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About Waldenstrom Macroglobulinemia

Overview and Types

If you have been diagnosed with Waldenstrom macroglobulinemia or are worried about it, you likely have a lot of questions. Learning some basics is a good place to start.

- [What Is Waldenstrom Macroglobulinemia?](#)

Research and Statistics

See the latest estimates for new cases of Waldenstrom macroglobulinemia in the US and what research is currently being done.

- [Key Statistics About Waldenstrom Macroglobulinemia](#)
- [What's New in Waldenstrom Macroglobulinemia Research?](#)

What Is Waldenstrom Macroglobulinemia?

Waldenstrom macroglobulinemia (WM) is a type of [non-Hodgkin lymphoma](#)¹ (NHL). The cancer cells make large amounts of an abnormal protein (called a **macroglobulin**). Another name for WM is **lymphoplasmacytic lymphoma**. This condition used to be called Waldenstrom's macroglobulinemia, so some people refer to it as Waldenstrom's.

To understand WM, it helps to know about the functions of lymphoid tissue in the body.

Lymphoid tissue and the immune system

Lymphoid tissue is made up several types of immune system cells that work together to help the body resist infections. Lymphoid tissue is found in many places in the body:

- Lymph nodes, which are pea-sized collections of immune system cells throughout the body, including in the underarm area, in the groin, on the sides of the neck, and inside the chest and abdomen
- Bone marrow, the soft inner part of certain bones where new blood cells are made
- The thymus, a small organ behind the chest bone and in front of the heart
- The spleen, an organ on the left side of the abdomen next to the stomach
- The tonsils and adenoids in the throat
- Throughout body systems like the digestive system and respiratory system

Lymphocytes (lymph cells) are the main cells of lymphoid tissue. The 2 main types of lymphocytes are:

- **B lymphocytes (B cells)** respond to an infection by changing into a different type of cell called a **plasma cell**. Plasma cells make proteins called antibodies (also called immunoglobulins) that help the body attack and kill disease-causing germs like bacteria.
- **T lymphocytes (T cells)** help direct immune responses, but they also can kill invading germs directly.

Waldenstrom macroglobulinemia

WM is a cancer that starts in B cells. The cancer cells in people with WM are similar to those of 2 other types of cancer: [multiple myeloma](#)² and [non-Hodgkin lymphoma](#)³.

Multiple myeloma is considered a cancer of plasma cells, and non-Hodgkin lymphoma is a cancer of lymphocytes. WM cells have features of both plasma cells and lymphocytes and are called lymphoplasmacytoid.

WM cells make large amounts of a certain type of antibody (immunoglobulin M, or IgM), which is known as a **macroglobulin**. Each antibody (protein) made by the WM cells is the same, so it is called a **monoclonal protein**, or just an **M protein**. The buildup of this M protein in the body can lead to many of the symptoms of WM, including excess

bleeding, problems with vision, and nervous system problems.

The WM cells grow mainly in the bone marrow, where they can crowd out the normal cells that make the different types of blood cells. This can lead to low levels of red blood cells (called [anemia](#)⁴), which can make people feel tired and weak. It can also cause low numbers of white blood cells, which makes it hard for the body to fight infection. The numbers of platelets in the blood can also drop, leading to increased bleeding and bruising.

Lymphoma cells can also grow in organs like the liver and spleen, causing these organs to swell and leading to abdominal pain. (For more on the symptoms of WM, see [Signs and Symptoms of Waldenstrom Macroglobulinemia](#)⁵.)

Hyperlinks

1. www.cancer.org/cancer/non-hodgkin-lymphoma.html
2. www.cancer.org/cancer/multiple-myeloma.html
3. www.cancer.org/cancer/non-hodgkin-lymphoma.html
4. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/low-blood-counts/anemia.html
5. www.cancer.org/cancer/waldenstrom-macroglobulinemia/detection-diagnosis-staging/signs-symptoms.html

References

Freedman AS, Jacobson CA, Mauch P, Aster JC. Chapter 103: Non-Hodgkin's Lymphoma. In: DeVita VT, Hellman S, Rosenberg SA, eds. *Cancer: Principles and Practice of Oncology*. 10th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2015.

Rajkumar SV, Dispenzieri A. Chapter 104: Multiple myeloma and related disorders. In: Niederhuber JE, Armitage JO, Dorshow JH, Kastan MB, Tepper JE, eds. *Abeloff's Clinical Oncology*. 5th ed. Philadelphia, Pa: Elsevier; 2014.

