

## What is Multiple Myeloma and How Is It Treated?



Myeloma, also known as multiple myeloma, is a form of cancer that attacks white blood cells. This disease commonly occurs in African Americans, mainly men aged 66 and over. However, it can strike in anyone who is over the age of 45. In most cases, patients may not feel any symptoms of the disease.

It becomes apparent a patient has the disease once their doctor performs routine blood and urine tests and find higher than normal protein levels in the sample. A few patients experience bone pain, fever, or fatigue. If you are over the age of 45 and suspect that you may have symptoms of myeloma, it is best to express your concerns with a physician who will check for the presence of the disease.

### What is Multiple Myeloma?

White blood cells, or plasma cells, protect the body from infection by making antibodies. Plasma originates in the bone marrow and is primarily water, but it also includes a small amount of proteins. What becomes problematic with plasma in myeloma patients is that these proteins start to grow uncontrollably, disturbing the natural balance within the blood cells.

The abnormal growth of proteins will increase at such a rapid rate that the proteins push healthy blood out of the bone marrow. The antibodies within the plasma are then no longer helpful. Instead, they start to erode your bones and may begin to damage your organs if not treated in time.

## What are the causes of Multiple Myeloma?

Doctors are not sure what causes multiple myeloma, nor is there a cure for it. Scientists have discovered that changes in DNA may be the underlying reason why myeloma forms. DNA has instructions for controlling cell growth and cell division.

However, in patients with myeloma, a mutation in the DNA disrupts these instructions. It disrupts the natural processes for oncogenes (genes that promote cell growth) and tumor suppressor genes (genes that slow cell growth and have them die at the appropriate time).

The disruption of instructions within DNA cells causes abnormalities in the cells of myeloma patients. Normal human cells have 46 chromosomes. However, in patients with myeloma, there may be extra chromosomes present or some missing. In patients diagnosed with myeloma, there are typically parts of chromosome number 17 missing. These missing parts of the DNA make it difficult for doctors to treat the disease.

Although there aren't any definitive causes for the disease, here are a few things that may put you at [higher risk for myeloma](#):

- Over the age of 65
- Male
- African American
- Overweight
- Exposure to radiation
- Family history of the disease

This disease causes approximately [12,410 deaths per year](#). Life expectancy after diagnosis with this type of cancer is five years. Only about 54 percent of patients diagnosed with myeloma live for five years after the diagnosis. However, this percentage may increase if the patient gets treatment early.

## Treatments for Multiple Myeloma

Diagnosis of myeloma does not have to be a death sentence. With the proper treatments at the early stages of the disease, you may be able to beat the odds. Here are a few ways that [doctors treat myeloma](#).

### Local Treatments

Your doctor may prescribe local treatments such as radiation therapy. This method uses high-energy rays to eradicate cancer cells. Radiation treatment is best for patients who have brittle bones at risk for breaking due to deterioration caused by advanced myeloma. It also prevents paralysis. Patients who undergo radiation therapy may experience fatigue, nausea, low blood counts, skin changes, or diarrhea. However, these symptoms improve once treatment ends.

### Medications for Multiple Myeloma

Physicians use many drugs to treat multiple myeloma. Here are the most common ones used:

- Chemotherapy
- Corticosteroids (steroids)
- Immunomodulating agents
- Proteasome inhibitors

- Histone deacetylase (HDAC) inhibitors
- Monoclonal antibodies
- Antibody-drug conjugates
- Nuclear export inhibitor
- Using these drugs together to treat multiple myeloma
- Bisphosphonates for bone disease

These drugs may eliminate cancer cells, strengthen bones, or control protein overgrowth. Patients may take these drugs alone or in conjunction with others on this list.

#### Other Treatments

Another myeloma treatment is chimeric antigen receptor (CAR) T-cell therapy. It helps your body's immune system fight off cancer cells. This treatment can have severe or life-threatening side effects, however. Stem cell transplant is another way to treat myeloma by using chemotherapy to kill the cancer cells and replacing the dead cells with healthy new blood-forming cells. The drawback to this treatment is low blood counts and serious infections.

Although there is no cure for multiple myeloma and life expectancy is low, you can still improve your chances of living longer by seeking treatments. Your doctor will prescribe the best treatment according to the stage of myeloma that you have. Whether you have symptoms or not, ensure that you have regular checkups with your doctor. Attending regularly scheduled doctor's visits will allow your doctor to address the disease as early as possible and begin treatments.