Uganda Cancer Institute

"Lymphoma can be managed and many types of lymphoma such as Burkitt Lymphoma are curable if detected early and treated promptly"

Lymphoma

Lymphoma

What is Lymphoma?

Lymphoma is a name for several types of cancers that begin from the lymphatic system. The lymphatic system is part of the immune system, which defends the body against infection. The lymphatic system is a network of small lymph nodes connected by very thin lymph vessels, which branch into every part of the body except the brain and spinal cord. The major nodes can be found in the neck, armpits, chest, abdomen, pelvis and groin. Other parts of the lymphatic system include the spleen, thymus and bone marrow.

A clear fluid called lymph flows through the lymph vessels. The lymph contains white blood cells called lymphocytes, special proteins called antibodies, and some waste products. Lymphocytes and antibodies are important parts of your body's immune system. The lymph fluid passes through the lymph nodes, which filter out bacteria and other harmful things. When you have lymphoma, large number of abnormal lymphocytes are made. These abnormal lymphocytes replace some of your normal lymphocytes. This can affect your immune system and the way your body fights infections. The lymph nodes also become swollen, forming lumps (tumours).

What are the different types of Lymphoma?

Lymphoma

There are two main types of lymphoma: non-Hodgkin lymphoma (NHL) and Hodgkin lymphoma (HL), each with several sub-types. Under these two categories, more than 70 sub-types of lymphoma have been classified. The Hodgkin lymphoma differs from the non-Hodgkin lymphoma due to presence of abnormal cells called “Reed-Sternberg cells” in the Hodgkin lymphoma. These two broad types of lymphoma spread and are treated differently. The most common types of non-Hodgkin lymphoma include B-cell lymphoma, T-cell lymphoma, Burkitt’s lymphoma (BL), Follicular lymphoma, Mantle cell lymphoma, Primary mediastinal B cell lymphoma, and Small lymphocytic lymphoma. Burkitt lymphoma is named after British surgeon Denis Burkitt, who first described this disease in 1956 among children in Uganda at Mulago hospital. In Africa, Burkitt lymphoma is common in young children who are infected with malaria and Epstein-Barr, the virus that causes infectious mononucleosis. The sub-type of BL which usually occurs in Africa starts as tumors of the jaw or other facial bones. It can also affect the gastrointestinal tract, ovaries, and breasts and can spread to the parts of the body. The two main types of Hodgkin lymphoma are classic and nodular lymphocyte, the latter, being the predominant.

Burkitt’s lymphoma

Follicular lymphoma

Non-Hodgkin lymphoma

How common is lymphoma in Uganda?

In 2020, Non-Hodgkin lymphoma was the fifth leading cause of new cancer cases and death in Uganda. In the same year 2020, the Hodgkin lymphoma was the 18th cause of new cancer cases and the 19th cause of cancer deaths in Uganda. This means that Hodgkin lymphoma is much less common compared to the non-Hodgkin lymphoma.

What are the causes of lymphoma?

The causes of lymphoma are not yet conclusive. There are many different types of lymphoma, and it is likely that there is no single cause of all lymphoma. More research is needed to understand possible risk factors for the different types of lymphoma, however, based on the available research findings, the main risk factors for the lymphoma include exposure to radiation and certain chemicals, infection with human immunodeficiency (AIDS) virus, and the Epstein-Barr virus. The possible risk factors of the two major types of lymphoma are described below.

The risk factors for non-Hodgkin's lymphoma include:

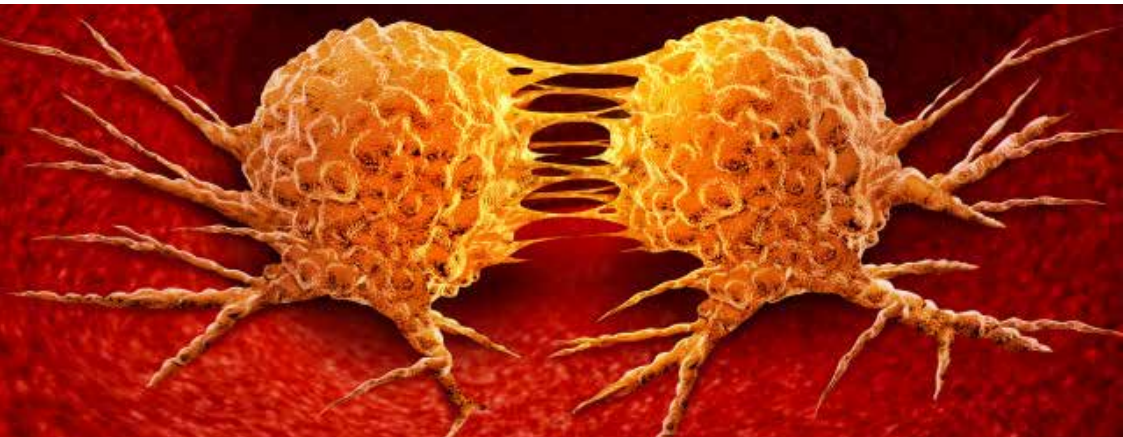
- Immunodeficiency: This could be due to a weak immune system from HIV or taking an immune system-suppressing drug after an organ transplant.
- Autoimmune disease: People with certain autoimmune diseases, such as rheumatoid arthritis and celiac disease, have an increased risk of lymphoma.
- Age: Lymphoma is most common in older individuals. However, some types such as Burkitt's lymphoma are more common in children.
- Sex: The overall risk of NHL is higher in men than women, but there are some types of NHL that are more likely to develop in women.

