



# MYELOMA



## WHAT YOU NEED TO KNOW

You or your loved one has been diagnosed with myeloma.  
What does it mean and how will it affect you?

This fact sheet will help you:

Learn about  
myeloma and how  
it is diagnosed

Get an overview  
of treatment  
options

Understand what  
happens next

**Plasma cells are white blood cells that make antibodies to fight infection. They are part of your body's natural defenses.**

## What is myeloma?

Myeloma is a cancer of the plasma cells. Myeloma occurs when B lymphocytes (B-cells), a special type of white blood cell found in bone marrow, produce abnormal protein (monoclonal protein). Myeloma cells are usually found in your bone marrow, but they may also accumulate in any part of your body, including skin, muscles, blood, or lungs. These accumulations are known as plasmacytomas.

The most common form of myeloma is **multiple myeloma**, which involves multiple tumours.

### Signs and symptoms

The most common symptoms of myeloma are bone pain and fatigue. You may experience:

- Thirst, frequent urination, upset stomach, bone pain, confusion, and muscle weakness
  - When your calcium levels in your blood are high
- Fatigue, shortness of breath during normal physical activities, dizziness, and pale complexion
  - When your red blood cell count is low (anemia)
- Kidney problems, including renal failure
  - Caused by monoclonal protein deposits in your kidneys
- Abnormalities, fractures, or other damage to your bones
  - Myeloma can cause osteoporosis or thinner, weaker bones

### About myeloma

- Can grow slowly with no symptoms, or may include symptoms and signs
- Most often appears in people over the age of 50
- Occurs more often in men
- Usually has no obvious cause

Advances in myeloma treatment are extending survival and improving quality of life. Although myeloma is incurable, less toxic and more targeted therapies are making it possible for more people to manage myeloma and live longer with a better quality of life.



## After your diagnosis

With your diagnosis, your doctor can determine the right treatment for you. Your test results help your doctor predict how your myeloma will likely progress and how you may respond to treatment.

Name of test	Description
<b>Medical history and physical exam</b>	Doctors review past illnesses, injuries, and symptoms. They examine your lungs, heart, and organs. They will also check for infection and discuss bone pain or fractures (breaks) with no known cause.
<b>Bone marrow aspiration and biopsy</b>	These two tests look at bone marrow cells to see if there are myeloma cells. They are usually done at the same time.
<b>X-rays and computed tomography (CT) scan</b>	A CT scan uses a computer linked to an x-ray machine to make a series of detailed pictures of areas inside the body. Your doctor will use these tests to see if there are holes, breaks, or thinning of the bones.
<b>Magnetic resonance imaging (MRI) scan</b>	An MRI scan uses magnets and radio waves to create images of your organs and tissues. Doctors may request a scan of your head and/or spinal cord to look for changes in the bone marrow and pockets of myeloma cells.
<b>PET scan (positron emission tomography)</b>	This test uses radioactive material to create a 3D image of your cells to look for changes in the bone marrow and pockets of myeloma cells.
<b>Lab tests</b>	These tests look for a protein called M protein (monoclonal protein). Myeloma often causes you to have large amounts of M protein in your blood or urine.

## Stages of myeloma

Identifying the stage of your disease is an important step to determine your risk group and prognosis. This will help plan your treatment. The stage of myeloma refers to how your disease has progressed. It does not determine how well you will respond to treatment.

Your doctor will determine the stage of your disease using one of these staging systems:

<b>Revised International Staging System</b>	<ul style="list-style-type: none"><li>The <b>Revised International Staging System</b> uses blood tests (cytogenetics). Staging depends on the levels of proteins found in the blood:<ul style="list-style-type: none"><li>o Albumin, the main protein found in plasma, helps to maintain blood volume</li><li>o Beta-2 microglobulin, which plays a role in how your immune system responds to myeloma</li><li>o LDH levels are used as indicators of tissue damage</li></ul></li></ul>
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- International Staging System**
- The **International Staging System** uses the results of two blood tests for staging: albumin level and beta-2-microglobulin level.
  - **Stage 1:** The beta-2-microglobulin level is less than 3.5 mg/L and the albumin level is 35 g/L or more
  - **Stage 2:** The beta-2-microglobulin level is less than 3.5 mg/L and the albumin level is less than 35 g/L, or the beta-2-microglobulin level is more than 3.5 mg/L but less than 5.5 mg/L with any level of albumin
  - **Stage 3:** The beta-2-microglobulin level is 5.5 mg/L or more with any level of albumin

## Myeloma treatment

Your treatment is based on the stage of your disease and whether or not you're eligible for a stem cell transplant. The goal of treatment is to put your disease into remission, when you no longer have evidence of myeloma cells in your body.

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| <b>Types of treatment</b> | <ul style="list-style-type: none"><li>• <b>Watch and wait</b> is the typical treatment for people with slow growing (asymptomatic) myeloma.</li><li>• <b>Combination drug therapy</b> uses two or more medications to treat myeloma for patients who are not candidates for transplant.</li><li>• <b>Chemotherapy and stem cell transplantation</b> use high doses of chemotherapy drugs to treat myeloma, followed by a transplant of your own stem cells to slow the growth of your disease.</li><li>• <b>Radiation therapy</b> uses x-rays or other high-energy rays. This treatment is used for a localized or solitary plasmacytoma.</li></ul> |
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| <b>Factors that affect treatment</b> | <p>Discuss your treatment options with your doctor to make sure you understand the benefits and risks of each approach. Your treatment plan is based on:</p> <ul style="list-style-type: none"><li>• Age and overall health status</li><li>• Ability to tolerate intensive therapy</li><li>• Stage and characteristics of the disease</li><li>• How fast the disease is progressing</li><li>• If you have other conditions, such as heart or kidney disease, diabetes, or neuropathy</li></ul> |
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## Treatment side effects

When you begin your treatment for myeloma, you may experience reactions to it. New drugs and therapies can help control most side effects. Speak to your doctor if you are experiencing side effects.

### Common side effects

You may experience side effects such as:

- Fatigue, a common side effect caused by your treatment or from anemia (low red blood cells).
- Infection from plasma cells not making antibodies to fight infection. This may weaken other parts of your immune system.
- Bone pain caused by bone thinning, lesions, fractures, or bones pressing on the nerves.
- Kidney damage because of excess protein in your urine.
- High levels of calcium or uric acid in your blood. This can cause dehydration.

### Living with myeloma

Medical follow-up is important with myeloma. Your medical team should provide you with a care plan listing the frequency of follow-up visits and the tests you will have at those visits.

Regular screenings for cancer are important. Myeloma is associated with an increased risk of developing acute myeloid leukemia, especially after receiving treatment with certain chemotherapy drugs.



Seek medical help if you feel “down” or “blue” or don’t want to do anything – and your mood does not improve over time. These could be signs of depression, an illness that should be treated even when you’re undergoing treatment for myeloma. Treatment for depression has important benefits for people living with cancer. Remember, you are not alone.

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