



Multiple Myeloma: YOUR QUESTIONS ANSWERED

What is multiple myeloma (MM)?

MM is a type of cancer that affects the plasma cells in your bone marrow (the inside part of the bone). The bone marrow is where all of your blood cells grow. Plasma cells normally help fight infections and other diseases. When plasma cells become cancerous, they grow out of control and can hurt your body in several key ways:

- They grow faster than other cells in the bone marrow, crowding out healthy cells, which can cause anemia or make you bleed more easily (because your platelet count may be low)
- They block signals that tell other cells in the marrow to build new bone tissue; this makes your bones more prone to fractures
- They cause bones to be broken down faster than they are rebuilt, which puts extra calcium into your blood (this can hurt your organs)
- They can turn into tumors in the bone marrow and can spread to other organs
- They do not help fight infection like healthy cells do, so you may get infections more easily than other people
- They make an abnormal protein (called the M protein) that can hurt your kidneys

How did I get MM?

No one knows how MM develops. Smoking, being overweight, and being older all increase the risk of getting MM, but people without any risk factors can also get it. More African Americans than Caucasians get MM.

How is it treated?

There are many ways to treat MM. The goal is to kill cancer cells, and each type of treatment does that in a different way. Treatments fall into these categories:

- **Chemotherapeutics** (change cancer cells to prevent them from making more cells)
- **Immunomodulating agents** (increase your body's immune response to cancer cells)
- **Proteasome inhibitors** (keep cancer cells from breaking down and reusing proteins that the cancer cell needs to stay alive)

- **Radiation therapy** (puts high-energy beams or particles into tissues to destroy tumors; it can be given in high, low, or total-body doses)
 - High-dose radiation treats one tumor or reduces the number of tumors
 - Low-dose radiation is used to control (that is, not to cure) disease
 - Total-body radiation is given to prepare for a stem cell transplant
- **Surgery** (takes out tumors that are not in the bone)
- **Steroids** (reduce body-wide inflammation; they can also lessen the pain and nausea that you may get with other treatments)
- **Stem cell transplants** (your own stem cells or someone else's stem cells are used to replace cancer cells)
- **Combination therapy** (any combination of the above treatments; combination therapy is commonly used for your first MM treatment, if stem cell treatment is planned, or to prevent the cancer from coming back after successful treatments)

What treatment is best for me?

The best treatment depends on many factors, such as:

- Your age
- Your general health
- Any other diseases you might have
- The results of your lab tests
- Your preference, based on your daily activities
- How aggressive your MM is
- The risk of side effects
- Your response to previous treatment(s)

Your doctor will discuss all of your options with you, and you will figure out the best treatment together.

How will I know if a treatment is working?

Your doctor may use any of the following tests or tools to keep track of your MM:

- Urine and blood tests for M protein
- Blood tests to check cell counts and kidney and liver functions
- X-rays to check for bone damage or fractures
- Other imaging studies if needed
- Bone-marrow biopsy to check your plasma cell counts

Results from these tests—as well as information you give about how you’re feeling and any symptoms you’re having—will help your doctor classify your MM.

Will treatment cure me?

MM usually cannot be completely cured. Although you may be able to stop treatment for a little while, regular follow-up and treatments are necessary. The main goals of all treatments are to:

- Control the disease to prevent damage to other organs
- Make sure your quality of life is good and you can do your normal activities
- Lessen disease symptoms and side effects

What are the risks and side effects of MM treatment?

In general, depending on the treatment you and your doctor choose, you may get a rash or an upset stomach. You may feel tingling, numbness, an “electric” feeling, or a burning sensation in your feet and/or hands (neurologic problems). Some treatments may increase your risk of getting blood clots in your legs (deep vein thrombosis, or DVT). You may have constipation, diarrhea, or other stomach problems. Some treatments may cause tiredness or shortness of breath. You may not be able to fight infections as well because many treatments target your white blood cells, which fight infections. Different treatments have

different side effects, and your doctor can talk to you about the side effects that go along with each.

What other treatments will I need to know about while I’m on MM therapy?