What are the causes of lymphoma?

- Infection: People who have had infections such as the human T-cell leukemia/lymphotropic virus (HTLV-1), Heliobacter pylori, hepatitis C, or the Epstein-Barr virus (EBV) are associated with an increased risk of NHL.
- Chemical exposure: individuals exposed to chemicals such as pesticides, fertilizers, and herbicides are at increased risk.
- Radiation exposure: Exposure to nuclear radiation can increase the risk for developing NHL.
- Body weight : Individuals living with obesity may be at a higher risk of developing lymphoma.

The risk factors for Hodgkin's lymphoma include:

- Age: More cases are diagnosed in people between the ages of 20 and 30 and in people over 55.
- Sex: Men are more likely than women to develop this type of lymphoma.
- Family history: If a sibling is diagnosed with this type of cancer, your risk of also developing it is higher.
- Infectious mononucleosis: An EBV infection can cause mononucleosis. This infection can increase the risk of lymphoma.
- Immunodeficiency. Individuals with HIV have a greater risk of developing lymphoma.



What are the common signs and symptoms of lymphoma?

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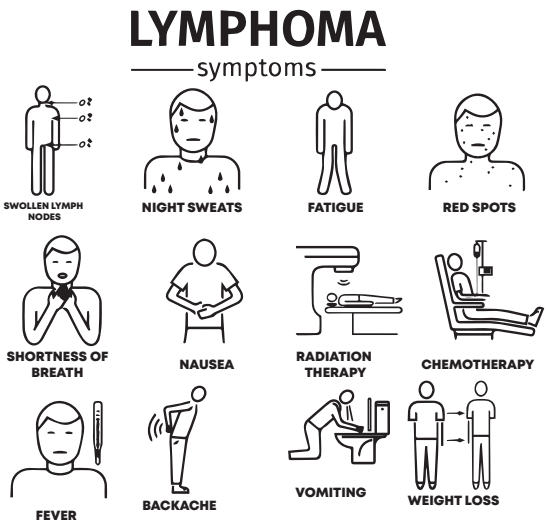
The first sign of lymphoma is often a painless swelling in the lymph nodes in the neck, armpit, groin or belly. Sometimes people also have unexplained loss of weight, fevers and drenching sweats at night. They may also feel generally tired and unwell. Another symptom can be itching without an obvious cause.

Remember, Burkitt lymphoma is a type of NHL cancer that is fast growing, and generally presents on the jaw or face. Burkitt lymphoma generally presents as a mass on the jaw or face that does not pain the child. Most commonly, the cancer affects the jaw and mouth. Teeth may be dislodged, in pain, or even fall out. The cancer may also affect the cheek or eye, looking something like a swelling. Children may also show signs of loss of appetite, weight loss, fevers, and sweating.

If any of these symptoms or signs are seen in your child, or any child you know, the first thing that you should do is to seek medical attention from the nearby hospital or cancer centre. If Burkitt lymphoma is suspected, they will refer you to the nearby cancer centre or Uganda Cancer Institute. Getting a diagnosis early is very important and essential to curing the cancer. The drugs and treatment options work better on the cancers that are diagnosed early.



How is lymphoma diagnosed?

Your doctor will begin by examining your body, especially the areas where there are lymph nodes. Your doctor will also discuss your medical history and ask you about the most common symptoms of lymphoma. If you have swollen lymph nodes that your doctor suspects may be cancerous, they will take some tissue from a swollen lymph node. This is called a tissue biopsy. The whole node may be removed or only a part of the node. This tissue will be sent to a pathology laboratory to be examined in detail to see if it has cancer cells in it. If the biopsy shows that you have lymphoma, other tests will be done to find out whether the cancer has spread, and if so, to were. This is called ‘staging' the cancer.

