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Hodgkin's lymphoma

Lymphomas are divided into two types - Hodgkin's lymphoma and non-Hodgkin's lymphomas. Hodgkin's lymphoma is sometimes called Hodgkin's disease.

A lymphoma is a cancer of cells in the lymphatic system. The lymphatic system is a system of lymph channels and lymph glands that occurs throughout the body.

What causes Hodgkin's lymphoma?

The exact cause of Hodgkin's lymphoma is not known. What seems to happen is that a cancer (such as a lymphoma) starts from one abnormal cell. In the case of Hodgkin's lymphoma, the cancer develops from a B-lymphocyte cell which becomes abnormal. The exact reason why the cell becomes cancerous is unclear. It is thought that something damages or alters certain genes in the cell. This makes the cell abnormal. If the abnormal cell survives, it may multiply and produce many abnormal cells.

Hodgkin's lymphoma is not an inherited (genetic) condition and does not run in families. However, an identical twin of a person with Hodgkin's lymphoma has a slightly higher risk of developing Hodgkin's lymphoma.

The cancerous lymphocytes tend to collect in lymph glands (nodes). The lymph nodes then get bigger and form cancerous tumours. Some abnormal cells may travel to other parts of the lymphatic system. You may therefore develop lots of large cancerous lymph nodes and an enlarged spleen.

If you have a poorly functioning immune system (for example, if you have [AIDS](#)) your risk of developing a Hodgkin's lymphoma is increased. However, this only accounts for a small number of cases.

A previous infection with a virus called the Epstein-Barr virus (which causes glandular fever) may increase the risk slightly. However, many people have an infection with the Epstein-Barr virus, yet only a few will develop Hodgkin's lymphoma.

How common is Hodgkin's lymphoma?

Hodgkin's lymphoma affects about 2 people in every 100,000 each year. People aged 20-40 years are most often affected but there is a smaller increase in people aged 55 years and older. Slightly more men than women are diagnosed with Hodgkin's lymphoma. About 1 in 5 people with lymphoma have a Hodgkin's lymphoma. Most lymphomas are [non-Hodgkin's lymphoma](#).

Hodgkin's lymphoma symptoms

The symptoms in Hodgkin's lymphoma can be very variable and affect different parts of your body.

Swollen lymph glands (lymph nodes)

The most common early symptom is to develop one or more swollen lymph nodes in one area of the body - most commonly the side of the neck, an armpit or the groin. The swollen lymph nodes are usually painless and gradually become bigger.

The most common cause of swollen lymph nodes is infection. For example, it is very common to develop swollen nodes in the neck during tonsillitis. Lymphoma is an uncommon cause of swollen lymph nodes. However, a lymphoma may be suspected if lymph nodes remain swollen, or if there is no infection to cause the swelling.

Other symptoms

As a Hodgkin's lymphoma develops you may feel generally unwell. Various other symptoms may develop and these include:

- Fever and sweats (especially at night).
- Weight loss.
- Tiredness.
- Poor appetite.

- Looking pale and easily getting out of breath (anaemia).
- Itch all over the body.

If the lymphoma tumours become large and press on nearby parts of the body, various other symptoms can develop. For example, you may develop a cough or breathing problems if the tumour enlarges in the lymph nodes inside the chest.

A symptom which occurs in about 1 in 10 cases is pain in the affected lymph glands after drinking alcohol. If the affected lymph nodes are in the chest or tummy (abdomen), you will not be aware of them swelling in the early stages of the disease.

How is it diagnosed?

If your doctor suspects that you may have a Hodgkin's lymphoma you will be referred to a specialist. A specialist will normally arrange a biopsy of one of the swollen glands (nodes).

During a biopsy procedure a small sample of tissue is removed from a part of the body. The sample is then looked at under the microscope to look for abnormal cells. Usually an entire lymph gland is removed to look at under the microscope.

In Hodgkin's lymphoma, a cell called the **Reed-Sternberg cell** is seen when the biopsy sample is examined under the microscope. (This cell is named after the two doctors who first described it. The Reed-Sternberg cell is a B lymphocyte that has become cancerous.) The presence of the Reed-Sternberg cell confirms the diagnosis, as it is only found in Hodgkin's lymphoma. Only about 1 in 1,000 of the cells in a Hodgkin's lymphoma are Reed-Sternberg cells. There are various other cells which make up the tumour. However, Reed-Sternberg cells are the characteristic cancerous cells found in this condition.

There are various subtypes of Hodgkin's lymphoma. The cells in the biopsy sample can be tested in various other ways to find out exactly which type it is. However, all types include the characteristic Reed-Sternberg cell, and the treatment and outlook are similar for all the types of Hodgkin's lymphoma.

Dr Krishna Vakharia, 16th October 2023

The National Institute for Health and Care Excellence (NICE) has recommended that a person should receive a diagnosis or ruling out of cancer within 28 days of being referred urgently by their GP for suspected cancer.

How do you assess the extent and spread of the lymphoma?