MM treatment is about more than cancer cells. Some other treatments can be given to help you live the way you want to live and do what you want to do. These types of treatments are called “supportive therapies,” and they do two main things:

- Control and lessen medication side effects
- Avoid potential disease complications

The most commonly used supportive MM therapies include:

- **Bisphosphonates** (to lessen fracture risk, bone pain, and bone destruction and to help avoid high calcium levels)
- **Growth factors** (to help the body make more red blood cells and/or white blood cells, to fix anemia, and to lessen mouth sores)
- **Antimicrobials** (to prevent infections)
- **Pain medication** (to help with numbness, tingling, and burning feelings in hands and feet and to help with injection pain)
- **Antithrombotics** (to prevent blood clots)
- **Plasmapheresis** (to take out certain bad proteins from the blood and to help your kidneys)
- **Orthopedic surgery** (to help with pain and movement and to fix spinal fractures)

CLASSIFYING MULTIPLE MYELOMA

TERM	WHAT IT MEANS	HOW DO YOU KNOW
DISEASE CLASSIFICATION		
Inactive disease	Does not need treatment right away	You do not have symptoms and no organ/tissue damage is seen
Active disease	Needs treatment right away	You have symptoms
TREATMENT CLASSIFICATION		
Responsive disease	It is getting better with treatment	M protein goes down by 50% or more
Stable disease	It is not getting worse	M protein has not gone down by 50% or more, but the disease is not getting worse and all other tests suggest the disease is stable
Progressive disease	Active disease that is getting worse	M protein is going up and/or organ/tissue damage has occurred or has gotten worse
Relapsed disease	You got better after your first treatment, but the disease has come back	M protein is going up and/or organ/tissue damage has occurred or has gotten worse
Refractory disease	The cancer did not get better after your first (or follow-up) treatment	M protein did not go down by 50% or more and the disease has gotten worse

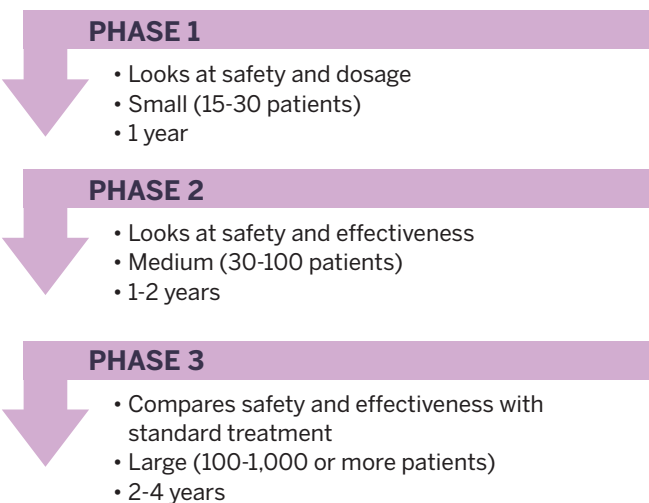
What about clinical trials?

Many exciting new treatments are being studied in clinical trials. The National Comprehensive Cancer Network believes that the best treatments for any type of cancer can be found in clinical trials. They often take place at many of the same locations where you would already get your MM treatment—cancer centers, hospitals, and doctors' offices.

Clinical trials test new treatments or combinations of treatments and compare them with the best standard treatment. The ones furthest along are “phase 3” trials—the largest trials that a drug goes through before it can be approved by the United States Food and Drug Administration.

All of the drugs being studied in clinical trials work at the cell level to block things that MM cells need to survive. Most MM treatments work best when they are given with one or more other drugs.

CLINICAL TRIAL PHASES



Your doctor is the best person to help you figure out if a clinical trial is right for you. Many of the same things that come into play when picking a treatment for MM (like age, general health, disease type) also factor into whether a clinical trial would make sense for you. Your doctor may want you to try a clinical trial if previous treatments have not worked well or worked for only a short time.

By design, clinical trials have different groups of patients who get either the real treatment or a “fake” treatment, called a “placebo” or “sham.” If you join a clinical trial, you will not know which group you are in—and neither will the people who are giving you the treatment.

The decision to join a clinical trial is a highly personal one. Some people choose it for the potential added health benefit; others choose it on their doctor's recommendation or for altruistic reasons (the good of others/furthering research efforts). Good communication with your doctor is a key factor in such a decision.

Where can I find resources about MM?

The following Web sites are great places to go for more information about MM:

- The Multiple Myeloma Research Foundation
www.themmr.org
- International Myeloma Foundation
www.myeloma.org
- Leukemia and Lymphoma Society
www.lls.org
- National Cancer Institute
www.cancer.gov
- American Cancer Society
www.cancer.org

Content is being used for illustrative purposes only and any person depicted is a model.
This activity is supported by educational grants from Celgene Corporation, Millennium: The Takeda Oncology Company, Novartis Pharmaceuticals Corporation, and Onyx Pharmaceuticals.



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