Small lymphocytic lymphoma (SLL)

Small lymphocytic lymphoma is a type of non-Hodgkin lymphoma (NHL). This information should ideally be read with our information about chronic lymphocytic leukaemia (CLL), which is essentially the same condition and is treated in the same way. Sometimes small lymphocytic leukaemia is called CLL/SLL.

On this page

- The lymphatic system
- Small lymphocytic lymphoma (SLL)
- Causes of SLL
- Signs and symptoms of SLL
- How SLL is diagnosed
- Staging and grading of SLL
- Treatment for SLL
- Clinical trials
- Your feelings
- Other useful organisations
- References and thanks

We hope this information answers your questions. If you have any further questions, you can ask your doctor or nurse at the hospital where you are having treatment.

The lymphatic system

SLL is a cancer of the lymphatic system. The lymphatic system is part of the body’s immune system and helps us fight infection. It's made up of organs such as the bone marrow, thymus, spleen, and the lymph nodes (or lymph glands). Lymph nodes are connected by a network of tiny lymphatic vessels that contain lymph fluid. There is also lymphatic tissue in other organs, such as the skin, lungs and stomach.

There are lymph nodes all over the body. As lymph fluid flows through the lymph nodes, the nodes collect and filter out anything harmful or anything the body doesn't need. This includes bacteria, viruses, damaged cells and cancer cells.
The lymphatic system

Lymph fluid contains cells called lymphocytes. These are a type of white blood cell that helps the body fight infection and disease.

Lymphocytes start to grow in the bone marrow, where blood cells are made. The two main types of lymphocyte are B-cells and T-cells. B-cells mature in the bone marrow, while T-cells mature in the thymus gland behind the breast bone. When they're mature, both B-cells and T-cells help fight infection.

Small lymphocytic lymphoma (SLL)

SLL is a cancer of the B-cells. It is rare in people under 50 and more common in men than in women. Because SLL usually develops very slowly, it is sometimes described as an indolent lymphoma.

SLL is the same condition as a type of leukaemia called chronic lymphocytic leukaemia (CLL). The only difference is that people with SLL have abnormal B-cells in their lymph nodes but not in their blood when they are diagnosed. And people with CLL have abnormal B-cells in their blood when they are diagnosed.

You may be diagnosed with SLL first, but doctors may later start calling your condition CLL if the number of white blood cells in your blood (white cell count) rises. This is nothing to be alarmed about and doesn’t mean the disease has changed or 'transformed' in any way.

Causes of SLL

The causes of small lymphocytic lymphoma are unknown. Like all cancers, it's not infectious and cannot be passed on to other people.

Signs and symptoms of SLL

The first sign is often a painless swelling in the neck, armpit or groin. This is caused by abnormal B-cells building up in the lymph nodes and making them bigger.

Other symptoms may include loss of appetite and tiredness. Some people have night sweats, high temperature (fever) and weight loss. These are known as B symptoms.

Abnormal B-cells may build up in the bone marrow, where your body makes blood cells. This can lead to
symptoms of anaemia. You may look pale and lack energy due to a lack of red blood cells. Or you may bleed or bruise easily if your bone marrow can't make enough blood clotting cells (platelets).

How SLL is diagnosed

The main test used to diagnose SLL is a lymph node biopsy. A doctor removes an enlarged lymph node and examines it under a microscope. This involves a small operation which can be done under local anaesthetic (you are awake but the area is numb) or general anaesthetic (you are asleep).

Additional tests, including blood tests, x-rays, scans and bone marrow samples, may be used to find out how far SLL has spread in the body. Doctors use this information to decide which treatment is most appropriate for you.

You can read more about these tests in our information about tests for chronic lymphocytic leukaemia (CLL).

Staging and grading of SLL

Staging

Doctors use staging to assess the extent of SLL. This helps them to know when treatment is needed and which treatment is appropriate for each person.

There are different staging systems that can be used for SLL. The following staging system is based on how many groups of lymph nodes are affected, where they are in the body, and whether other organs such as the bone marrow or liver are involved.

Stage 1

One group of lymph nodes is affected, for example in the armpit, on one side of the neck or in the groin.

Stage 2

Two or more groups of lymph nodes are affected. The affected lymph nodes are only in the top half of the body (above the diaphragm) or are only in the lower half of the body (below the diaphragm). The diaphragm is a sheet of muscle under the lungs that separates the chest from the abdomen.

Stage 3

The lymphoma is in lymph nodes above and below the diaphragm.

Stage 4

The lymphoma has spread beyond the lymph nodes to other organs, such as the bones, liver or lungs.

B symptoms

As well as giving each stage a number, doctors also use either the letter A or B to show whether or not you have specific symptoms. If you have night sweats, fevers or weight loss, the letter B is added next to the stage. If you don't have these symptoms, the letter A is added.

Another staging system that may be used is called the Binet system. It looks at how many areas of lymph nodes are enlarged and at the number of white blood cells, red blood cells and platelets in the blood.

Stage A - There are fewer than three areas of enlarged lymph nodes.

Stage B - There are three or more areas of enlarged lymph nodes.

