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## **Waldenström's Macroglobulinemia - Diagnosis [1]**

**This section has been reviewed and approved by the [Cancer.Net Editorial Board](#) [2], 12/2014**

**ON THIS PAGE:** You will find a list of the common tests, procedures, and scans that doctors can use to find out what's wrong and identify the cause of the problem. To see other pages, use the menu on the side of your screen.

Doctors use many tests to diagnose cancer and find out if it has spread to another part of the body, called metastasis. Some tests may also determine which treatments may be the most effective. For most types of cancer, a biopsy is the only way to make a definitive diagnosis of cancer. If a biopsy is not possible, the doctor may suggest other tests that will help make a diagnosis. Imaging tests may be used to find out whether the cancer has spread. This list describes options for diagnosing this type of cancer, and not all tests listed will be used for every person. Your doctor may consider these factors when choosing a diagnostic test:

- Age and medical condition
- Type of cancer suspected
- Signs and symptoms
- Previous test results

In addition to a physical examination, the following tests may be used to diagnose Waldenstrom's macroglobulinemia:

**Blood tests.** [3] Blood tests, such as a CBC (complete blood count) with a differential (classification of the types of white cells) and an examination of the blood with a microscope, can help your doctor diagnose Waldenstrom's macroglobulinemia. There is also an increase in IgM that can be detected by protein electrophoresis, which is a method of separating proteins in the blood with an electric field.

**Biopsy.** A biopsy is the removal of a small amount of tissue for examination under a microscope. Other tests can suggest that cancer is present, but only a biopsy can make a definite diagnosis. The sample removed during the biopsy is analyzed by a pathologist. A pathologist is a doctor who specializes in interpreting laboratory tests and evaluating cells, tissues, and organs to diagnose disease. The type of biopsy performed depends on the location of the cancer.

The most common type of biopsy for Waldenstrom's macroglobulinemia is either a bone marrow biopsy or a biopsy of the lymph nodes in the neck, under the arms, or in the groin. A biopsy may also be taken from the chest or abdomen while using a computed tomography (CT or CAT) to guide the doctor. A biopsy can also be taken from the stomach or intestine during an endoscopy, a test that allows the doctor to see inside the body using a thin, lighted, flexible tube called an endoscope. More information on bone marrow biopsy and a CT scan is below.

**Bone marrow aspiration and biopsy.** Lymphoma often spreads to the bone marrow, the spongy material in the center of bones where blood cells are produced. A sample of the bone marrow can be important to diagnose Waldenstrom's macroglobulinemia, and it can help determine if the cancer has spread.

A bone marrow aspiration and biopsy are similar and often done at the same time to examine the bone marrow. Bone marrow has both a solid and a liquid part. A bone marrow aspiration removes a sample of the fluid with a needle. A bone marrow biopsy is the removal of a small amount of solid tissue using a needle. The sample(s) are then analyzed by a pathologist. A common site for a bone marrow aspiration and biopsy is the pelvic bone, which is located in the lower back by the hip. The skin in that area is numbed with medication to block the awareness of pain, and other types of anesthesia may be used.

Tests from the biopsy may be used to examine proteins on the tumor cells in order to distinguish Waldenstrom's from other types of B-cell lymphomas. These types of tests are called immunohistochemistry and/or flow cytometry.

**Molecular testing of the tumor.** Your doctor may recommend running laboratory tests on a tissue sample and/or bone marrow sample to identify specific genes, proteins, and other factors unique to the tumor. Molecular tests can also help distinguish Waldenstrom's from other B-cell lymphomas. See the [Treatment Options](#) [4] section for more information.

**[CT or CAT scan](#)** [5]. A CT scan creates a three-dimensional picture of the inside of the body with an x-ray machine. A computer then combines these images into a detailed, cross-sectional view that shows any abnormalities, tumors, enlarged lymph nodes, or a swollen spleen. A CT scan can also be used to measure the size of a tumor, lymph node, or spleen. Sometimes, a special dye called a contrast medium is given before the scan to provide better detail on the image. This dye can be injected into a patient's vein or given as a pill to swallow.

**[Magnetic resonance imaging \(MRI\) scan](#)** [6]. An MRI uses magnetic fields, not x-rays, to produce detailed images of the body. MRI can also be used to measure the tumor's size. A

special dye called a contrast medium is given before the scan to create a clearer picture. This dye can be injected into a patient's vein or given as a pill to swallow.

**[Positron emission tomography \(PET\) scan](#)** [7]. A PET scan is a way to create pictures of organs and tissues inside the body. A small amount of a radioactive sugar substance is injected into the patient's body. This sugar substance is taken up by cells that use the most energy. Because cancer tends to use energy actively, it absorbs more of the radioactive substance. A scanner then detects this substance to produce images of the inside of the body.

After diagnostic tests are done, your doctor will review all of the results with you. If the diagnosis is cancer, these results also help the doctor describe the cancer; this is called staging.

*The next section helps explain the different stages for this type of cancer. Use the menu on the side of your screen to select Stages, or you can select another section, to continue reading this guide.*

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#### **Links**

[1] <http://www.cancer.net/cancer-types/waldenstrom%E2%80%99s-macroglobulinemia/diagnosis>

[2] <http://www.cancer.net/about-us>

[3] <http://www.cancer.net/node/24716>

[4] <http://www.cancer.net/node/19329>

[5] <http://www.cancer.net/node/24486>

[6] <http://www.cancer.net/node/24578>

[7] <http://www.cancer.net/node/24648>