See all references for Waldenstrom Macroglobulinemia
(www.cancer.org/cancer/waldenstrom-macroglobulinemia/references.html)

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Key Statistics About Waldenstrom Macroglobulinemia

Waldenstrom macroglobulinemia (WM) is rare, with an incidence rate of about 3 cases per million people per year in the United States. About 1,000 to 1,500 people are diagnosed with WM each year in the United States.

WM is more common in men than it is in women, and it is much more common among whites than African Americans.

There are few cases of WM in younger people, but the chance of developing this disease goes up as people get older. The average age of people when they are diagnosed with WM is 70.

Statistics on survival are discussed in [Survival Rates for Waldenstrom Macroglobulinemia¹](#).

Hyperlinks

1. www.cancer.org/cancer/waldenstrom-macroglobulinemia/detection-diagnosis-staging/survival-rates.html

References

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What's New in Waldenstrom Macroglobulinemia Research?

Research into the [causes](#)¹, [prevention](#)², and [treatment](#)³ of Waldenstrom macroglobulinemia (WM) is being done in many medical centers throughout the world.

Genetics

Scientists are making great progress in understanding how changes in DNA can cause normal lymphocytes to develop into WM cells. For example, in most people with WM, the cancer cells have been found to have changes in the *MYD88* gene. More recently, a smaller percentage of WM cells have been found to have changes in the *CXCR4* gene. Changes in these genes have been linked with a greater chance of WM causing symptoms and requiring treatment, and seem to affect survival as well. Researchers are now looking to develop drugs that can target cells with these gene changes. Some of these drugs are now in early clinical trials.

Chemotherapy and targeted therapies

Many new drugs to treat WM are being studied in [clinical trials](#)⁴, as well as ways to use drugs already known to be effective by combining them in new ways, using different doses, or different sequences of drugs, one after another.

Some of the newer types of drugs that have shown promise or are being tested in WM include:

- mTOR inhibitors, such as temsirolimus (Torisel)
- Proteasome inhibitors, such as ixazomib , carfilzomib (Kyprolis), and oprozomib
- Histone deacetylase (HDAC) inhibitors, such as panobinostat, romidepsin (Istodax), and belinostat (Beleodaq)
- Bruton tyrosine kinase (BTK) inhibitors, such as ACP-196, and AVL-292
- PI3K inhibitors, such as idelalisib (Zydelig) and buparlisib (BKM120)
- Aurora kinase inhibitors, such as alisertib
- BCL-2 inhibitor such as ABT-199
- A CXCR4 antibody such as ulocuplumab

Biological therapy

Another newer approach to WM treatment is the use of **biological response modifiers** that stimulate the patient's immune system to attack and destroy the lymphoma cells.

For example, it has recently been found that the bone marrow support tissues (stromal cells) make a substance called interleukin 6 (IL-6). IL-6 is a strong growth factor for multiple myeloma cells. IL-6 also helps cause the bone destruction seen in myeloma. Some current research efforts are trying to develop ways to block these functions of IL-6.

Bone marrow and peripheral blood stem cell transplant

Researchers are continually improving [bone marrow and peripheral blood stem cell transplant methods](#)⁵, as well as trying to determine how helpful this type of treatment can be for people with WM.

Vaccines

Doctors know it is possible for people with cancer to develop immune responses to their cancer. In rare instances, people's immune systems have rejected their cancers, and they have been cured. Scientists are now studying ways to boost this immune reaction by using vaccines.

Unlike vaccines used to prevent infections, these vaccines create an immune reaction against the lymphoma cells in patients who have very early disease or whose disease is in remission but could come back or relapse. This is a major area of research in treating

lymphomas (including WM), but it is still being tested in clinical trials. You might want to consider enrolling in one of these studies.

Hyperlinks

1. www.cancer.org/cancer/waldenstrom-macroglobulinemia/causes-risks-prevention/what-causes.html
2. www.cancer.org/cancer/waldenstrom-macroglobulinemia/causes-risks-prevention/prevention.html
3. www.cancer.org/cancer/waldenstrom-macroglobulinemia/treating.html
4. www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html
5. www.cancer.org/cancer/waldenstrom-macroglobulinemia/treating/stem-cell-transplantation.html

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