



Managing Disease Symptoms and Treatment Side Effects

August 13, 2024

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Tech Support

1-719-234-7952

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Resources

- Resource tab includes
 - Speaker bios
 - Copy of the slide presentation
 - Exhibit Hall

Submit your questions throughout the program!

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Delivering On Our Mission

The MMRF is committed to acting with urgency to ensure that patients have effective, more personalized treatments available when they need them and the resources necessary to increase their survival and improve their quality of life.



Accelerate the Development of Novel Therapies

Invest in companies with early-stage assets (Myeloma Investment Fund) and speed clinical trials through MMRC in patient populations with greatest unmet need (Horizon).



Driving More Personalized, Optimal Treatment Approaches

Deploy resources and funding to drive research focused in areas of high unmet need, generate hypotheses for clinical exploration (TRU and MAC) and make all MMRF-generated and/or supported data available to researchers (Virtual Lab).



Empower Patients and the Entire Community

Provide high-quality education to patients, caregivers, and healthcare providers, as well as access to nurse navigators with a strong focus on addressing the needs of traditionally underserved patients; fund Fellows and other initiatives to increase the number of BIPOC (especially Black) researchers and clinicians (Scholars).

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Speakers



Donna D. Catamero, ANP-BC, OCN, CCRC
Associate Director of Myeloma Research
Mount Sinai Health System
New York, New York



Leora A. Giacoia, MS, FNP-BC
Nurse Practitioner,
Division of Multiple Myeloma Research
Mount Sinai Health System
New York, New York

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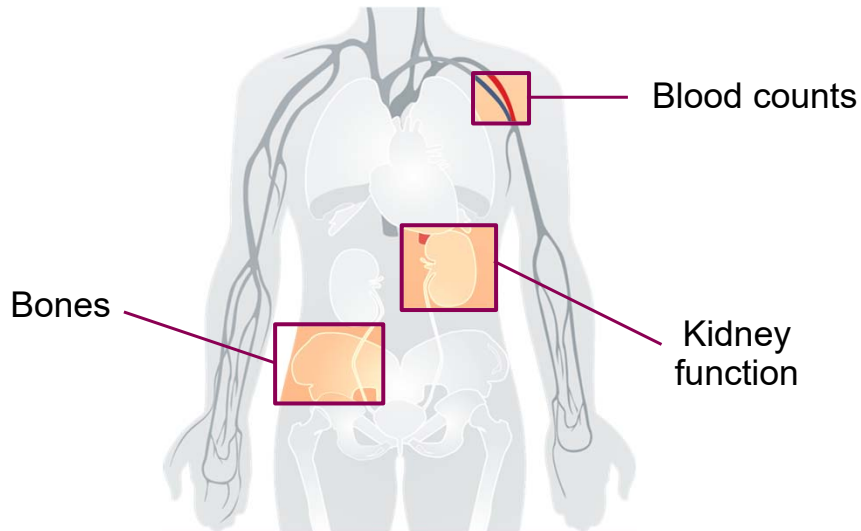
Symptoms of Multiple Myeloma

Leora A. Giacoia, MS, FNP-BC

Nurse Practitioner, Division of Multiple Myeloma Research
Mount Sinai Health System
New York, New York

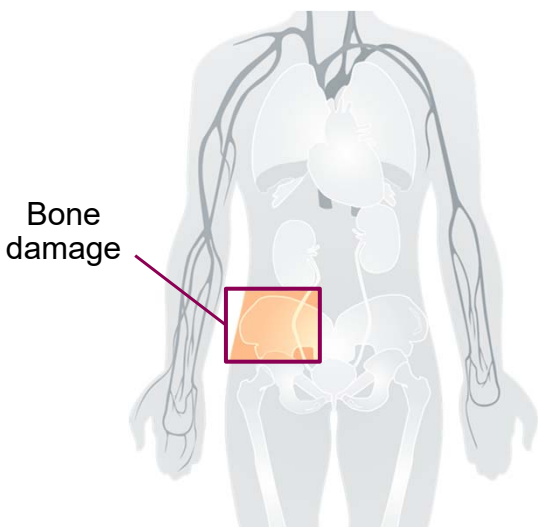
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Myeloma Affects Your...



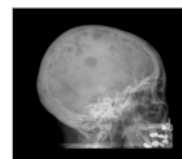
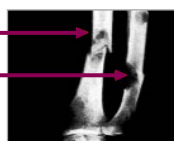
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Effects of Myeloma: *Bone Disease*



- Myeloma causes bone loss and bone pain
- Occurs in 85% of patients
- Weakened bone due to lesions or “holes”
- Increased levels of calcium in the blood (hypercalcemia)
- Leads to
 - Pathologic fractures
 - Spinal cord compression/collapse
 - Pain

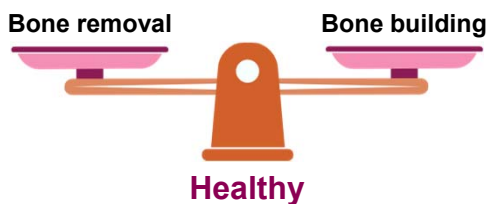
Fracture caused by lesion
Lesions



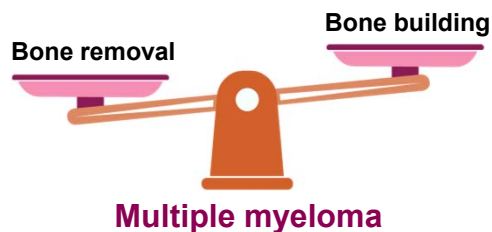
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Why does multiple myeloma affect bones?