If the biopsy confirms that you have a Hodgkin's lymphoma then further tests are usually advised. For example, you may have a [computerised tomography \(CT\) scan](#), a [magnetic resonance imaging \(MRI\) scan](#), a [positron emission tomography \(PET\) scan](#), [blood tests](#), a [bone marrow biopsy](#) or other tests. (See the separate leaflets which describe each of these tests in more detail.) This assessment is called 'staging'. The aim of staging is to find out how much the lymphoma has grown and whether it has spread to other lymph nodes or to other parts of the body.

Hodgkin's lymphoma stages

The staging system that is commonly used for Hodgkin's lymphoma is:

- **Stage 1** - the lymphoma affects one group of lymph nodes only.
- **Stage 2** - the lymphoma affects two or more groups of lymph nodes. However, they are all on the same side of the diaphragm. (The diaphragm is the large muscle that separates the chest from the tummy (abdomen) and helps us to breathe. So, for stage II, all the affected nodes will either be above or below the diaphragm.)
- **Stage 3** - the lymphoma affects nodes on both sides of the diaphragm.
- **Stage 4** - the lymphoma affects parts of the body outside of the lymphatic system.

Each stage is also divided into A or B. A means that you do not have symptoms of night sweats, high temperature (fever) or weight loss. B means that you do have one or more of these symptoms.

As an example, if you have Stage 2B, it means that you have two or more groups of lymph nodes affected; however, both are either above or below the diaphragm and you also have one or more of night sweats, fevers or weight loss.

By finding out the stage of the lymphoma it helps doctors to advise on the best treatment options. [See the separate leaflet called Stages of Cancer for more detail.](#)

Hodgkin's lymphoma treatment

The treatment options for Hodgkin's lymphoma include:

- Treatment for Hodgkin's lymphoma is usually with medicines that destroy the cancer cells (chemotherapy).
- [Radiotherapy](#) is also sometimes used for treatment. Radiotherapy may be used as the only treatment or together with chemotherapy.
- [A stem cell transplant \(sometimes called a bone marrow transplant\)](#) is not a usual treatment for Hodgkin's lymphoma because chemotherapy and radiotherapy usually cure the disease. A stem cell transplant tends to be used if the disease returns (relapses) after the initial treatment.

The treatment for Hodgkin's lymphoma is usually with medicines that destroy the cancer cells (chemotherapy), with or without radiotherapy.

Chemotherapy

Chemotherapy is a treatment which uses anti-cancer medicines to kill cancer (lymphoma) cells, or to stop them from multiplying. Hodgkin's lymphomas are usually treated with chemotherapy medicines given straight into the vein (intravenous chemotherapy). The course of chemotherapy typically lasts several months. A combination of medicines is usually used. The exact combination of medicines used and the length of the course of chemotherapy depend on factors such as the stage and exact type of the disease.

Radiotherapy

Radiotherapy is a treatment which uses high-energy beams of radiation which are focused on cancerous tissue. This kills cancer cells, or stops cancer cells from multiplying. Radiotherapy alone may be used for early-stage disease. It may also be used in combination with chemotherapy. [See the separate leaflet called Radiotherapy for more details.](#)

What about a stem cell transplant?

A stem cell transplant (sometimes called a bone marrow transplant) is not a usual treatment, as chemotherapy and radiotherapy usually cure the disease. It tends to be used if the disease returns (relapses) after the usual treatment. Stem cells are the immature cells that develop into mature blood cells in the bone marrow. Lymphocytes are derived from blood stem cells.

Briefly, a stem cell transplant involves high-dose chemotherapy (and sometimes radiotherapy) to kill all the abnormal lymphocytes. However, this also kills the stem cells that make normal blood cells. So, after the chemotherapy you are given a transplant of stem cells which then make normal blood cells. Read more about [stem cell transplants](#).

What is the outlook for Hodgkin's lymphoma?

The outlook (prognosis) is generally very good for most people with Hodgkin's lymphoma. It often responds very well to treatment and is one of the most curable forms of cancer.

- About **8 or 9 people out of 10 with the disease will have permanent remission.**
- The cure rate tends to be highest in younger people. **Virtually all young adults who are diagnosed in the early stages of the lymphoma can expect to be completely cured.** It is also often possible to cure Hodgkin's lymphoma even if the initial treatments are not successful.

New treatments continue to be developed. There are some newer medicines that have been introduced in the last few years that show promise to improve the outlook.

Further reading

- [Haematological cancers: improving outcomes](#); NICE Guidance (May 2016)
- [Hodgkin lymphoma](#); haematological malignancies, European Society for Medical Oncology (ESMO), 2017
- [Ansell SM](#); Hodgkin lymphoma: A 2020 update on diagnosis, risk-stratification, and management. *Am J Hematol.* 2020 Aug;95(8):978-989. doi: 10.1002/ajh.25856. Epub 2020 Jun 8.
- [Shah GL, Moskowitz CH](#); Transplant strategies in relapsed/refractory Hodgkin lymphoma. *Blood.* 2018 Apr 12;131(15):1689-1697. doi: 10.1182/blood-2017-09-772673. Epub 2018 Mar 2.

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