

## Cancer Association of South Africa (CANSA)



### CANSA Fact Sheet On Hodgkin's Lymphoma

#### Introduction

Lymphoma is a type of cancer involving cells of the immune system, called lymphocytes. Just as cancer represents many different diseases, lymphoma represents many different cancers of lymphocytes – about 35 different subtypes.

#### The Lymphatic System

The lymphatic system is an extensive drainage network that helps keep bodily fluid levels in balance and defends the body against infections. It is made up of a network of lymphatic vessels that carry lymph - a clear, watery fluid that contains protein molecules, salts, glucose, urea, and other substances - throughout the body.

The spleen, which is located in the upper left part of the abdomen under the ribcage, works as part of the lymphatic system to protect the body, clearing worn out red blood cells and other foreign bodies from the bloodstream to help fight off infection.

[Picture Credit: Lymphatic System]

One of the lymphatic system's major jobs is to collect extra lymph fluid from body tissues and return it to the blood. This process is crucial because water, proteins, and other substances are continuously leaking out of tiny blood capillaries into the surrounding body tissues. If the lymphatic system did not drain the excess

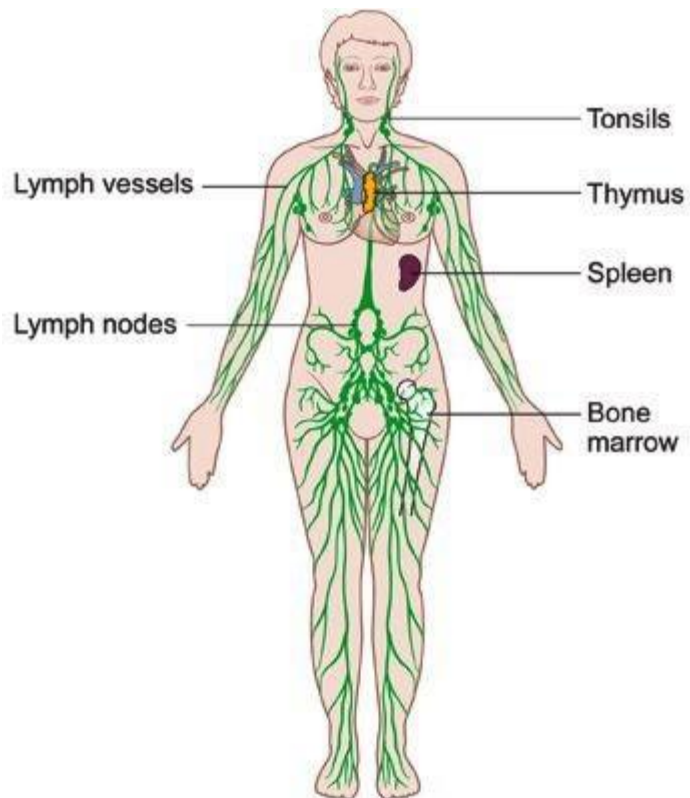


Diagram of the lymphatic system  
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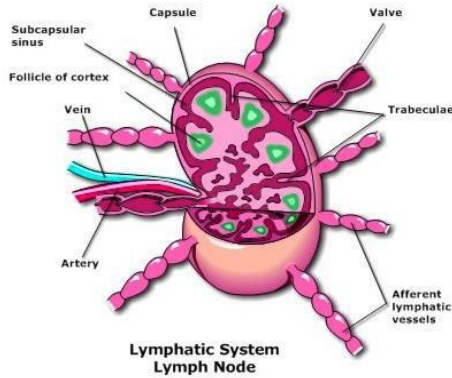
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fluid from the tissues, the lymph fluid would build up in the body's tissues, and the tissue would swell.

The lymphatic system also helps defend the body against germs like viruses, bacteria, and fungi that can cause illnesses. Those germs are filtered out in the lymph nodes, small masses of tissue located along the network of lymph vessels. The nodes house lymphocytes, a type of white blood cell. Some of those lymphocytes make antibodies, special proteins that fight off germs and stop infections from spreading by trapping disease-causing germs and destroying them.



[Picture Credit – Lymph Node ]

The spleen also helps the body fight infection. The spleen contains lymphocytes and another kind of white blood cell called macrophages, which engulf and destroy bacteria, dead tissue, and foreign matter and remove them from the blood passing through the spleen.