In healthy individuals, old bone is replaced on an ongoing basis, a process known as remodeling



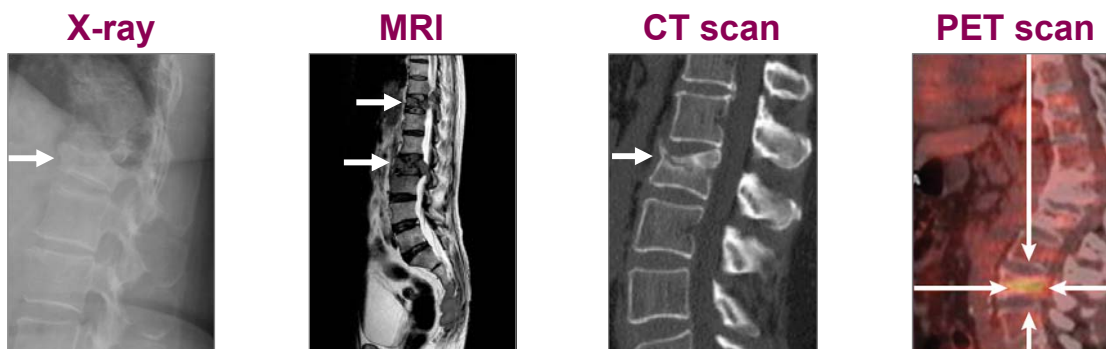
In multiple myeloma, the remodeling process becomes unbalanced, and patients begin to lose more bone than they replace



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What tests are used to find and measure bone disease?

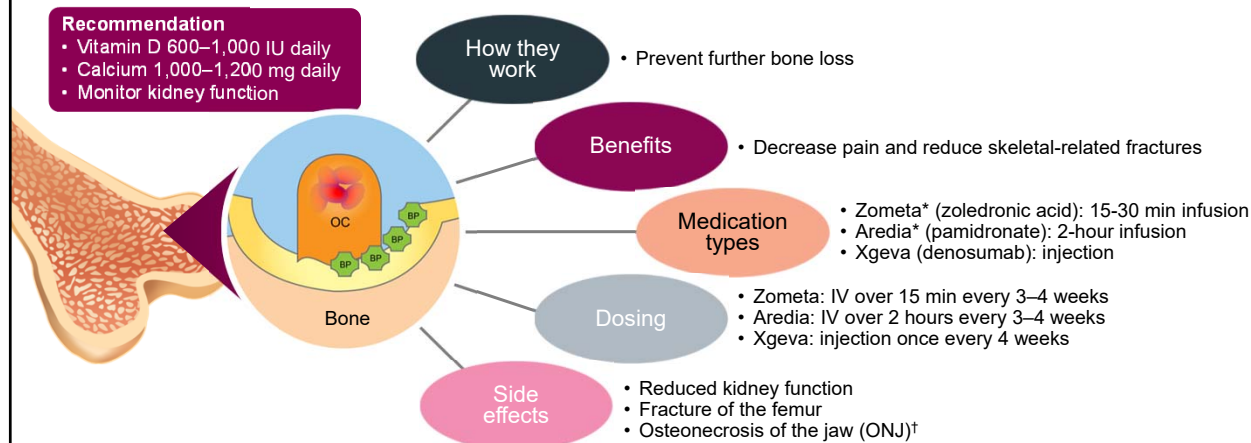
Assess changes in the bone structure and determine the number and size of tumors in the bone



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Medications for Myeloma Bone Disease

Minimizing Bone Loss

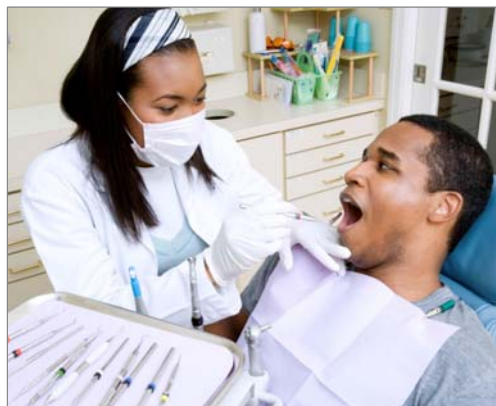


^{*}Dose adjust for kidney function; [†]A breakdown of bone in the jaw
OC, osteoclast (inhibited, halting bone breakdown); BP, bisphosphonate

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Recommendations for Reducing the Risk of Osteonecrosis of the Jaw (ONJ)