Your doctor will request for blood test to be examined by pathology laboratory to see how well your other organs such as liver and kidneys are working. Because Lymphoma cells can spread to bone marrow, your doctor will ask for a sample to be taken from your bone marrow with a needle, usually taken from the back of your hipbone. The sample will be looked at under a microscope to see if the lymphoma has spread to the bone marrow.
Your doctor may also request for computerized tomography (CT) scan. A CT scan is a special type of x-ray that gives a three-dimensional (3-D) picture of the organs and other structures in your body. If available and can be afforded by the patient, your doctor may instead ask for Positron emission tomography (PET) scan. A PET scan builds up clear and detailed pictures of the body. You will have an injection of a glucose solution containing a very small amount of a radioactive substance. The scanner can ‘see' this substance, which shows where the glucose is being used in the body. Cancer cells show up as areas where glucose is being used by actively growing cells.

Sometimes, other tests are needed, your doctor should explain to you why you need the test and what is involved. These tests could include:

- Magnetic resonance imaging (MRI), which uses a combination of magnetism and radio waves to build up detailed cross-section pictures (images) of part of the body.
- Ultrasound scan, where sound waves of a very high frequency

are directed at the body. The sound waves are reflected back differently by different types of tissue. These differences are measured and used to build up pictures of structures inside the body.

- Lumbar puncture, where a needle is put into the area around the spinal cord and fluid taken for examination under a microscope.
- Gastroscopy, in which a long, hollow tube with a light attached is inserted down the throat and into the stomach. It projects magnified pictures of the inside of the stomach, and instruments can be inserted through the tube, if needed.
- Colonoscopy, where a long, slim, flexible tube, with a light attached, is inserted through the anus, so the doctor can examine the bowel.

Staging lymphoma

The tests described above will show if cancer cells have spread to other places in the body. Finding out how far the cancer has spread in your body is called ‘staging' the disease. This helps your doctors work out the best treatment options for you. Usually, like in other types of cancer, lymphoma is categorized into four stages.

- In Stage 1 lymphoma, cancer is found in only one lymph node area or one area/organ outside the lymph nodes.
- In Stage 2, cancer is found in two or more lymph node areas on the same side of the diaphragm or the cancer is found in one area/organ outside the lymph nodes and in the lymph nodes around it. Other lymph node areas on the same side of the diaphragm may be involved.
- In Stage 3, cancer is found in lymph node areas on both sides of the diaphragm. It may have spread to an area/organ near the lymph node area, or to the spleen, or both.
- In Stage 4, cancer has spread in more than one spot, within or outside the lymphatic system, for example, in the liver, lung, bone marrow or bone.

Treatment for lymphoma

Your doctor will advise you on the best treatment for you. This will depend on the type of lymphoma you have, where it is, how far it has spread, your age, and general health condition.

- Watchful waiting: In some forms of indolent (slow-growing) non-Hodgkin lymphoma, your doctor might recommend no active treatment when you are first diagnosed. You will have regular check-ups and be treated when the lymphoma progresses. This is only suitable for some people with this sort of lymphoma.
- Chemotherapy: This is the treatment of cancer using anti-cancer drugs. The aim is to kill cancer cells while doing the least possible damage to normal cells. The drugs work by stopping cancer cells from growing and reproducing. Drugs used in chemotherapy can cause side effects. Depending on the drug used, side effects can include feeling sick (nausea), vomiting, feeling off-colour and tired, a sore mouth and some thinning or loss of hair from your body and head. These side effects are temporary, and steps can often be taken to prevent or reduce them.
- Radiotherapy: Radiotherapy treats cancer by using radiation or x-rays to kill cancer cells. The radiation can be precisely targeted onto cancer sites in your body. Treatment is carefully planned to do as little harm as possible to your normal body tissues. Radiotherapy can cause temporary side effects including nausea, and tiredness, and headache, which can be managed with some medication. Skin in the treatment area may become red and sore after two or three weeks of treatment. A

