

Multiple Myeloma ▾

Understanding multiple myeloma: a guide for patients

Causes, symptoms, stages, treatment options, and support resources

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Introduction

Multiple myeloma is a cancer that originates in plasma cells, which are white blood cells crucial to your immune system [1]. These cells normally produce antibodies that help your body fight off infections. However, in multiple myeloma, plasma cells become cancerous and multiply uncontrollably within the bone marrow, the soft, spongy tissue inside your bones where blood cells are made [2]. This overgrowth of abnormal plasma cells disrupts the production of healthy blood cells and can lead to various health issues [1]. This guide aims to provide a clear and compassionate understanding of multiple myeloma, breaking down complex medical terms and addressing sensitive topics with empathy.

What is Multiple Myeloma?

Multiple myeloma begins with a single plasma cell in the bone marrow that undergoes a malignant transformation [2]. This cancerous plasma cell multiplies rapidly, creating many copies of itself [3]. Unlike healthy cells that have a set lifespan, these cancerous cells continue to live and accumulate, crowding out the healthy blood cells in the bone marrow [2]. This can lead to fatigue, weakness, and increased susceptibility to infections [2].

Furthermore, instead of producing antibodies to fight infection, these abnormal plasma cells produce an abnormal antibody called a monoclonal protein (or M protein) [3]. These M proteins don't function like normal antibodies and can cause various problems, such as kidney damage and thickening of the blood [3].

Multiple myeloma often starts as a condition called monoclonal gammopathy of undetermined significance (MGUS) [2]. In MGUS, abnormal plasma cells make copies of the same antibody (M protein), but they don't form tumors or cause any harm [4]. Most people with MGUS don't develop multiple myeloma, but it's essential to monitor the condition for any changes [4].

Multiple myeloma can also cause bone problems. The myeloma cells interfere with the normal process of bone renewal, leading to weakened bones and an increased risk of fractures [4]. This bone damage can also cause high levels of calcium in the blood, a condition called hypercalcemia [4].

Symptoms

It's important to be aware of the potential symptoms of multiple myeloma, which can include [\[2\]](#):

- Bone pain, especially in the spine, chest, or hips
- Nausea
- Constipation
- Loss of appetite
- Mental fogging or confusion
- Fatigue
- Frequent infections
- Weakness

Causes and Risk Factors

The exact cause of multiple myeloma is not yet fully understood [2].

However, certain factors may increase the risk of developing this disease, including:

- **Age:** Multiple myeloma is most often diagnosed in people over 65 [2].
- **Sex:** Men are slightly more likely to develop multiple myeloma than women [2].
- **Race:** Multiple myeloma is more common in African Americans [5].
- **Family history:** Having a close relative with multiple myeloma increases your risk [5].
- **MGUS:** Having MGUS increases the risk of developing multiple myeloma [2].

It's important to remember that having one or more of these risk factors doesn't mean you'll definitely develop multiple myeloma. Many people with these risk factors never get the disease, while others develop it without having any known risk factors.

Stages and Types of Multiple Myeloma

Multiple myeloma is classified into different stages and types to help doctors understand the extent of the disease and guide treatment decisions.

Stages

There are two main staging systems for multiple myeloma:

- **Durie-Salmon Staging:** This system has three stages (I, II, and III) based on factors like the number of myeloma cells, bone damage, M protein levels, and calcium levels [6].
- **International Staging System (ISS):** This system uses blood test results, specifically albumin and beta-2 microglobulin levels, to classify myeloma into three stages [7].

Types

- **MGUS:** This is a pre-cancerous condition where abnormal plasma cells are present, but they don't cause any harm [6].
- **Smoldering Myeloma:** This is an early stage where the disease is present but not causing any symptoms [6]. Doctors try to predict when people with smoldering multiple myeloma will develop active multiple myeloma and classify them into different risk groups based on factors like the percentage of plasma cells in the bone marrow and M protein levels [8]. These risk groups help guide monitoring and treatment decisions.

- **Symptomatic Myeloma:** This is when the disease is causing noticeable symptoms and requires treatment [6].

Treatment Options

While multiple myeloma is currently considered incurable, there are many effective treatments available to manage the disease, control symptoms, and improve your quality of life [9]. Your treatment plan will be individualized based on your unique circumstances, including the stage of your myeloma, your overall health, and your preferences [10].

Treatment options may include:

- **Chemotherapy:** Uses drugs to kill cancer cells [10]. Common chemotherapy medications used for multiple myeloma include:
 - **Thalidomide:** This drug can help kill myeloma cells. Potential side effects include drowsiness, constipation, dizziness, rashes, and numbness or tingling in the hands and feet (peripheral neuropathy) [11].
 - **Bortezomib (Velcade):** This drug can help kill myeloma cells by causing protein to build up inside them. Possible side effects include tiredness, diarrhea, and peripheral neuropathy [11].
- **Targeted therapy:** Uses drugs that target specific molecules in myeloma cells to stop their growth [12].
- **Immunotherapy:** Helps your immune system fight cancer cells [12].
- **CAR T-cell therapy:** A type of immunotherapy that modifies your T cells (a type of immune cell) to fight myeloma cells [12].