- Complete major dental work before beginning treatment for bone disease
- Practice good oral hygiene
- Schedule regular dental visits/antibiotic prophylaxis
- Let your dentist know that you are receiving treatment for bone disease
- Keep your doctor informed of dental issues/need for dental work
- Be attentive! ONJ seems to be related to the length of time patients are on treatment for bone disease



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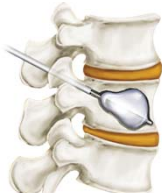
Procedures for Bone Pain Surgical and Radiation Intervention

- Minimally invasive procedures
- Can be performed without hospitalization
- Small incision
- Cement filler stabilizes bone
- Potential for relatively rapid symptom relief (approximately 1 month with kyphoplasty)

Vertebroplasty



Kyphoplasty



- Destroys Myeloma cells
- Stops bone destruction
- Pain control
- Targeted and localized therapy
- Can affect bone marrow function
- Can affect adjacent tissues

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Pain Management Medications

Acetaminophen (Tylenol)

High dosage can hurt your liver; caution with elevated liver function tests (LFTs)

NSAIDs (nonsteroidal anti-inflammatory drugs)

Prefer to avoid with multiple myeloma due to increased risk of kidney injury

Topical NSAIDs may be acceptable on case by case basis

Opioids

Potential for constipation, sedation, confusion, physiologic dependence

Corticosteroids (dexamethasone, prednisone)

Has myeloma-fighting effects. Can raise blood sugar and cause insomnia; short- and long-term effects

GABA analogues (gabapentin and Lyrica)

For use of neuropathic (nerve) pain. Potential for drowsiness and dizziness

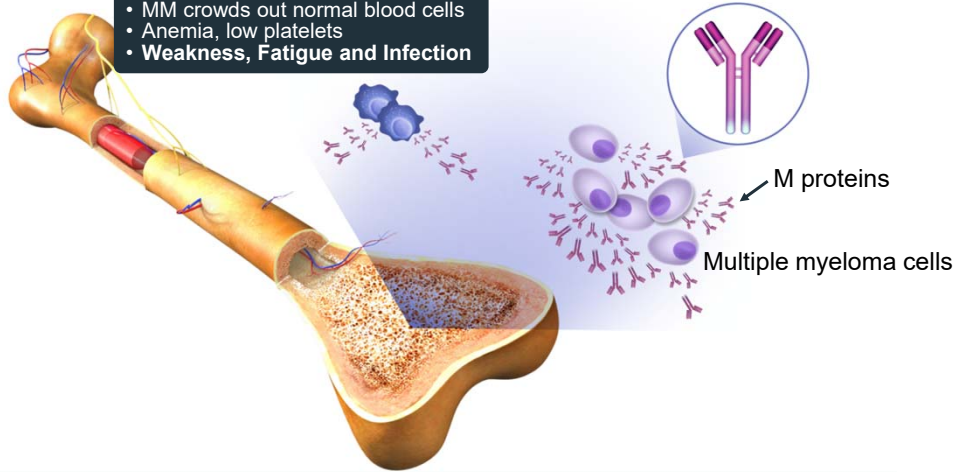
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Multiple Myeloma Affects Your...

Blood

BLOOD

- MM is a cancer of the blood
- MM crowds out normal blood cells
- Anemia, low platelets
- Weakness, Fatigue and Infection



MM, multiple myeloma

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Effects of Myeloma: Low Blood Counts

- Symptoms
 - Fatigue; depression/mood changes; difficulty breathing; rapid heartbeat; dizziness
- Other causes
 - Low levels of iron, folate, and vitamin B12

Low red blood cells (anemia)

Treatment: Identify and treat causes other than myeloma; supplements; medications to increase number of red blood cells; blood transfusions

- Symptoms
 - Easy or excessive bruising; superficial bleeding into the skin; prolonged bleeding from cuts; bleeding from the gums or nose; blood in urine or stool
- Other causes
- Viral infection (hepatitis B or C); immune thrombocytopenia; medications

Low platelets (thrombocytopenia)

Treatment: Identify and treat causes other than myeloma; platelet transfusion; hold blood thinners

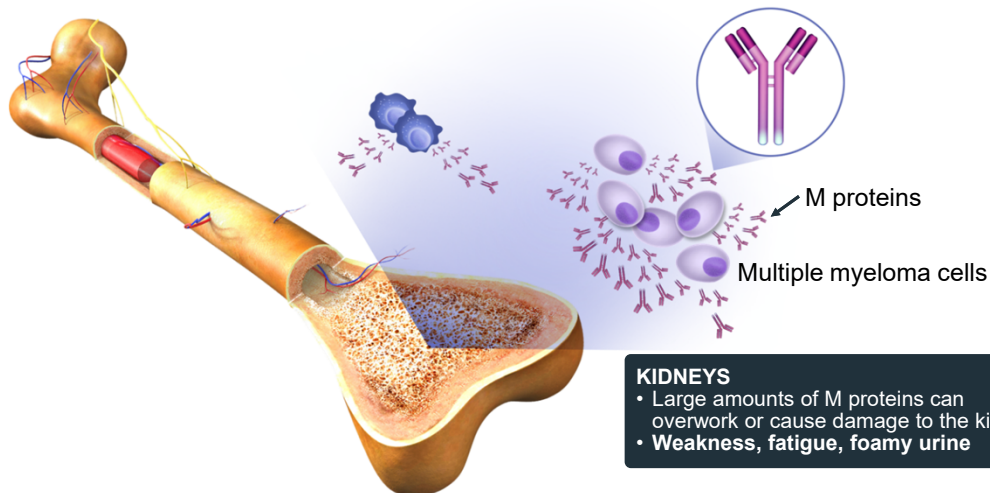
- Symptoms
 - Fatigue; frequent infections
- Other causes
 - Radiotherapy
 - Infection

