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Multiple Myeloma

Also called: Plasma-cell myeloma

Multiple myeloma is a cancer that begins in plasma cells, a type of white blood cell. These cells are part of your immune system, which helps protect the body from germs and other harmful substances. In time, myeloma cells collect in the bone marrow and in the solid parts of bones.

No one knows the exact causes of multiple myeloma, but it is more common in older people and African Americans. It can run in families. Common symptoms may include:

- Bone pain, often in the back or ribs
- Fractures [<https://medlineplus.gov/fractures.html>] (broken bones)
- Weakness or fatigue
- Weight loss
- Frequent infections and fevers
- Feeling very thirsty
- Frequent urination

Doctors diagnose multiple myeloma using lab tests, imaging tests, and a bone marrow biopsy. Your treatment depends on how advanced the disease is and whether you have symptoms. If you have no symptoms, you may not need treatment right away. If you have symptoms, you may have chemotherapy, stem cell transplantation, radiation, or targeted therapy. Targeted therapy uses drugs or other substances that attack specific cancer cells with less harm to normal cells.

NIH: National Cancer Institute

Start Here

- General Information about Plasma Cell Neoplasms (Including Multiple Myeloma)
[https://www.cancer.gov/types/myeloma/patient/myeloma-treatment-pdq#_3]  (National Cancer Institute)
Also in Spanish [https://www.cancer.gov/espanol/tipos/mieloma-multiple/paciente/tratamiento-mieloma-pdq#_3]
- Multiple Myeloma [<https://familydoctor.org/condition/multiple-myeloma/?adfree=true>] (American Academy of Family Physicians)
Also in Spanish [<https://es.familydoctor.org/condicion/mieloma-multiple-es/?adfree=true>]
- Multiple Myeloma: Patient Handbook [<https://imf-d8-prod.s3.us-west-1.wasabisys.com/resource/patient-handbook.pdf>] (International Myeloma Foundation) - **PDF**
- Myeloma [<https://www.lls.org/myeloma/myeloma-overview>] (Leukemia & Lymphoma Society) - **PDF**
- Understanding Multiple Myeloma [<https://themmrf.org/multiple-myeloma/>] (Multiple Myeloma Research Foundation)
- What Is Multiple Myeloma? [<https://www.cancer.org/cancer/types/multiple-myeloma/about/what-is-multiple-myeloma.html>] (American Cancer Society)
Also in Spanish [<https://www.cancer.org/es/cancer/tipos/mieloma-multiple/acerca/que-es-mieloma-multiple.html>]

Symptoms

- Multiple Myeloma Symptoms and Causes [<https://www.mayoclinic.org/diseases-conditions/multiple-myeloma/symptoms-causes/syc-20353378?p=1>] (Mayo Foundation for Medical Education and Research)
Also in Spanish [<https://www.mayoclinic.org/es/diseases-conditions/multiple-myeloma/symptoms-causes/syc-20353378?p=1>]

Diagnosis and Tests

- Beta 2 Microglobulin (B2M) Tumor Marker Test [<https://medlineplus.gov/lab-tests/beta-2-microglobulin-b2m-tumor-marker-test/>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/prueba-de-marcador-tumoral-de-microglobulina-beta-2-b2m/>]
- Blood Count Tests: MedlinePlus Health Topic [<https://medlineplus.gov/bloodcounttests.html>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/bloodcounttests.html>]
- Bone Marrow Test [<https://medlineplus.gov/lab-tests/bone-marrow-tests/>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/prueba-de-la-medula-osea/>]
- Can Multiple Myeloma Be Found Early? [<https://www.cancer.org/cancer/types/multiple-myeloma/detection-diagnosis-staging/detection.html>] (American Cancer Society)
Also in Spanish [<https://www.cancer.org/es/cancer/tipos/mieloma-multiple/deteccion-diagnostico-clasificacion-por-etapas/deteccion.html>]
- Free Light Chains [<https://medlineplus.gov/lab-tests/free-light-chains/>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/cadenas-ligeras-libres/>]
- Protein Electrophoresis by Immunofixation Blood Test [<https://medlineplus.gov/lab-tests/immunofixation-ifc-blood-test/>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/electroforesis-de-proteinas-por-inmunofijacion-en-sangre/>]
- Stages of Plasma Cell Neoplasms (Including Multiple Myeloma) [https://www.cancer.gov/types/myeloma/patient/myeloma-treatment-pdq#_59]  (National Cancer Institute)
Also in Spanish [https://www.cancer.gov/espanol/tipos/mieloma-multiple/paciente/tratamiento-mieloma-pdq#_59]
- Tests to Find Multiple Myeloma [<https://www.cancer.org/cancer/types/multiple-myeloma/detection-diagnosis-staging/testing.html>] (American Cancer Society)
Also in Spanish [<https://www.cancer.org/es/cancer/tipos/mieloma-multiple/deteccion-diagnostico-clasificacion-por-etapas/pruebas.html>]
- Tumor Marker Tests [<https://medlineplus.gov/lab-tests/tumor-marker-tests/>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/marcadores-tumorales/>]
- Understanding Your Test Results [https://imf-d8-prod.s3.us-west-1.wasabisys.com/resource/u-testresults_0.pdf] (International Myeloma Foundation) - PDF