### Types of Lymphoma

Lymphomas fall into one of two major categories:

- Hodgkin's lymphoma (HL, previously called Hodgkin's disease)
- Non-Hodgkin's Lymphoma (NHL, all other lymphomas)

These two types occur in the same places, may be associated with the same symptoms, and often have similar appearance on physical examination. However, they are readily distinguishable via microscopic examination.

Hodgkin's lymphoma develops from a specific abnormal B lymphocyte lineage. NHL may derive from either abnormal B or T cells and are distinguished by unique genetic markers. There are five subtypes of Hodgkin's lymphoma and about 30 subtypes of non-Hodgkin's lymphoma.

### Hodgkin's Lymphoma

Hodgkin's lymphoma is a cancer of lymph tissue found in the lymph nodes, spleen, liver, bone marrow, and other sites.

**Kaseb, H. & Babiker, H.M. 2022.**

“Hodgkin lymphoma (HL), formerly called Hodgkin's disease, is a rare monoclonal lymphoid neoplasm with high cure rates. Biological and clinical studies have divided this disease entity into two distinct categories: classical Hodgkin lymphoma and nodular lymphocyte-predominant Hodgkin lymphoma (NLP-HL). These two disease entities show differences in the clinical picture and pathology. Classical Hodgkin lymphoma accounts for approximately 95% of all HL, and it is further subdivided into four subgroups: nodular sclerosis (NSHL), lymphocyte-rich (LRHL), mixed cellularity

(MCHL), and lymphocyte-depleted (LDHL). Four features characterize Hodgkin lymphomas. They commonly arise in the cervical lymph nodes; the disease is more common in young adults; there are scattered large mononuclear Hodgkin and multinucleated cells (Reed-Sternberg) intermixed in a background of a mixture of non-neoplastic inflammatory cells; finally, T lymphocytes are often observed surrounding the characteristic neoplastic cells. Hodgkin lymphoma has an excellent overall prognosis with approximately an 80% cure rate.”

### **The International Classification of Disease 10<sup>th</sup> Version (ICD-10)**

The International Classification of Diseases (ICD) is designed to promote international comparability in the collection, processing, classification, and presentation of mortality statistics. This includes providing a format for reporting causes of death on the death certificate.

ICD serves a broad range of uses globally and provides critical knowledge on the extent, causes and consequences of human disease and death worldwide via data that is reported and coded with the ICD. Clinical terms coded with ICD are the main basis for health recording and statistics on disease in primary, secondary and tertiary care, as well as on cause of death certificates. These data and statistics support payment systems, service planning, administration of quality and safety, and health services research. Diagnostic guidance linked to categories of ICD also standardizes data collection and enables large scale research.

For more than a century, the International Classification of Diseases (ICD) has been the basis for comparable statistics on causes of mortality and morbidity between places and over time. Originating in the 19<sup>th</sup> century, the latest version of the ICD, ICD-11, was adopted by the 72<sup>nd</sup> World Health Assembly in 2019 and came into effect on 1<sup>st</sup> January 2022.

The ICD-10 Code for Hodgkin lymphoma, unspecified, unspecified site – C81.90.

### **Incidence Hodgkin’s Lymphoma in South Africa**

According to the National Cancer Registry (2019), outdated and known for under reporting, the following number of Hodgkin’s Lymphoma cases was histologically diagnosed in South Africa during 2019. Histologically diagnosed means that a tissue sample (biopsy) was forwarded to an approved laboratory where a specially trained pathologist confirmed the cancer diagnosis:

<b>Group - Males 2019</b>	<b>Actual No of Cases</b>	<b>Estimated Lifetime Risk</b>	<b>Percentage of All Cancers</b>
<b>All males</b>	<b>309</b>	<b>1:1 103</b>	<b>0,74%</b>
<b>Asian males</b>	<b>4</b>	<b>1:3 491</b>	<b>0,39%</b>
<b>Black males</b>	<b>212</b>	<b>1:1 278</b>	<b>1,45%</b>
<b>Coloured males</b>	<b>25</b>	<b>1:1 374</b>	<b>0,53%</b>
<b>White males</b>	<b>68</b>	<b>1:441</b>	<b>0,31%</b>