Low white blood cells (leukopenia)

Treatment: Medications to stimulate production of white blood cells; antibiotics; infection prevention

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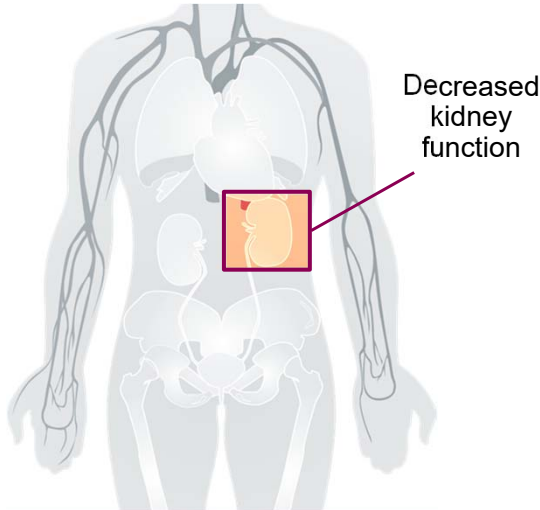
Multiple Myeloma Affects Your... Kidneys



MM, multiple myeloma

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Effects of Myeloma: Decreased Kidney Function



- Detection
 - Decreased amount of urine
 - Increase in creatinine and other proteins
- Other causes beside myeloma
 - Hypertension
 - Diabetes
 - Some medications
- Treatment
 - Fluids
 - Avoid substances that are toxic to kidneys
 - Nonsteroidal anti-inflammatory drugs (NSAIDs) such as Aleve, Advil/Motrin
 - CT contrast
 - Plasmapheresis (plasma exchange)
 - Treat other causes
 - Dialysis (severe)

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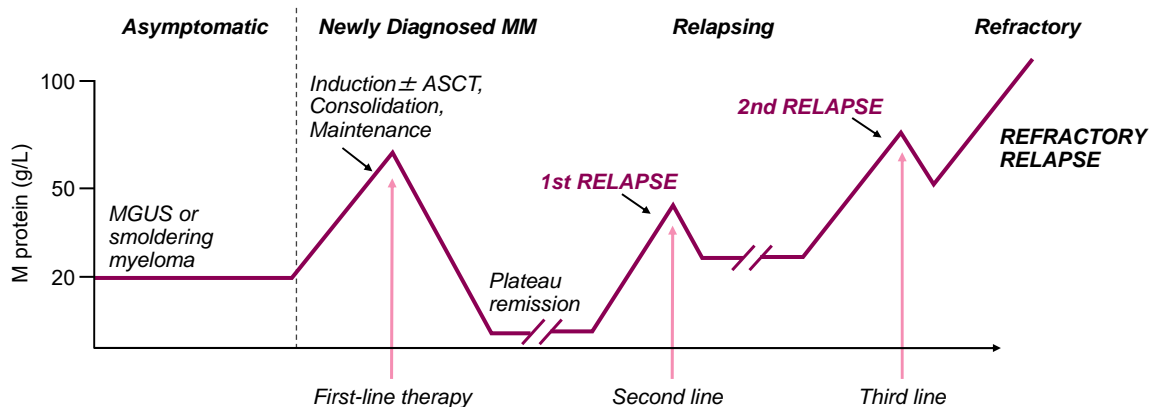


Side Effects and Management of Multiple Myeloma Therapies

Donna D. Catamero, ANP-BC, OCN, CCRC
Associate Director of Myeloma Research
Mount Sinai Health System
New York, New York

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Multiple Myeloma Treatment Is a Marathon, Not a Sprint



Adapted from Borrello I. *Leuk Res.* 2012;36 Suppl 1:S3.