Treatments and Therapies

- Bone Marrow Transplantation: MedlinePlus Health Topic [<https://medlineplus.gov/bonemarrowtransplantation.html>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/bonemarrowtransplantation.html>]
- Drugs Approved for Multiple Myeloma and Other Plasma Cell Neoplasms [<https://www.cancer.gov/about-cancer/treatment/drugs/multiple-myeloma>]  (National Cancer Institute)
- Integrative Medicine and Complementary and Alternative Therapies [<https://www.lls.org/treatment/integrative-medicine-and-complementary-therapies>] (Leukemia & Lymphoma Society)
Also in Spanish [https://www.lls.org/sites/default/files/2022-05/FS8S_Integrative_Medicine_Complementary_Therapies_04.22_Spanish.pdf]
- Stem Cell Transplants in Cancer Treatment [<https://www.cancer.gov/about-cancer/treatment/types/stem-cell-transplant>]  (National Cancer Institute)
Also in Spanish [<https://www.cancer.gov/espanol/cancer/tratamiento/tipos/trasplante-de-celulas-madre>]
- Treatment Option Overview [https://www.cancer.gov/types/myeloma/patient/myeloma-treatment-pdq#_88]  (National Cancer Institute)
Also in Spanish [https://www.cancer.gov/espanol/tipos/mieloma-multiple/paciente/tratamiento-mieloma-pdq#_88]

Living With

- Living as a Multiple Myeloma Survivor [<https://www.cancer.org/cancer/types/multiple-myeloma/after-treatment/follow-up.html>] (American Cancer Society)
Also in Spanish [<https://www.cancer.org/es/cancer/tipos/mieloma-multiple/despues-del-tratamiento/cuidado-de-seguimiento.html>]

Related Issues

- Amyloidosis [<https://www.mayoclinic.org/diseases-conditions/amyloidosis/symptoms-causes/syc-20353178?p=1>] (Mayo Foundation for Medical Education and Research)
Also in Spanish [<https://www.mayoclinic.org/es/diseases-conditions/amyloidosis/symptoms-causes/syc-20353178?p=1>]
- Monoclonal Gammopathies [<https://www.hopkinsmedicine.org/health/conditions-and-diseases/monoclonal-gammopathies>] (Johns Hopkins Medicine)
- Questions to Ask about Multiple Myeloma [<https://www.cancer.org/cancer/types/multiple-myeloma/detection-diagnosis-staging/talking-with-doctor.html>] (American Cancer Society)
Also in Spanish [<https://www.cancer.org/es/cancer/tipos/mieloma-multiple/deteccion-diagnostico-clasificacion-por-etapas/la-comunicacion-con-su-medico.html>]
- Risk Factors for Multiple Myeloma [<https://www.cancer.org/cancer/types/multiple-myeloma/causes-risks-prevention/risk-factors.html>] (American Cancer Society)
Also in Spanish [<https://www.cancer.org/es/cancer/tipos/mieloma-multiple/causas-riesgos-prevencion/factores-de-riesgo.html>]
- What Causes Multiple Myeloma? [<https://www.cancer.org/cancer/types/multiple-myeloma/causes-risks-prevention/what-causes.html>] (American Cancer Society)
Also in Spanish [<https://www.cancer.org/es/cancer/tipos/mieloma-multiple/causas-riesgos-prevencion/que-lo-causa.html>]

Genetics

- Multiple myeloma: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/multiple-myeloma>]  (National Library of Medicine)

Statistics and Research

- Advances in Multiple Myeloma Research [<https://www.cancer.gov/types/myeloma/research>]  (National Cancer Institute)
- Key Statistics about Multiple Myeloma [<https://www.cancer.org/cancer/types/multiple-myeloma/about/key-statistics.html>] (American Cancer Society)
Also in Spanish [<https://www.cancer.org/es/cancer/tipos/mieloma-multiple/acerca/estadisticas-clave.html>]
- Myeloma [<https://seer.cancer.gov/statfacts/html/mulmy.html>]  (National Cancer Institute)
- What's New in Multiple Myeloma Research and Treatment? [<https://www.cancer.org/cancer/types/multiple-myeloma/about/new-research.html>] (American Cancer Society)
Also in Spanish [<https://www.cancer.org/es/cancer/tipos/mieloma-multiple/acerca/nuevas-investigaciones.html>]

Clinical Trials

- ClinicalTrials.gov: Multiple Myeloma [<https://clinicaltrials.gov/search?cond=%22Multiple+Myeloma%22&aggFilters=status:not%20rec>]  (National Institutes of Health)
- ClinicalTrials.gov: Plasmacytoma [<https://clinicaltrials.gov/search?cond=%22Plasmacytoma%22&aggFilters=status:not%20rec>]  (National Institutes of Health)