Group - Females 2019	Actual No of Cases	Estimated Lifetime Risk	Percentage of All Cancers
All females	289	1:1 247	0,66%
Asian females	13	1:769	0,98%
Black females	181	1:1 613	0,91%
Coloured females	37	1:798	0,78%
White females	58	1:529	0,32%

The frequency of histologically diagnosed cases of Hodgkin's Lymphoma in South Africa for 2019 was as follows (National Cancer Registry, 2019):

Group - Males 2019	0 – 19 Years	20 – 29 Years	30 – 39 Years	40 – 49 Years	50 – 59 Years	60 – 69 Years	70 – 79 Years	80+ Years
All males	47	39	87	78	36	14	6	2
Asian males	0	1	1	2	0	0	0	0
Black males	35	24	65	60	21	5	2	0
Coloured males	3	1	9	7	3	1	1	0
White males	9	13	12	9	12	8	3	2

Group - Females 2019	0 – 19 Years	20 – 29 Years	30 – 39 Years	40 – 49 Years	50 – 59 Years	60 – 69 Years	70 – 79 Years	80+ Years
All females	30	65	72	52	32	25	10	3
Asian females	1	3	1	5	2	1	0	0
Black females	20	37	52	33	20	14	3	2
Coloured females	1	10	10	5	3	6	2	0
White females	8	15	9	9	7	4	5	1

N.B. In the event that the totals in any of the above tables do not tally, this may be the result of uncertainties as to the age, race or sex of the individual. The totals for 'all males' and 'all females', however, always reflect the correct totals.

### Causes and Risk Factors of Hodgkin's Lymphoma

The cause of Hodgkin's Lymphoma is not known. Hodgkin's lymphoma is most common among individuals aged 15 - 35 and 50 - 70. Past infection with the Epstein-Barr virus (EBV) is thought to contribute to some cases. Patients with HIV infection are also said to be more at risk than the general population.

#### Risk Factors

Factors that may increase the risk of Hodgkin's lymphoma include:

- Age - Hodgkin's lymphoma is most often diagnosed in people between the ages of 15 and 35, as well as those older than 55
- A family history of lymphoma - anyone with a brother or a sister who has Hodgkin's lymphoma has an increased risk of developing Hodgkin's lymphoma. Studies also show up to a seven-fold increased risk in people with a parent or sibling diagnosed with Hodgkin's lymphoma or with any blood or lymphatic cancer
- Sex - males are slightly more likely to develop Hodgkin's lymphoma
- Past Epstein-Barr infection - individuals who have had illnesses caused by the Epstein-Barr virus, such as infectious mononucleosis, are more likely to develop Hodgkin's lymphoma

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- A weakened immune system - having a compromised immune system, such as from HIV/AIDS or from having an organ transplant requiring medications to suppress the immune response, increases the risk of Hodgkin's lymphoma.

### **Symptoms of Hodgkin's Lymphoma**

The following symptoms may present:

- Fatigue
- Fever and chills that come and go
- Itching all over the body that cannot be explained
- Loss of appetite
- Soaking night sweats
- Painless swelling of the lymph nodes in the neck, armpits, or groin (swollen glands)
- Weight loss that cannot be explained

[Picture Credit: Hodgkin's Lymphoma]



Other symptoms that may occur:

- Coughing, chest pains, or breathing problems if there are swollen lymph nodes in the chest
- Excessive sweating
- Pain or feeling of fullness below the ribs due to swollen spleen or liver
- Pain in lymph nodes after drinking alcohol
- Skin blushing or flushing

Note: Symptoms caused by Hodgkin's lymphoma may also occur with other conditions. One should consult a doctor about the meaning of specific symptoms.

### **Signs and Tests**

The first sign of Hodgkin's lymphoma is often a swollen lymph node, which appears without a known cause. The disease can spread to nearby lymph nodes. Later it may spread to the spleen, liver, bone marrow, or other organs.