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Myeloma Therapies

Steroid Side Effects and Their Management

Insomnia



- Healthy sleep habits
- Timing medication to assist with sleeping as needed

Fluid retention



- Monitor for swelling of extremities and "puffy" face
- Monitor weight changes/gain
- Reduce dose

Mood changes



- Practice self care-exercise to boost mood; engage in hobbies that bring joy and relaxation
- Talk to friend, family member or support group
- Seek professional support

Dyspepsia-heartburn



- Dietary modifications (avoid spicy, acidic foods)
- Avoid NSAIDs
- Acid-blocking medications
- Take steroid with food; use enteric-coated aspirin with food

Elevation in glucose



- Monitor glucose and refer/treat as needed

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Myeloma Therapies

Common Side Effects and Their Management

Immunomodulatory Medication Revlimid, Pomalyst	
Side Effect	Management
Fatigue and weakness	Sleep hygiene, regular exercise, dose adjustment
Blood clots	Blood thinners
Diarrhea Constipation	Immodium, cholestyramine Stool softeners, laxatives, fiber
Muscle cramping and back pain	Tonic water/hydration
Rash	Topical treatments and/or dose adjustment
Shortness of breath	Rule out blood clot; dose adjustment
Upper respiratory Infections	Antibiotics, antivirals, and/or supportive care*

Proteasome Inhibitors Velcade, Kyprolis, Ninlaro	
Side Effect	Management
Peripheral neuropathy	Gabapentin, pregabalin, duloxetine, opioids, dose adjustment
Low platelets	Close monitoring and/or dose adjustment, supportive care*
Diarrhea Constipation	Immodium, cholestyramine Stool softeners, laxatives, fiber
Fatigue	Sleep hygiene, regular exercise, dose adjustment
Rash	Topical treatments and/or dose adjustment
Hypertension	Monitor closely, dose adjustment

*Care for the prevention and management of treatment side effects

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Myeloma Therapies

Common Side Effects and Their Management

Monoclonal Antibodies Darzalex, Sarclisa, Empliciti	
Side Effect	Management
Infusion reaction	Supportive care
Fatigue	Sleep hygiene, regular exercise, dose adjustment
Diarrhea Constipation	Immodium, cholestyramine Stool softeners, laxatives, fiber
Low platelets	Close monitoring and/or dose adjustment, supportive care
Peripheral neuropathy	Gabapentin, pregabalin, duloxetine, opioids, acupuncture
Upper respiratory infection	Antibiotics, antivirals, and/or supportive care

Selective Inhibitor of Nuclear Export Xpovio	
Side Effect	Management
Nausea and vomiting	Anti-nausea medications, dose adjustment
Diarrhea	Supportive care, dose adjustment
Low sodium	Dose adjustment, supportive care, close monitoring
Peripheral neuropathy	Gabapentin, pregabalin, duloxetine, opioids, dose adjustment
Fatigue	Sleep hygiene, regular exercise, dose adjustment
Low blood counts	Close monitoring and/or dose adjustment, supportive care

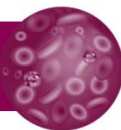
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Bispecific Antibodies

- Elrexfio, Tecvayli
 - BCMA target: cytokine release syndrome (CRS), neurotoxicities/ immune effector cell-associated neurotoxicity syndrome (ICANS), infections, decreased blood counts, injection-related reactions
- Talvey
 - GPRC5D target: CRS, neurotoxicities/ICANS, neutropenia, hypogammaglobulinemia, altered taste, itchy skin, dry skin, nail thinning or separation

- Patients will receive step-up dosing* and will be monitored in an inpatient setting
- CRS is managed with tocilizumab
- Neurological toxicities managed with anakinra and/or steroids
- Supportive care (oral, skin, and nail care)
- Injection reactions are managed with oral antihistamines and topical steroids
- Infection prevention!

Elrexfio, Tecvayli, Talvey



Management

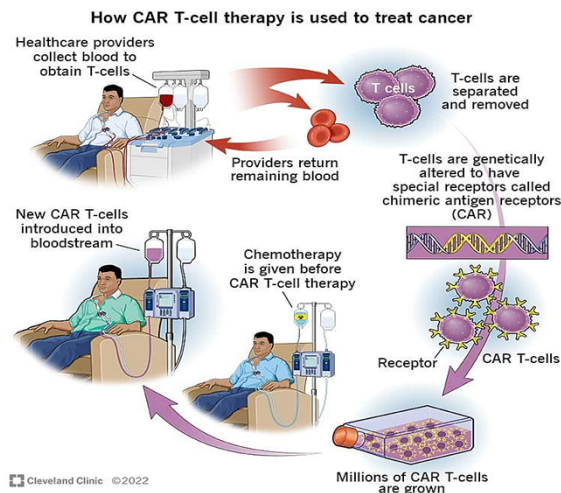


*Smaller doses that gradually increase to the full dose to minimize side effects

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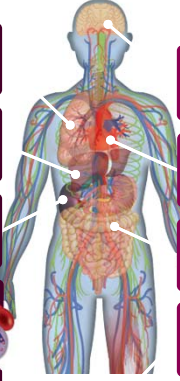
Chimeric Antigen Receptor T Cell (CAR T)

- CRS
- Neurotoxicity/ICANS
- Low blood counts
- Infection risk
 - Prophylactic medications
 - Levaquin
 - Mepron
 - Bactrim



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CRS With Bispecifics and CAR-T: Early Recognition and Treatment Is Key



