


Multiple myeloma (MM) is the second most common type of blood cancer and characterized by abnormalities in plasma cells, a type of white blood cells.¹

Lymphocytes are one of the main types of white blood cells in the immune system, and include B cells and T cells.² When B cells respond to an infection, they mature and change into plasma cells.² Plasma cells make the antibodies that help the body fight infections and other diseases, and are found mainly in bone marrow.²


B cell maturation antigen (BCMA) is a type of protein that regulates B cell proliferation and survival, as well as maturation into different plasma cells.³ BCMA are more highly expressed in malignant plasma cells, particularly in MM.³

When plasma cells become cancerous, they reproduce uncontrollably in a person's bone marrow, which can crowd out normal cells and lead to low blood counts.² This can ultimately cause anemia, bleeding and bruising or problems fighting infections.²

Multiple Myeloma At-A-Glance



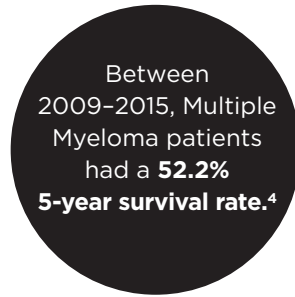
Multiple Myeloma is a rare cancer, accounting for **1.8% of all new cancer cases.**⁴



Estimated **32,110 new cases** in 2019.⁵



Estimated **12,960 deaths** related to MM in 2019.⁵



Between 2009–2015, Multiple Myeloma patients had a **52.2% 5-year survival rate.**⁴

Risk Factors

RACE

MM is twice as common among African Americans than white Americans.⁶

2X
MORE FOR
AFRICAN
AMERICANS

HISTORY OF OTHER PLASMA CELL DISEASES

Patients already affected by monoclonal gammopathy of undetermined significant (MGUS) or solitary plasma-cytoma have a higher risk of developing MM.⁶

FAMILY HISTORY

Someone with a parent or sibling who has MM is more likely to be affected.⁶



GENDER

Men are slightly more likely to develop MM.⁶



OBESITY

People who are overweight or obese have an increased risk of developing MM.⁶



<1%

OF PATIENTS
ARE UNDER
THE AGE OF 35⁶

AGE

MM typically affects an elderly population, and the risk of developing MM increases with age.⁸

**MOST CASES
OCCUR IN PATIENTS**

65+⁶

Symptoms & Diagnosis

Symptoms of multiple myeloma vary by patient.⁶ Oftentimes early stage multiple myeloma patients do not have any visible symptoms, or if they do they are vague or mistaken for other conditions.⁷

SYMPTOMS INCLUDE:⁹

- Bone pain
- Weakness or fractures
- Leukopenia (decreased ability to fight infection) or thrombocytopenia (bleeding or bruising due to low platelet count)
- Hypercalcemia (high levels of calcium in the blood)
- Low blood counts resulting in anemia
- Spinal cord compression presenting as muscle weakness
- Numbness or severe backpain
- Nerve damage
- Hyperviscosity
- Kidney infections
- Increased infection

Multiple myeloma can be difficult to diagnose.¹⁰ Initial evaluation to confirm a multiple myeloma diagnosis includes a number of **blood tests, urine tests,** and a **bone marrow biopsy.**⁷

These tests, along with a physical evaluation, symptoms and medical history aid the diagnosis.⁷



Treatment

Although multiple myeloma is incurable for most patients,³ there are treatment options available.¹¹

Systemic treatments involve treating the multiple myeloma using drugs injected into the bloodstream or taken orally, to reach cancer cells anywhere in the body.¹¹ New targeted

therapies such as proteasome inhibitors and immunomodulatory drugs have contributed to vast improvements in clinical outcomes for multiple myeloma patients over the past 20 years.⁴ Other treatments include chemotherapy and stem cell transplant.^{11, 12}

However, **most patients who receive treatment for multiple myeloma will experience a relapse** or their disease will stop responding to treatment (refractory).¹³

Approximately **50 percent of patients survive 5 years after diagnosis**, demonstrating the significant need for new treatment options, particularly for the relapsed or refractory patient population.⁴

Given the prevalence and role of BCMA in MM, **researchers are currently exploring BCMA targeting for a number of potential new therapies** to address this unmet need.³

1. <https://ghr.nlm.nih.gov/condition/multiple-myeloma#>
2. <https://www.cancer.org/cancer/multiple-myeloma/about/what-is-multiple-myeloma.html>
3. <https://www.frontiersin.org/articles/10.3389/fimmu.2018.01821/full>
4. <https://seer.cancer.gov/statfacts/html/mulmy.html>
5. <https://seer.cancer.gov/statfacts/html/mulmy.html>
6. <https://www.cancer.org/cancer/multiple-myeloma/causes-risks-prevention/risk-factors.html>
7. <https://themmrf.org/multiple-myeloma/symptoms-side-effects-and-complications/>

8. <https://www.cancer.org/cancer/multiple-myeloma/detection-diagnosis-staging/signs-symptoms.html>
9. <https://www.mayoclinic.org/diseases-conditions/multiple-myeloma/symptoms-causes/syc-20353378>
10. <https://themmrf.org/multiple-myeloma/diagnosis/>
11. <https://www.cancer.org/cancer/multiple-myeloma/treating.html>
12. <https://www.cancer.org/cancer/multiple-myeloma/treating/supportive.html>
13. https://www.lls.org/sites/default/files/file_assets/myeloma.pdf