The disease may be diagnosed after:

- Biopsy of suspected tissue, usually a lymph node biopsy
- Bone marrow biopsy

The following procedures may also be done:

- Blood chemistry tests including protein levels, liver function tests, kidney function tests, and uric acid level

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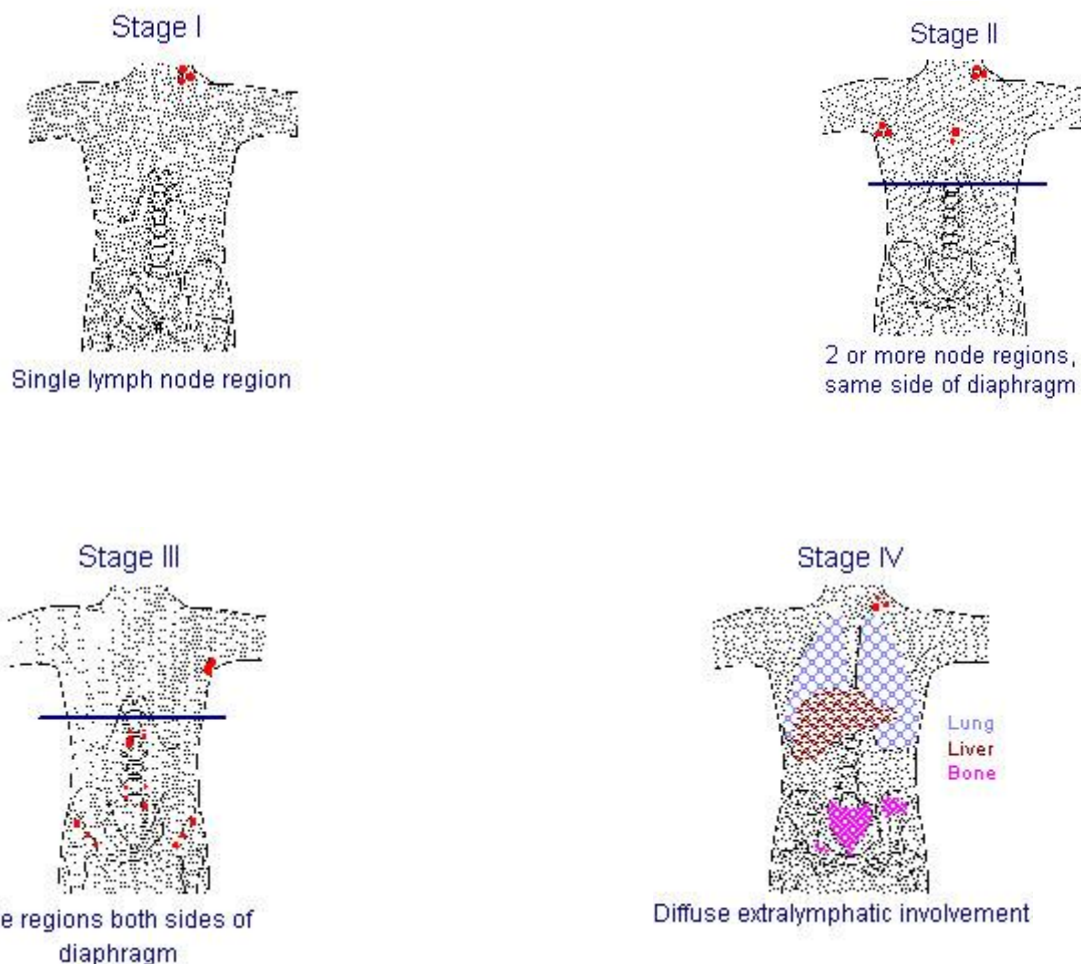
- Bone marrow biopsy
- CT scans of the chest, abdomen, and pelvis
- Complete blood count (CBC) to check for anaemia and white blood count
- PET scan

### Staging of Hodgkin's Lymphoma

The doctor considers the following to determine the stage of Hodgkin's lymphoma:

- The number of lymph nodes that have Hodgkin lymphoma cells
- Whether these lymph nodes are on one or both sides of the diaphragm (see picture)
- Whether the disease has spread to the bone marrow, spleen, liver, or lung.

Staging is important as it assists the doctor to determine treatment.



### Treatment of Hodgkin's Lymphoma

Treatment of Hodgkin's Lymphoma may include:

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Targeted Therapy - newer drugs that work differently from standard chemo drugs are currently being studied.