Stage C - There are a reduced number of red blood cells, platelets or both.

There is information about how the Binet staging system is used to decide when treatment is started in our section on chronic lymphocytic leukaemia.

Treatment for SLL
If SLL is not causing symptoms, you may not need treatment immediately. Early treatment at this stage doesn’t increase a person’s life span and can cause side effects.

You will be seen regularly by your cancer specialist or GP, and treatment will be advised if you develop symptoms. It may be some time before this happens, and some people may never need any treatment.

After treatment, many people have a period of time with no signs of active disease known as remission. If the lymphoma comes back, it can be treated again. This can give another period of remission and the lymphoma can often be controlled in this way for many years.

Chemotherapy

Chemotherapy is the use of anti-cancer (cytotoxic) drugs to destroy cancer cells. It is an important treatment for small lymphocytic lymphoma and can often get it into remission.

Chemotherapy can be given as tablets or into a vein (intravenously). You may be given a single drug or you may be given two or more drugs together (combination chemotherapy). You can usually have chemotherapy as an outpatient.

Chemotherapy is often given in combination with a drug called rituximab (Mabthera ®), a monoclonal antibody that targets B-cells.

The drugs most often used to treat SLL are:

- chlorambucil (Leukeran ®)
- fludarabine (Fludara ®)
- cyclophosphamide
- bendamustine (Levact ®).

Chlorambucil is usually taken on its own. It comes as a tablet.

Fludarabine and cyclophosphamide can be given on their own, but are usually given together (as FC). They can be given as tablets or as an injection into a vein. A monoclonal antibody called rituximab may be given in combination with FC chemotherapy. This is called FCR or RFC treatment.

Bendamustine is sometimes used to treat SLL. It’s given as a drip into a vein (intravenously).

Monoclonal antibody therapy

Monoclonal antibodies are drugs designed to recognise certain proteins on the surface of cells. Monoclonal antibody treatments used for SLL are designed to destroy lymphocytes (B-cells and T-cells).

Rituximab (Mabthera ®)

Rituximab destroys B-cells. A nurse gives it as a drip into a vein (intravenous infusion). It is usually given with fludarabine and cyclophosphamide (as FCR).

Alemtuzumab (Campath ®)

Alemtuzumab destroys B-cells and T-cells. A nurse gives it as a drip into a vein (intravenous infusion) or as an injection under the skin (subcutaneous injection).

Steroids

Steroids are drugs that can be used to treat SLL and to relieve chemotherapy-related sickness.

Stem cell treatment (transplants)

Some people with lymphoma may have treatments using their own stem cells or stem cells from a donor. Stem cells are early blood cells that develop into all the other types of blood cell. This treatment is not suitable for everyone and is not done routinely. Doctors take into account a person’s general health and fitness when planning treatment.

Some people have some of their own stem cells collected and stored. This allows them to have higher doses of chemotherapy. After the chemotherapy, their stem cells are returned by a drip (like a blood transfusion) to help their blood cells recover from the effects of chemotherapy. This is called high-dose chemotherapy with
stem cell support.

Some people may have treatment using stem cells from another person (a donor). This is called a donor (allogeneic) stem cell transplant.

**Radiotherapy**

Radiotherapy is the use of high-energy rays to destroy cancer cells, while causing as little harm as possible to healthy cells.

It may be used as a first treatment if the abnormal B-cells are contained in one or two groups of lymph nodes in the same part of the body (stage 1). In some people, this may cure the SLL.

Radiotherapy can also be used to treat lymphoma that has come back in one area of lymph nodes.

**Clinical trials**

Research into treatments for SLL is going on all the time.

Several drugs are currently going through clinical trials. Some are designed to target particular things that are unique to the lymphoma. This type of treatment is called targeted therapy and it is hoped these drugs will be a useful addition to treatment for SLL in the future.

You may be invited to take part in a clinical trial. Your doctor will discuss the treatment with you so you have a full understanding of the trial and what it involves. You may decide not to take part or to withdraw from a trial at any stage. You will still receive the best standard treatment available.

**Your feelings**

You may have many different emotions including anger and resentment, guilt, anxiety and fear. These are all normal reactions and are part of the process many people go through in trying to accept and manage their condition.

Everyone has their own way of coping with difficult situations. Some people find it helpful to talk to family and friends, while others prefer to seek help from people outside their situation. Some people prefer to keep their feelings to themselves. There is no right or wrong way to cope, but help is there if you need it. Our cancer support specialists can give you information about counselling in your area.

**Other useful organisations**

**The Lymphoma Association**

The Lymphoma Association gives emotional support, advice and information on all aspects non-Hodgkin lymphoma. It has a national network of people with lymphoma and local groups.

**Leukaemia CARE**

Leukaemia CARE is a national group promoting the welfare of people with leukaemia and related blood disorders, including non-Hodgkin lymphoma. It has regional support groups in many counties.

**References and thanks**

This section has been compiled using information from a number of reliable sources, including:


**Thanks**

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Thanks to people like you

Thank you to all of the people affected by cancer who reviewed what you're reading and have helped our information to grow.

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