Treatment for lymphoma

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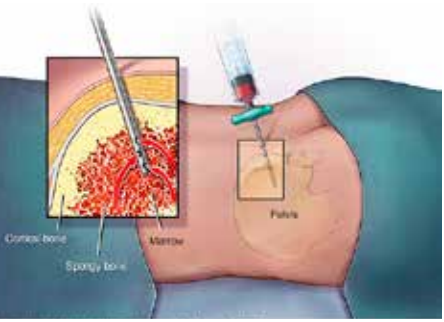
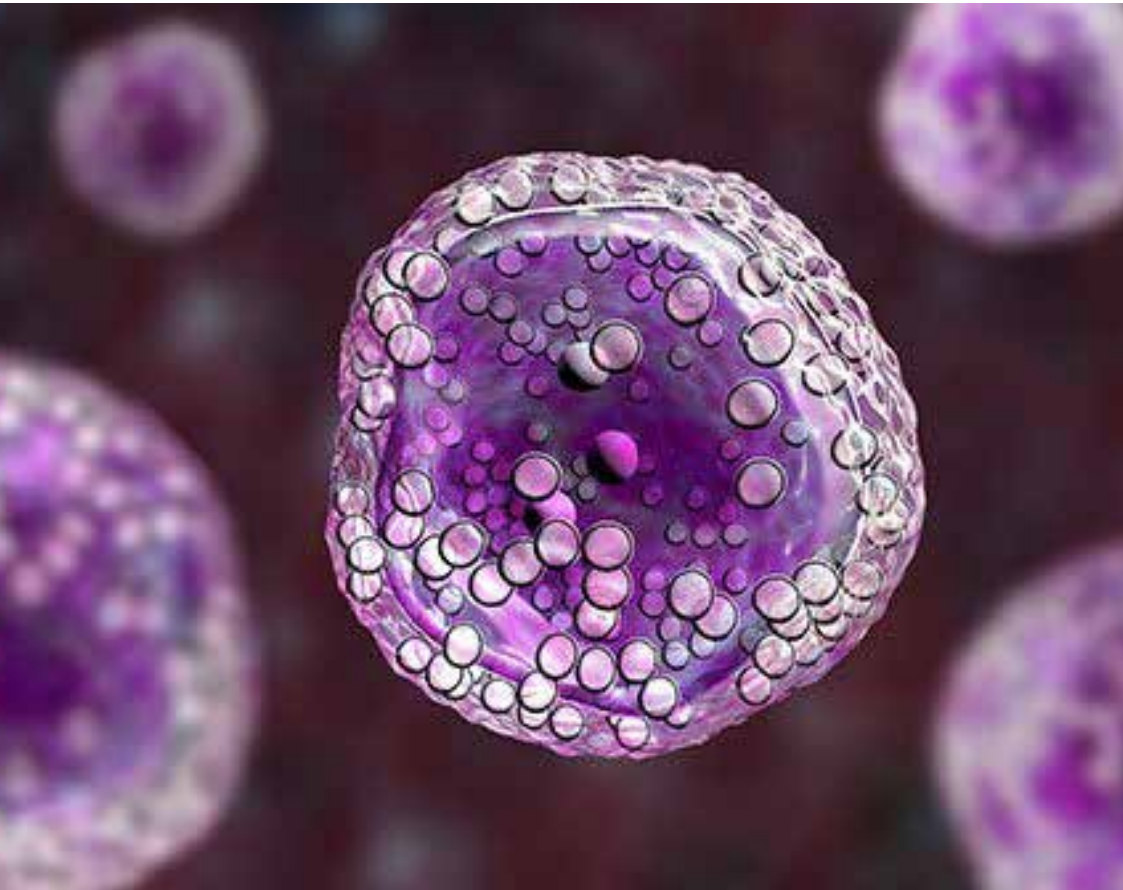


member of your radiotherapy treatment team may advise you about the best cream that can ease any burning sensation.

- Stem cell (or bone marrow) transplantation: This treatment might be suggested if your disease comes back, does not respond to treatment or if it is felt that it has a high risk of coming back. Stem cells are early-stage blood cells that develop in bone marrow (the soft tissue inside bones). Stem cells, infused into you just like a blood transfusion, can rescue your bone marrow from the effects of the treatment. There are two sources of stem cells: autologous, where you act as your own donor, and allogeneic, where someone else (usually a tissue-matched family member, but sometimes a matched unrelated individual) donates. One of the major side effects of stem cell transplantation is increased risk of infection, bruise and one may bleed more easily, and become weak. Other side effects may include mouth infection and ulcers, nausea, vomiting, diarrhoea or bleeding especially from the bladder. Let your nurse and doctor know if you have any of these symptoms so that they can be treated.
- Antibody therapy for non-Hodgkin lymphoma: A newer form of treatment for some non-Hodgkin lymphomas uses antibodies that are able to recognize lymphoma cells. It is effective alone or with chemotherapy. It appears to have few serious side effects although some patients may develop allergic reactions to the antibody during the treatment. Several more antibody treatments are being developed

Can lymphoma be cured?

Many adults with lymphoma have their disease cured by treatment or controlled for very long periods. With this remission, people usually have normal or near-normal good health. This may last for months or many years. The prognosis is also good for children, especially when the disease is found in its early stages. If the disease relapses, more treatment will be needed. This may be with chemotherapy or radiotherapy. Overall, like for other types of cancer, prevention is better than cure, and where prevention fails, early detection saves life.



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