- **Stem cell transplant:** This treatment replaces diseased bone marrow with healthy stem cells. There are two main types of stem cell transplants: [\[13\]](#)
 - **Autologous stem cell transplant:** This uses your own stem cells that were collected before high-dose chemotherapy.
 - **Allogeneic stem cell transplant:** This uses stem cells from a donor.
- **Radiation therapy:** Uses high-energy rays to kill cancer cells [\[12\]](#).
- **Supportive care:** Includes treatments to manage symptoms and complications, such as pain management, kidney support, and infection prevention [\[12\]](#).

Clinical Trials

Clinical trials are research studies that test new treatments and approaches to improve cancer care. Participating in a clinical trial can give you access to promising new therapies and contribute to advancing myeloma research [14]. Talk to your doctor about whether a clinical trial might be right for you.

Prognosis and End-of-Life Care

It's natural to have questions and concerns about your prognosis (outlook) and end-of-life care. These are sensitive topics, and it's important to approach them with open and honest communication with your healthcare team.

Prognosis

The prognosis for multiple myeloma varies depending on several factors, including the stage of the disease, your overall health, and the specific genetic characteristics of your myeloma cells [15]. While there is no cure for multiple myeloma, advancements in treatment have significantly improved the outlook for many patients [16]. Some people live for many years with multiple myeloma, managing it as a chronic condition.

End-of-Life Care

Facing a serious illness like multiple myeloma can bring about a range of emotions, including worry and uncertainty about the future. As the disease progresses, it's important to have open and honest conversations with your healthcare team and loved ones about your wishes for care.

End-of-life care for multiple myeloma focuses on providing comfort and support to patients and their families. It involves managing pain and other symptoms, as well as addressing potential complications like kidney failure and infections [9]. It also includes providing emotional and spiritual support to help patients and their families cope with the challenges of the disease.

Global Resources and Support Groups

Living with multiple myeloma can be challenging, but you don't have to go through it alone. There are many resources and support groups available worldwide to provide information, emotional support, and a sense of community.

International Myeloma Foundation (IMF)

- [International Myeloma Foundation](#)
- Provides education, support, and advocacy for myeloma patients worldwide. Offers resources like treatment information, support groups, financial assistance programs, and educational events.

The MMRF (Multiple Myeloma Research Foundation)

- [Multiple Myeloma Research Foundation](#)
- Focuses on accelerating research and supporting myeloma patients. Provides educational resources, clinical trial information, and financial assistance.

Myeloma UK

- [Myeloma UK](#)
- Offers tailored information and support for myeloma patients in the UK.

Myeloma Canada

- [Myeloma Canada](#)
- Provides resources and support for Canadian myeloma patients. Information is available in both English and French.

Myeloma Australia

- [Myeloma Australia](#)
- Supports Australian myeloma patients with access to specialist nurses, educational resources, and support groups.

Common Acronyms

You may encounter various acronyms when learning about and discussing multiple myeloma. Here are some of the most common ones [\[21\]](#):

- **ASCT**: Autologous Stem Cell Transplant
- **BCMA**: B-cell maturation antigen
- **BMB**: Bone Marrow Biopsy
- **CAR-T**: Chimeric antigen receptor T-cell therapy
- **CRAB**: Calcium, Renal (kidney), Anemia, Bone (disease)
- **IFE**: Immunofixation Electrophoresis
- **Ig**: Immunoglobulin
- **ISS**: International Staging System
- **MGUS**: Monoclonal Gammopathy of Undetermined Significance
- **MMRF**: Multiple Myeloma Research Foundation
- **MRD**: Minimal Residual Disease

- **PFS:** Progression-Free Survival

Conclusion

Multiple myeloma is a complex and challenging disease, but advancements in treatment and a growing understanding of the disease have led to significant improvements in prognosis and quality of life for many patients [9]. Early detection and individualized treatment plans are crucial for managing multiple myeloma effectively [10].

Remember that you are not alone on this journey. With the right information, support, and a proactive approach to your care, you can live well with multiple myeloma. Don't hesitate to:

- Educate yourself about the disease and its treatment options.
- Communicate openly with your healthcare team.
- Seek emotional support from loved ones, support groups, or mental health professionals.
- Focus on maintaining your quality of life.

This guide has provided you with a comprehensive overview of multiple myeloma, breaking down medical terms, discussing treatment options, and addressing sensitive topics with empathy. We hope this information empowers you to make informed decisions and live well with multiple myeloma.

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