

Waldenström macroglobulinaemia (WM)

Waldenström macroglobulinaemia (WM) is a slow-growing and rare form of blood cancer.

This fact sheet explains what WM is, how it's diagnosed and treated, and suggests where to go for more information.



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What is WM?

WM (sometimes called lymphoplasmacytic lymphoma) is a slow-growing and rare type of non-Hodgkin lymphoma (NHL). It affects your plasma cells.

Plasma cells are blood cells that release antibodies to help you fight infection. They develop from a type of white blood cell called B lymphocytes (or B cells). These cells are made in your bone marrow (a soft, spongy substance found inside some of your bones).

If you have WM, some of your B cells don't change into plasma cells. Instead, they make cells known as lymphoplasmacytic (LPL) cells. These cells can cause two main problems:

- If too many LPL cells build up in your bone marrow, they can stop healthy blood cells being made. LPL cells can also

clump together in your lymph nodes (glands), your spleen (a fist-sized organ on the left side of your body, behind your ribs), and other organs.

- LPL cells release large amounts of a protein called immunoglobulin M or IgM (also called paraprotein). This thickens your blood (known as hyperviscosity) and can stop it flowing easily through some of your blood vessels.

You could read this fact sheet alongside our booklet **Low-grade non-Hodgkin lymphoma (NHL)**. To order or download a copy, visit **bloodcancer.org.uk/information**

What causes WM?

WM is very rare. Around 350 people are diagnosed with WM in the UK each year. There's no clear cause of WM, but certain factors can affect how likely you are to develop it:

- **Age** – WM usually affects adults over 65 years old.
- **Sex** – WM is more common in men than women.
- **Family history** – You're more likely to develop the condition if you have a relative with WM, although this is very rare. Your risk may also be higher if you have a family history of autoimmune conditions (where your body mistakenly attacks healthy cells, such as Sjögren syndrome), or certain infectious diseases.
- **Ethnicity** – People from a white European background tend to have a higher risk of developing WM.

What are the symptoms?

The most common symptoms of WM include:

- extreme tiredness (fatigue)
- long-lasting or frequent infections.

LPL cell build-up in the body

If too many LPL cells have built up in your bone marrow, you may experience:

- anaemia (not enough red blood cells in the blood)
- breathlessness
- bruising or bleeding
- pancytopenia (a condition where you don't have enough red blood cells, white blood cells or platelets).

If you have a lump in your lymph nodes, spleen or other organs, you may also experience swellings in your neck, armpits or groin (known as lymphadenopathy).

Large amounts of IgM in the blood

If you have too much IgM in your blood, causing it to become thick, you may also suffer from:

- headaches
- dizziness
- confusion
- nosebleeds
- blurred vision
- kidney problems.

Other symptoms

People with WM may also have certain symptoms known as B symptoms, which can include:

- unexplained weight loss
- heavy sweating
- fever (high temperature).

Large amounts of IgM in the blood can cause damage to your nerves, known as neuropathy. This can lead to pain or numbness, often in the legs and feet.

Asymptomatic WM

Some people have no symptoms when they are diagnosed. This is known as asymptomatic or smouldering WM.

How is WM diagnosed?

To find out if you have WM, you may need to have blood tests, urine tests, CT scans, a bone marrow biopsy, and cytogenetic testing of blood or bone marrow samples.

Blood tests

You'll have a sample of your blood taken using a needle. This is used to:

- measure the amount of IgM in your blood
- count the number of normal blood cells (known as a full blood count)
- check that your liver and kidneys are working properly.

Bone marrow biopsy

If your blood test results aren't in the normal range, you may be asked to have a bone marrow biopsy. For this test, you'll have a minor procedure where a small sample of bone marrow will be taken from part of your hip bone (your pelvis). This is sent to a laboratory to check for LPL cells. If these cells are found, it's a strong sign you have WM.

You'll be given a local anaesthetic to numb the area during the test, but it may feel a little uncomfortable. You can normally have this done as an outpatient, so you won't have to stay in hospital overnight.

CT scans

This test uses a series of x-rays from different angles to create a 3D image of your organs. This can be used to see if your lymph nodes are normal and to check your liver, kidneys and spleen for signs of WM.

Cytogenetic testing

In around nine out of ten cases of WM, there's an error (known as a mutation) in a gene called MYD88. Genes are part of your DNA and are found in all the cells of your body. In a smaller number of people, a gene called CXCR4 is also affected.

Your doctors may use cytogenetic testing (also called gene testing) to look for mutations in your genes and help diagnose your condition. Cytogenetic testing can be done using a blood sample.

How is WM treated?

The type of treatment you'll need will depend on how far your WM has developed.