Monoclonal antibodies - antibodies are proteins normally made by the immune system to help fight infections. Each antibody attacks only a specific target (usually a protein on the surface of an unwanted cell).

Immunotherapy - also called biologic therapy, is designed to boost the body's natural defenses to fight the cancer.

Gene profiling - some researchers are looking at the specific genes and proteins that are found in Hodgkin's lymphoma. These genes and proteins provide more information about the behaviour of Hodgkin's lymphoma, which may help better target the lymphoma with chemotherapy or immunotherapy.

Other treatments that may be considered - stem cell transplantation is being studied in combination with chemotherapy and immunotherapy regimens for new or recurrent Hodgkin's lymphoma. Mini-allogeneic, also called non-myeloablative or reduced intensity transplant, and allogeneic transplantation are being tested in combination with chemotherapy and immunotherapy for new or recurrent Hodgkin lymphoma.

Palliative care - clinical trials are underway to find better ways of reducing symptoms and side effects of current Hodgkin's lymphoma treatments in order to improve patients' comfort and quality of life.

Chemotherapy - Cancer therapy selection, dosing, administration, and the management of related adverse events can be a complex process that should be handled by an experienced healthcare team.

### **Complications of Hodgkin's Lymphoma**

Treatments for Hodgkin's lymphoma may have complications. Long-term complications of chemotherapy or radiation therapy may include:

- Bone marrow diseases (such as leukaemia)
- Heart disease
- Inability to have children (infertility)
- Lung problems
- Other cancers
- Thyroid problems

### **About Clinical Trials**

Clinical trials are research studies that involve people. They are conducted under controlled conditions. Only about 10% of all drugs started in human clinical trials become an approved drug.

Clinical trials include:

- Trials to test effectiveness of new treatments
- Trials to test new ways of using current treatments
- Tests new interventions that may lower the risk of developing certain types of cancers
- Tests to find new ways of screening for cancer

The [South African National Clinical Trials Register](#) provides the public with updated information on clinical trials on human participants being conducted in South Africa. The Register provides information on the purpose of the clinical trial; who can participate, where the trial is located, and contact details.

For additional information, please visit: <https://pactr.samrc.ac.za>

### Medical Disclaimer

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#### Autologous Transplant

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<http://www.cancertherapyadvisor.com/>

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### **Lymph Node**

[http://www.google.co.za/imgres?hl=en&sa=X&rlz=1T4LENN\\_enZA490ZA490&biw=1366&bih=613&tbn=isch&prmd=imvns&tbnid=y5UPisMY6d3v2M:&imgrefurl=http://www.smartdraw.com/examples/view/non-hodgkin%2Blymphoma%2B-%2Bcell/&docid=r4nBtXE1dXFrEM&imgurl=http://wc1.smartdraw.com/examples/content/Examples/10\\_Healthcare/Cancer\\_Illustrations/Non-Hodgkin\\_Lymphoma\\_-\\_Cell\\_L.jpg&w=842&h=627&ei=RNRSUM\\_6O9DY0QX1vYDABQ&zoom=1&iact=rc&dur=527&sig=107310304455409594391&page=2&tbnh=131&tbnw=175&start=23&ndsp=29&ved=1t:429,r:19,s:23,i:206&tx=110&ty=82](http://www.google.co.za/imgres?hl=en&sa=X&rlz=1T4LENN_enZA490ZA490&biw=1366&bih=613&tbn=isch&prmd=imvns&tbnid=y5UPisMY6d3v2M:&imgrefurl=http://www.smartdraw.com/examples/view/non-hodgkin%2Blymphoma%2B-%2Bcell/&docid=r4nBtXE1dXFrEM&imgurl=http://wc1.smartdraw.com/examples/content/Examples/10_Healthcare/Cancer_Illustrations/Non-Hodgkin_Lymphoma_-_Cell_L.jpg&w=842&h=627&ei=RNRSUM_6O9DY0QX1vYDABQ&zoom=1&iact=rc&dur=527&sig=107310304455409594391&page=2&tbnh=131&tbnw=175&start=23&ndsp=29&ved=1t:429,r:19,s:23,i:206&tx=110&ty=82)

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**Lymphoma Association UK**

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**Non-Hodgkin's Lymphoma**

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**The Burkitt's Lymphoma Society**

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