Journal Articles

References and abstracts from MEDLINE/PubMed (National Library of Medicine)

- Article: Population Pharmacokinetic and Pharmacokinetic-Pharmacodynamic Modeling of Serum M-Protein Response for Modakafusp... [<https://www.ncbi.nlm.nih.gov/pubmed/40686031>]
- Article: Talquetamab improves patient-reported symptoms and health-related quality of life in relapsed... [<https://www.ncbi.nlm.nih.gov/pubmed/40631904>]

• Article: Preclinical and first-in-human of purinostat mesylate, a novel selective HDAC I/IIb...
[<https://www.ncbi.nlm.nih.gov/pubmed/40562746>]

- Multiple Myeloma -- see more articles [<https://pubmed.ncbi.nlm.nih.gov/?term=%22Multiple+Myeloma%22%5Bmajr%3Anoexp%5D+AND+humans%5Bmh%5D+AND+english%5Bla%5D+AND+%22last+1+Year%22+%5Bdat%5D+AND+%28patient+education+handout%5Bpt%5D+OR+guideline%5Bpt%5D+OR+clinical+trial%5Bpt%5D%29++NOT+%28letter%5Bpt%5D+OR+case+reports%5Bpt%5D+OR+editorial%5Bpt%5D+OR+comment%5Bpt%5D%29+AND+free+full+text%5Bsb%5D+>]

Find an Expert

- American Cancer Society [<https://www.cancer.org/>]
- Choosing a Cancer Doctor [<https://www.cancer.org/cancer/managing-cancer/finding-care/where-to-find-cancer-care/choosing-a-cancer-doctor.html>] (American Cancer Society)
Also in Spanish [<https://www.cancer.org/es/cancer/como-sobrelevar-el-cancer/encontrar-tratamiento/como-elegir-un-medico-y-un-hospital/como-seleccionar-a-un-medico.html>]
- National Cancer Institute [<https://www.cancer.gov/>] 
Also in Spanish [<https://www.cancer.gov/espanol>]
- NCI - Designated Cancer Centers [<https://www.cancer.gov/research/infrastructure/cancer-centers>]
 (National Cancer Institute)
Also in Spanish [<https://www.cancer.gov/espanol/investigacion/infraestructura/centros-oncologicos>]

Patient Handouts

- Bone marrow transplant [<https://medlineplus.gov/ency/article/003009.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003009.htm>]
- Multiple myeloma [<https://medlineplus.gov/ency/article/000583.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000583.htm>]
- Protein electrophoresis - serum [<https://medlineplus.gov/ency/article/003540.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003540.htm>]
- Quantitative Bence-Jones protein test [<https://medlineplus.gov/ency/article/003597.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003597.htm>]
- Serum globulin electrophoresis [<https://medlineplus.gov/ency/article/003544.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003544.htm>]



MEDICAL ENCYCLOPEDIA

24-hour urine protein [<https://medlineplus.gov/ency/article/003622.htm>]

After chemotherapy - discharge [<https://medlineplus.gov/ency/patientinstructions/000012.htm>]

B and T cell screen [<https://medlineplus.gov/ency/article/003329.htm>]

Bone marrow transplant [<https://medlineplus.gov/ency/article/003009.htm>]

Bone marrow transplant - discharge [<https://medlineplus.gov/ency/patientinstructions/000010.htm>]

Bone-marrow transplant - series [https://medlineplus.gov/ency/presentations/100112_1.htm]

Cryoglobulins [<https://medlineplus.gov/ency/article/003555.htm>]

Immunoelectrophoresis - blood [<https://medlineplus.gov/ency/article/003541.htm>]

Immunoelectrophoresis - urine [<https://medlineplus.gov/ency/article/003592.htm>]

Immunofixation - urine [<https://medlineplus.gov/ency/article/003593.htm>]

Immunofixation blood test [<https://medlineplus.gov/ency/article/003543.htm>]

Multiple myeloma [<https://medlineplus.gov/ency/article/000583.htm>]

Protein electrophoresis - serum [<https://medlineplus.gov/ency/article/003540.htm>]

Quantitative Bence-Jones protein test [<https://medlineplus.gov/ency/article/003597.htm>]

Quantitative nephelometry test [<https://medlineplus.gov/ency/article/003545.htm>]

Serum globulin electrophoresis [<https://medlineplus.gov/ency/article/003544.htm>]

T-cell count [<https://medlineplus.gov/ency/article/003516.htm>]

Related Health Topics

[Bone Marrow Diseases](https://medlineplus.gov/bonemarrowdiseases.html) [<https://medlineplus.gov/bonemarrowdiseases.html>]

[Bone Marrow Transplantation](https://medlineplus.gov/bonemarrowtransplantation.html) [<https://medlineplus.gov/bonemarrowtransplantation.html>]

[Lymphoma](https://medlineplus.gov/lymphoma.html) [<https://medlineplus.gov/lymphoma.html>]

National Institutes of Health

The primary NIH organization for research on *Multiple Myeloma* is the National Cancer Institute [<http://www.cancer.gov/>]

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