Watch and wait

If you don't have many symptoms when you're diagnosed, and the WM isn't affecting your general health or wellbeing, you may not need treatment straight away. Instead, you'll be put on 'watch and wait' and have regular check-ups every three to six months.

For more information about watch and wait, go to **[bloodcancer.org.uk/watch-and-wait](https://www.bloodcancer.org.uk/watch-and-wait)**

Plasma exchange

If there's a large amount of IgM in your blood and it becomes too thick, plasma exchange treatment (also called plasmapheresis) can be used to thin your blood and help it flow better through your blood vessels.

This treatment takes a few hours each time and uses a machine called a cell separator to remove the IgM from your blood.

Chemotherapy

If you do need treatment, chemotherapy is the main treatment type for WM. Chemotherapy uses anti-cancer drugs to kill cancer cells or stop them growing.

There are many different drugs used in chemotherapy. The drugs you get will depend on how well your body can cope with the treatment and how fast the cancer is growing. You may be given any of the drugs listed below. They may be given in combination (more than one given at once).

Rituximab

This is used in most drug combinations for WM. It targets your B cells and helps your immune system to destroy the LPL cells. When this treatment is combined with chemotherapy, it's called chemoimmunotherapy.

Steroids

Steroids (such as prednisolone or dexamethasone) can also be given to make the chemotherapy work better.

Alkylating agents

Bendamustine and cyclophosphamide are both examples of alkylating agents. They help to stop the LPL cells growing and dividing by interfering with DNA inside the cell. DNA is present in every cell of your body and controls what each cell does.

Anti-metabolites

Anti-metabolites (such as fludarabine) stop cells making and repairing DNA. This means that the LPL cells can't grow and divide.

Bortezomib

This drug makes proteins build up in a cell, causing the cell to die. LPL cells are sensitive to bortezomib, so it can be used to stop them growing.

Other drugs

Your doctor may give you other drugs that help support your chemotherapy and keep you as healthy as possible during your treatment. Some of these drugs are given through one of your veins (intravenously) or injected just under your skin (subcutaneously).

New drugs called targeted therapy drugs can block specific proteins in cancer cells to stop them growing. An example is ibrutinib. Ibrutinib capsules are taken once a day and are swallowed with a glass of water. This treatment can be used for people who are unable to have chemoimmunotherapy, or for people who have previously received other treatments or WM.

Stem cell transplant

If the WM doesn't respond well to chemotherapy or chemoimmunotherapy, or if the disease comes back quickly, you may be offered a stem cell transplant.

Chemotherapy destroys cancer cells, but it also damages your bone marrow where new blood cells (stem cells) are made. If you are offered a stem cell transplant, it means you can have higher doses of chemotherapy to attack the cancer, because your stem cells will be replaced afterwards by the stem cell transplant.

During this treatment, you can have your own stem cells given back to you (known as an autologous stem cell transplant) or you can have stem cells from another person (known as a donor or allogeneic stem cell transplant). The cells are usually given to you through a drip (transfusion).

Although a stem cell transplant can be a very effective treatment, it does carry some risks, and it's not suitable for everyone with WM. Talk to your healthcare team about which treatments are an option for you.

For more information on stem cell transplants, see our booklet **Blood stem cell and bone marrow transplants: The seven steps**. To order or download, visit bloodcancer.org.uk/information

Follow-up

After treatment, you'll need to have follow-up appointments with your GP or hospital haematology department to check the levels of IgM in your blood. This can be done through a blood test. You and your doctors will also need to look out for any new symptoms.

What's the outlook?

Around six in ten people with WM who have no symptoms when they're diagnosed will go on to develop symptoms within five years.

Your personal outlook will depend on a range of things, such as your age at diagnosis, and the amount of platelets and IgM in your blood. If this is something you want to know more about, speak to your healthcare team, as they know your individual situation.

New drugs and drug combinations are improving outlook all the time, both for people starting their first treatment and for people whose WM has come back.

About this fact sheet

We have produced this fact sheet in collaboration with expert medical professionals and people affected by blood cancer. Thank you to Dr Robert Marcus and Dr Rebecca Auer for their support checking the content of this fact sheet.

Our fact sheets contain general information. Always listen to the advice of your specialist about your individual condition because every person is different.

A list of references used in this fact sheet is available on request.
Please email information@bloodcancer.org.uk

Disclaimer

We make every effort to make sure that the information in this fact sheet is accurate, but you shouldn't rely on it instead of a fully trained clinician. It's important to always listen to your specialist and seek advice if you have any concerns or questions about your health. Blood Cancer UK can't accept any loss or damage resulting from any inaccuracy in this information, or from external information that we link to.

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