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URL of this page: https://medlineplus.gov/myelodysplasticsyndromes.html

Myelodysplastic Syndromes
Also called: MDS

Your bone marrow [https://medlineplus.gov/bonemarrowdiseases.html] is the spongy tissue inside some of your bones, such as your hip and thigh bones. It contains immature cells, called stem cells. The stem cells can develop into the red blood cells that carry oxygen through your body, the white blood cells that fight infections, and the platelets that help with blood clotting. If you have a myelodysplastic syndrome, the stem cells do not mature into healthy blood cells. Many of them die in the bone marrow. This means that you do not have enough healthy cells, which can lead to infection, anemia [https://medlineplus.gov/anemia.html] , or easy bleeding.

Myelodysplastic syndromes often do not cause early symptoms and are sometimes found during a routine blood test. If you have symptoms, they may include:

- Shortness of breath
- Weakness or feeling tired
- Skin that is paler than usual
- Easy bruising or bleeding
- Pinpoint spots under the skin caused by bleeding
- Fever or frequent infections

Myelodysplastic syndromes are rare. People at higher risk are over 60, have had chemotherapy or radiation therapy, or have been exposed to certain chemicals. Treatment options include transfusions, drug therapy, chemotherapy, and blood or bone marrow stem cell transplants.

NIH: National Cancer Institute

Start Here

- General Information about Myelodysplastic Syndromes [https://www.cancer.gov/types/myeloproliferative/patient/myelodysplastic-treatment-pdq] NIH〉 (National Cancer Institute)

- General Information about Myelodysplastic/Myeloproliferative Neoplasms [https://www.cancer.gov/types/myeloproliferative/patient/mds-mpd-treatment-pdq#_1] NIH〉 (National Cancer Institute)
  Also in Spanish [https://www.cancer.gov/espanol/tipos/mieloproliferativas/paciente/tratamiento-mds-mpd-pdq#_1]

- Myelodysplastic Syndromes [https://www.mayoclinic.org/diseases-conditions/myelodysplastic-syndrome/symptoms-causes/syc-20366977?p=1] (Mayo Foundation for Medical Education and Research)

- Myelodysplastic Syndromes (MDS) [https://www.nmdp.org/patients/understanding-transplant/diseases-treated-by-transplant/myelodysplastic-syndromes] (National Marrow Donor Program)

- What Are Myelodysplastic Syndromes? [https://www.cancer.org/cancer/types/myelodysplastic-syndrome/about/what-is-mds.html] (American Cancer Society)
  Also in Spanish [https://www.cancer.org/es/cancer/tipos/sindrome-mielodisplasico/acerca/que-es-sindrome-mielodisplasico.html]

Diagnosis and Tests

- Blood Tests [https://www.nhlbi.nih.gov/health/blood-tests] NIH⟩ (National Heart, Lung, and Blood Institute)
  Also in Spanish [https://www.nhlbi.nih.gov/es/salud/analisis-de-sangre]

- Bone Marrow Test [https://medlineplus.gov/lab-tests/bone-marrow-tests/] NIH⟩ (National Library of Medicine)
  Also in Spanish [https://medlineplus.gov/spanish/pruebas-de-laboratorio/prueba-de-la-medula-osea/]

- How Is Chronic Myelomonocytic Leukemia Diagnosed? [https://www.cancer.org/cancer/types/chronic-myelomonocytic-leukemia/detection-diagnosis-staging/how-diagnosed.html] (American Cancer Society)

- Myelodysplastic Syndrome Prognostic Scores [https://www.cancer.org/cancer/types/myelodysplastic-syndrome/detection-diagnosis-staging/staging.html] (American Cancer Society)
  Also in Spanish [https://www.cancer.org/es/cancer/tipos/sindrome-mielodisplasico/deteccion-diagnostico-clasificacion-por-etapas/clasificacion-por-etapas.html]

- Tests for Myelodysplastic Syndromes [https://www.cancer.org/cancer/types/myelodysplastic-syndrome/detection-diagnosis-staging/how-diagnosed.html] (American Cancer Society)
  Also in Spanish [https://www.cancer.org/es/cancer/tipos/sindrome-mielodisplasico/deteccion-diagnostico-clasificacion-por-etapas/como-se-diagnostica.html]

Prevention and Risk Factors

- Can Myelodysplastic Syndromes Be Prevented? [https://www.cancer.org/cancer/types/myelodysplastic-syndrome/causes-risks-prevention/prevention.html] (American Cancer Society)
  Also in Spanish [https://www.cancer.org/es/cancer/tipos/sindrome-mielodisplasico/causas-riesgos-prevencion/prevencion.html]

- Risk Factors for Myelodysplastic Syndromes [https://www.cancer.org/cancer/types/myelodysplastic-syndrome/causes-risks-prevention/risk-factors.html] (American Cancer Society)
  Also in Spanish [https://www.cancer.org/es/cancer/tipos/sindrome-mielodisplasico/causas-riesgos-prevencion/factores-de-riesgo.html]