RESPIRATORY

- Difficulty breathing
- Shortness of breath

LIVER

- Altered liver function tests in the blood

KIDNEY

- ↑ Serum creatinine
- Reduced kidney function

BLOOD

- Anemia
- Thrombocytopenia
- Neutropenia

GENERAL

- Fever
- Fatigue
- Headache

NEUROLOGIC

- Tremors
- Altered wakefulness
- Difficulty speaking

CARDIOVASCULAR

- Rapid heart rate
- Low blood pressure
- Heart rhythm

GASTROINTESTINAL

- Nausea
- Vomiting
- Diarrhea

MUSCULOSKELETAL

- Weakness


Mitigation and monitoring for CRS

- Step-up dosing with hospitalization for monitoring
- Frequent vital signs
- Rule out infection
- Laboratory monitoring
- Early intervention with **tocilizumab**


Oluwole OO, Davila ML. *J Leukoc Biol.* 2016;100:1265. June CH, et al. *Science.* 2018;359:1361. Brudno JN, Kochenderfer JN. *Blood.* 2016;127(26):3321. Brudno JN, Kochenderfer JN. *Blood Rev.* 2019;34:45. Shimabukuro-Vornhagen, et al. *J Immunother Cancer.* 2018;6:56. Lee DW, et al. *Biol Blood Marrow Transplant.* 2019;25:625.

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Bispecifics & CAR T: Expected Toxicities




Cytokine release syndrome (CRS)




Neurotoxicity (ICANS)



Cytopenias



Infections



Cytokeratin changes/rash
Taste changes (dysgeusia)

	CRS	ICANS
Onset	1–9 days after CAR T-cell infusion; 1–2 days after first full dose for bispecifics	2–9 days after CAR T-cell infusion; 2–3 days after first full dose for bispecifics
Duration	5–11 days	3–17 days
Symptoms	<ul style="list-style-type: none"> • Fever • Difficulty breathing • Dizziness • Nausea • Headache • Rapid heartbeat • Low blood pressure 	<ul style="list-style-type: none"> • Headache • Confusion • Language disturbance • Seizures • Delirium • Cerebral edema
Management	<ul style="list-style-type: none"> • Actemra (tocilizumab) • Corticosteroids • Supportive care 	<ul style="list-style-type: none"> • Antiseizure medications • Corticosteroids

Xiao X et al. *J Exp Clin Cancer Res.* 2021;40(1):367. Lee DW et al. *Biol Blood Marrow Transplant.* 2019;25:625; Shah N et al. *J Immunother Cancer.* 2020;8:e000734.

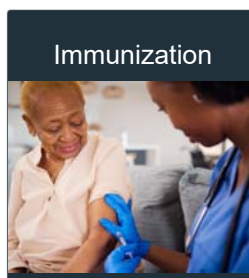
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Infection Risk and Prevention Tips

- Both myeloma and myeloma treatments contribute to infection risk
- 7-10–fold increased risk of bacterial and viral infections



- Wash hands
- Avoid crowds and sick people



- COVID-19 vaccination + booster(s)
- Pneumococcal 20-valent conjugate vaccine
- Seasonal inactivated influenza vaccine
- Shingles vaccine: zoster vaccine recombinant, adjuvanted



- Valacyclovir/acyclovir
- Hepatitis B virus nucleoside reverse transcriptase inhibitors
- Bactrim, Mepron, or dapsone
- Growth factor (Neupogen, Neulasta)
- IV gamma globulin infusion (Gamunex)

Report fever of more than 100.4°F, shaking chills even without fever, dizziness, shortness of breath, low blood pressure to health care provider as directed

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Taking Care of Yourself: *Nutrition*

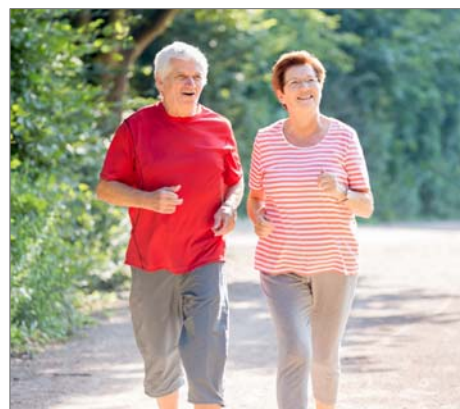
- Excess body fat can lead to progression of multiple myeloma
- Eating a healthy diet can boost both energy and mood
- Eating healthy keeps immune system in peak shape
- Myeloma treatments can reduce your appetite, so it's important that you make the most of what you do eat. If treatments reduce your appetite:
 - Eat small meals every few hours
 - Keep energy-dense high-protein snacks like nuts, eggs, and cheese handy
 - Supplemental nutrition shakes
- Your care team may recommend a nutritionist
- Nutritional needs may have changed since diagnosis



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Taking Care of Yourself: *Exercise*

- Getting regular exercise can improve your physical and mental health during every phase of myeloma treatment, providing such benefits as:
 - Maintaining fitness, mobility, and balance
 - Strengthening muscles and bones
 - Increasing your energy level
 - Helping your immune system work better
 - Boosting your mood and mental health
Improve sleep and reduce fatigue
- How much exercise or activity is “enough” will depend on your fitness level before your diagnosis
- Talk with your care team before starting any kind of exercise



