/lifeaftercancer

Side effects

After treatment for Non-Hodgkin lymphoma, a few people develop side effects much later in life. There are things you can do to help with these side effects. Talk to your family doctor or nurse practitioner about any side effects or concerns.

Side effects you may have:

- Dental problems such as a dry mouth or cavities. This is more common after radiation therapy to the head area. Looking after your teeth can prevent serious problems.
- Infertility, early menopause, and other related problems.
- Other cancers.
- Thyroid problems, especially if you had radiation therapy to the throat area. The symptoms may not seem related to the cancer but they can be treated. For more information on hypothyroidism go to:
 - HealthlinkBC: www.healthlinkbc.ca/health-topics/hw145667
 - MedlinePlus.gov: medlineplus.gov/ency/article/000353.htm

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More Information

What causes Non-Hodgkin lymphoma and who gets it?

These are some of the risk factors for this cancer. Not all of these risk factors may cause this cancer, but they may help the cancer start growing.

- Previous exposure to radiation or systemic therapy.
- Exposure to some chemicals, including herbicides.
- Taking drugs that suppress the immune system, such as those needed after an organ transplant.
- Infections with some viruses or bacteria: HIV, Epstein-Barr, H. pylori (a gastrointestinal bacteria), HTLV-1 (human T-lymphotropic virus) or hepatitis C.
- Being older.
- Researchers are looking at other possible risk factors, such as obesity, autoimmune diseases, or familial factors.

Statistics on Hodgkin lymphoma

- B.C. statistics: www.bccancer.bc.ca/health-info/disease-system-statistics/statistics-by-cancer-type
- Canada statistics: www.cancer.ca/en/cancer-information/cancer-type/non-hodgkin-lymphoma/statistics/?region=bc

Note: Available statistics do not have information about the inclusion of transgender and gender diverse participants. It is unknown how these statistics apply to transgender and gender diverse people. Patients are advised to speak with their primary care provider or specialists about their individual considerations and recommendations.

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Can I help prevent Non-Hodgkin lymphoma?

There is no known way to prevent Non-Hodgkin lymphoma.

Is there screening for Non-Hodgkin lymphoma?

There is no screening program for Non-Hodgkin lymphoma.

Where can I find more information?

- If you have questions about Non-Hodgkin lymphoma, please talk to your health care team.
- Our librarians can help you find the information you need. Visit our Library page: bccancer.bc.ca/our-services/services/library
- BC Cancer Library Non-Hodgkin Lymphoma pathfinder: bccancer.libguides.com/pathfinder-non-hodgkin
- Managing Your Symptoms: www.bccancer.bc.ca/health-info/coping-with-cancer/managing-symptoms-side-effects
- Emotional Support: www.bccancer.bc.ca/health-info/coping-with-cancer/emotional-support