

Patient information from BMJ

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Non-Hodgkin lymphoma

It's worrying to learn that you have any type of cancer. But there are good treatments for non-Hodgkin lymphoma, which can often lead to a cure.

Here, we look at the most common type of non-Hodgkin lymphoma, called diffuse large B-cell lymphoma. You can use our information to talk to your doctor and decide which treatments are best for you.

What is non-Hodgkin lymphoma?

Non-Hodgkin lymphoma is a type of cancer that affects cells in your immune system.

When your body's cells are healthy, they divide, grow, and are replaced in an orderly way. When cells become cancerous, they grow too fast and do not develop properly. Abnormal cells form a lump called a tumor, which gets bigger over time.

- Non-Hodgkin lymphoma starts in cells called **lymphocytes**, which help your body fight infection. Tumors made of lymphocytes are called **lymphomas**.
- Lymphomas most often develop in **lymph nodes**, which are small collections of lymphocytes that occur naturally throughout your body. You may also hear them called **lymph glands**.
- If the affected lymph node is close to the skin (such as those in your neck, armpit, or groin), you may feel a lump. But lymphomas can also grow in lymph nodes deep inside your body where you can't feel them, such as the lymph nodes in your chest and abdomen.
- Lymphomas can also sometimes grow outside your lymph nodes. For example, they can grow in your stomach, bowels, and brain.

Your doctor might discuss with you what "stage" your cancer is at. This means how far your cancer has spread. For example, stage 1 and 2 cancers might only be in a small area, while stage 3 and 4 cancers are likely to have spread further. Later-stage cancers are harder to treat.

We don't know why some people get non-Hodgkin lymphoma. However, we do know that it's more common in:

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- people over the age of 50
- people who have a parent or sibling who had this cancer
- people who have problems with their immune system (for example, in people with HIV, or in people who have had an organ transplant).

There are more than 30 types of non-Hodgkin lymphoma. The information here is for adults with **diffuse large B-cell lymphoma**. If you are unsure what type of lymphoma you have, ask your doctor.

What are the symptoms?

The most common symptom is being able to feel one or more lumps in your neck, armpit, groin, or abdomen, or in your testicles if you're a man.

Some lumps get very big and grow fast, but others grow more slowly.

Some people get more general symptoms. These include:

- feeling very tired
- having a fever that makes you sweat badly at night
- losing your appetite, and
- losing weight.

Lymphomas can also cause other symptoms depending on where they grow. For example:

- if a lymphoma blocks your bowel, this can cause pain, nausea, and vomiting
- a lymphoma in the lungs can cause difficulty breathing
- if a lymphoma develops in your brain, you could get seizures or become forgetful and confused.

Non-Hodgkin lymphoma is not easy to diagnose from symptoms alone. To know for certain that you have this cancer, you will need to have a biopsy.

This is where a surgeon removes a piece of tissue from the affected area to test it for cancer cells. People often have a lymph node (or part of a lymph node) removed for testing.

What treatments work?

Chemotherapy is the main treatment for diffuse large B-cell non-Hodgkin lymphoma. You might also have radiation therapy.

You will be treated by a specialist cancer doctor.

Chemotherapy

Chemotherapy uses drugs to kill cancer cells. The type of chemotherapy most often used for non-Hodgkin lymphoma is a combination of drugs, called **CHOP**. It is a combination of four drugs.

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Many people have a slightly different treatment called **R-CHOP**, which includes a fifth drug.

You have chemotherapy in cycles. For each cycle you will have treatment, followed by a rest period with no R-CHOP or CHOP treatment.

Each cycle usually lasts 21 days. You will probably have three to eight cycles. The exact number and duration of these cycles will depend on the nature of your cancer and what other treatments you have (for example, you may have fewer cycles if you also have radiation therapy).

Chemotherapy will probably shrink your tumor and can cure it. Even if your cancer does not go away completely, chemotherapy can help you live longer.

You are likely to get some temporary side effects from these treatments, but you probably won't get all of them. The most common side effects from chemotherapy include:

- losing some or all of your hair
- nausea and vomiting
- feeling tired
- having low levels of blood cells that help fight infections, and
- and having discomfort when you pass urine.

Most of these side effects can be treated.

It's important that you tell your doctor if you have symptoms of a possible infection, such as a fever, chills, stomach pain, pain when urinating, or a cough.

Chemotherapy can also sometimes cause bleeding. You should let your doctor know if you have black stools (which suggests there is blood in your stools), or bleeding from your rectum, nose, gums, or (if you are a woman) vagina.

Additional medicines

Sometimes doctors recommend taking other medicines along with R-CHOP. These are usually offered to prevent possible problems either from your cancer or from the chemotherapy. Not everyone will need these treatments. You and your doctor will discuss what's right for you.

- Most people treated with CHOP will also have a treatment called a **growth factor**. CHOP kills cancer cells, but it also kills some of your normal cells that help fight infections. Growth factors help your body to make more of these cells.
- If you end up very low on cells that fight infections, your doctor may recommend taking **antibiotics** for a while to help prevent infections caused by bacteria.
- Your doctor may also recommend other treatments, including medicines to lower the chance of lymphoma coming back in your brain and spinal cord.

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Radiation therapy

Sometimes people have radiation therapy after chemotherapy for non-Hodgkin lymphoma. Your doctor may recommend this treatment if:

- you have lymphoma in a single area
- the lymphoma is large, or
- some lymphoma may still be remaining at the end of chemotherapy.

Radiation therapy uses high-energy x-rays to kill cancer cells. Each treatment lasts only a few minutes, and you won't feel anything during treatment. Most people need treatment five days a week for several weeks.

Adding radiation therapy to chemotherapy may help get rid of your lymphoma and help you live longer than having chemotherapy alone. But not everyone needs radiation therapy.

Radiation therapy can damage normal cells as well as cancer cells. So doctors are careful to aim the radiation directly at your tumor.

The most common short-term side effects include having itchy skin where you have been treated, and feeling tired.

Radiation therapy can also sometimes cause long-term problems. But these aren't common and they depend on the part of your body treated. Your doctor will discuss possible side effects with you.

What will happen to me?

Cancer affects every person differently. Your cancer specialist or cancer nurse is the best person to talk to about your future outlook.

About 80 in 100 people whose non-Hodgkin lymphoma is diagnosed at an early stage can be cured. Cancers diagnosed at late stages can still be cured, but they are harder to treat.

Your doctor or nurse may use the word "remission". Being in remission means that treatment has worked and doctors can no longer detect your cancer. You can think of yourself as cured when you have been in remission for five years.

Like many other cancers, non-Hodgkin lymphoma can come back after it's been treated. When a cancer comes back it's called having a relapse.

No-one can tell you for certain if your lymphoma will come back. But it is rare for non-Hodgkin lymphoma to relapse after two years.

If your cancer does come back, you can have more treatment. You may need a different type of chemotherapy, or more intense chemotherapy.

You might also need a stem cell or bone marrow transplant, which can help your body recover from intense chemotherapy. Many people who have a relapse can still be cured.

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