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Taking Care of Yourself: *Mental Health and Emotional Support*

- In addition to physical symptoms, multiple myeloma often causes fear, anxiety, and distress.
- Friends, loved ones, caregivers, and mental health professionals are excellent sources of support
- Support groups for multiple myeloma patients are available



- Take time to engage in hobbies or activities that bring joy and relaxation
- Stress-reducing activities can also help reduce anxiety and improve your mental well-being; some options include:

<i>Acupuncture</i>	<i>Massage</i>	<i>Mindfulness</i>	<i>Tai chi</i>
<i>Deep-breathing exercises</i>	<i>Meditation</i>	<i>Music therapy</i>	<i>Yoga</i>

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Taking Care of Yourself: *Insomnia and Fatigue*

- Causes: anxiety, stress, meds—dexamethasone
- Sleep hygiene
 - Routine: go to bed/wake up at routine times
 - Exercise, but avoid close to bedtime
 - No TV or screens when trying to sleep
 - Relaxation training; meditation, yoga, Reiki, breathing exercises
 - Counseling support
- Medications: useful but with potential side effects
 - Lorazepam (Ativan)
 - Zolpidem (Ambien)
 - Trazodone
 - Diphenhydramine (Benadryl)



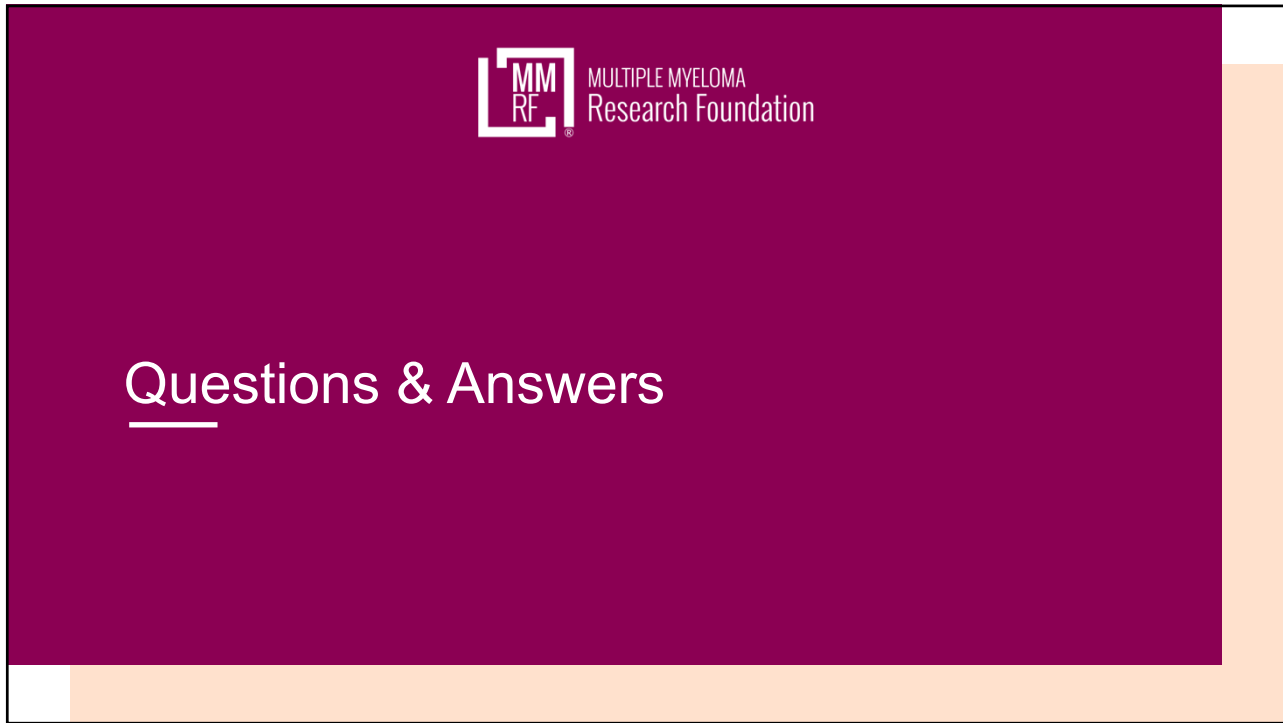
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Advocating for Yourself: *Speak Up*

- It is important to talk to your provider about side effects you are experiencing
- There are several ways to make treatment tolerable
- Provide supportive care or treatments to manage side effects
- Reduce drug dose/frequency
- Change therapy



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Patient Education Programs 2024

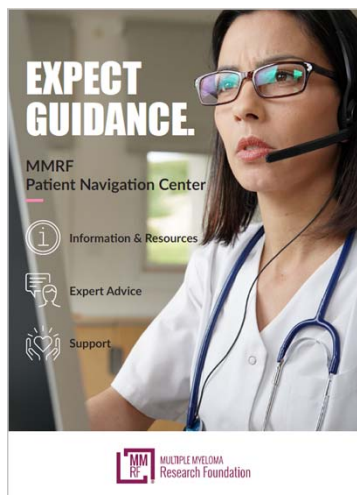
Multi-channel offerings

- Patient Summits
- Patient Webinars
- Myeloma Matters Podcasts
- FB Livestreams
- Conference Highlights
- Nursing Fireside Chats
- The MMRF Patient Toolkit
- High Impact Topic Videos
- Fast Facts in Myeloma Infographics

A collage of various patient education materials. At the top right is a poster for the 'PATIENT SUMMIT' in Seattle, WA, on Saturday, November 16, 2024. It lists in-person and online times. Below it is the 'MYELOMA matters' logo featuring a microphone icon. To the left are several infographics with charts and text. At the bottom center is a 'SAVE THE DATE: 9/11' poster for a 'Patient Webinar' on 'Newly Diagnosed Multiple Myeloma: Where to Begin' on Wednesday, September 11th at 4:30 PM ET. Other posters include 'AUTOLOGOUS STEM CELL TRANSPLANT' and 'LEARN YOUR LABS'.

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MMRF Patient Resources



MMRF Patient Navigation Center

You and your care team will have many decisions to make along your treatment journey. The Patient Navigation Center is a space for multiple myeloma patients and their caregivers to connect with patient navigators – who are professionals specializing in oncology – for guidance, information, and support. You can connect with a patient navigator via phone, or email. Whatever questions you may have, our patient navigators are here to help.

MMRF Patient Navigators Include:

- Grace Allison, RN, BSN, OCN, RN-BC
- Britany Hartmann, RN-BSN
- Erin Mensching, RN-BSN, OCN

THE RIGHT TRACK

Get on the right track for you

The MMRF's Right Track program puts you on the path to the best results for you.

 Right Team Access experts and centers that have extensive experience treating multiple myeloma.	 Right Tests Get the information, tests, and precise diagnoses to make the right treatment decisions.	 Right Treatment Work with your team to consider the best treatment plan and identify clinical trials that are right for you.
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Contact the Patient Navigation Center Today
Looking for guidance? We're here to help.
Monday - Friday | 9:00am - 7:00pm ET
Phone: 1-888-841-MMRF (6673) Online: TheMMRF.org/PatientNavigationCenter
Email: patientnavigator@themmrf.org

Supported By

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Myeloma Mentors® allows patients and caregivers the opportunity to connect with trained mentors. This is a phone-based program offering an opportunity for a patient and/or caregiver to connect one-on-one with a trained patient and/or caregiver mentor to share his or her myeloma journeys and experiences.

No matter what your disease state—smoldering, newly diagnosed, or relapsed/refractory—our mentors have insights and information that can be beneficial to both patients and their caregivers.

**Contact the Patient Navigation Center at 888-841-6673
to be connected to a Myeloma Mentor or to learn more.**

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Join the MMRF Community!

National Walk/Run Program

- Los Angeles | 8.17.24
- San Francisco | 8.24.24
- Chicago | 9.8.24
- Twin Cities | 9.14.24
- Detroit | 9.21.24
- Washington D.C. | 9.28.24
- New York City | 10.5.24
- Boston | 10.12.24
- Philadelphia | 10.19.24
- Atlanta | 10.26.24
- Tampa | 11.2.24
- Dallas | 11.16.24
- Houston | 11.23.24
- Scottsdale | 12.7.24
- National Virtual | 12.14.24



Other MMRF Event Programs



Moving Mountains for Multiple Myeloma



Half and Full Marathons



Bike/Road to Victories



Create Your Own Fundraiser



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Upcoming Patient Education Events

Save the Date

Program	Date and Time	Speakers
Managing Side Effects <i>Livestream</i>	Wednesday, September 4, 2024 4:00 PM ET	Dana Spiak, RN Gabriella Acosta, MSN, APRN
Newly Diagnosed Multiple Myeloma: Where to Begin <i>Webinar</i>	Wednesday, September 11, 2024 4:30 PM ET	Ajay K. Nooka, MD, MPH Urvi A. Shah, MD
<i>Expert Session on IMS Highlights</i>	Wednesday, October 9, 2024 10:00 AM ET	Nikhil Munshi, MD A. Keith Stewart, MBChB
Newly Diagnosed Multiple Myeloma <i>Livestream</i>	Thursday, October 17, 2024 3:00 PM ET	Noa Biran, MD Ann McNeill, APN
<i>MMRF Patient Summit</i> <i>Hybrid Event in collaboration with the Fred Hutchinson Cancer Center</i>	Saturday, November 16, 2024 8:00 AM – 12:30 PM PT	Andrew J. Cowan, MD Kara Cicero, MD, MPH Andrew Portuguese, MD

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Resources

- Resource tab includes
 - Exhibit Hall
 - Speaker bios
 - Copy of the slide presentation

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RF MULTIPLE MYELOMA
Research Foundation

Thank you!