Treatments and Therapies

- Bone Marrow Transplantation: MedlinePlus Health Topic [https://medlineplus.gov/bonemarrowtransplantation.html] NIH⟩ (National Library of Medicine)
  Also in Spanish [https://medlineplus.gov/spanish/bonemarrowtransplantation.html]

- General Approach to Treatment of Chronic Myelomonocytic Leukemia [https://www.cancer.org/cancer/types/chronic-myelomonocytic-leukemia/treating/general-approach.html] (American Cancer Society)

- Treatment of Myelodysplastic Syndromes [https://www.cancer.gov/types/myeloproliferative/patient/myelodysplastic-treatment-pdq#_92] NIH⟩ (National Cancer Institute)
  Also in Spanish [https://www.cancer.gov/espanol/tipos/mieloproliferativas/paciente/tratamiento-mielodisplasicos-pdq#section/_94]

- Treatment Option Overview (Myelodysplastic Syndromes) [https://www.cancer.gov/types/myeloproliferative/patient/myelodysplastic-treatment-pdq#_49] NIH⟩ (National Cancer Institute)
  Also in Spanish [https://www.cancer.gov/espanol/tipos/mieloproliferativas/paciente/tratamiento-mielodisplasicos-pdq#_51]

- Treatment Option Overview (Myelodysplastic/Myeloproliferative Neoplasms) [https://www.cancer.gov/types/myeloproliferative/patient/mds-mpd-treatment-pdq#_156] NIH⟩ (National Cancer Institute)
  Also in Spanish [https://www.cancer.gov/espanol/tipos/mieloproliferativas/paciente/tratamiento-mds-mpd-pdq#_72]

Related Issues

- Aplastic Anemia and Myelodysplastic Syndromes [https://www.niddk.nih.gov/health-information/blood-diseases/aplastic-anemia-myelodysplastic-syndromes/all-content] NIH⟩ (National Institute of Diabetes and Digestive and Kidney Diseases)

- What Causes Myelodysplastic Syndromes? [https://www.cancer.org/cancer/types/myelodysplastic-syndrome/causes-risks-prevention/what-causes.html] (American Cancer Society)
  Also in Spanish [https://www.cancer.org/es/cancer/tipos/sindrome-mielodisplasico/causas-riesgos-prevencion/que-lo-causa.html]

Specifics

- Juvenile Myelomonocytic Leukemia [https://www.cancer.gov/types/myeloproliferative/patient/mds-mpd-treatment-pdq#_294] **NIH** (National Cancer Institute)
  Also in Spanish [https://www.cancer.gov/espanol/tipos/mieloproliferativas/paciente/tratamiento-mds-mpd-pdq#_39]

- Myelodysplastic/Myeloproliferative Neoplasm, Unclassifiable [https://www.cancer.gov/types/myeloproliferative/patient/mds-mpd-treatment-pdq#_307] **NIH** (National Cancer Institute)
  Also in Spanish [https://www.cancer.gov/espanol/tipos/mieloproliferativas/paciente/tratamiento-mds-mpd-pdq#_159]

- Types of Myelodysplastic Syndromes [https://www.cancer.org/cancer/types/myelodysplastic-syndrome/about/mds-types.html] (American Cancer Society)
  Also in Spanish [https://www.cancer.org/es/cancer/tipos/sindrome-mielodisplasico/acerca/tipos-de-sindromes-mielodisplasicos.html]

- What Is Chronic Myelomonocytic Leukemia? [https://www.cancer.org/cancer/types/chronic-myelomonocytic-leukemia/about/what-is-chronic-myelomonocytic.html] (American Cancer Society)

Genetics

- 5q minus syndrome: MedlinePlus Genetics [https://medlineplus.gov/genetics/condition/5q-minus-syndrome] **NIH** (National Library of Medicine)

- Do We Know What Causes Chronic Myelomonocytic Leukemia? [https://www.cancer.org/cancer/types/chronic-myelomonocytic-leukemia/causes-risks-prevention/what-causes.html] (American Cancer Society)

Statistics and Research

- Statistics about Myelodysplastic Syndromes [https://www.cancer.org/cancer/types/myelodysplastic-syndrome/about/key-statistics.html] (American Cancer Society)
  Also in Spanish [https://www.cancer.org/es/cancer/tipos/sindrome-mielodisplasico/acerca/estadisticas-clave.html]

- What's New in Myelodysplastic Syndrome Research? [https://www.cancer.org/cancer/types/myelodysplastic-syndrome/about/new-research.html] (American Cancer Society)
  Also in Spanish [https://www.cancer.org/es/cancer/tipos/sindrome-mielodisplasico/acerca/nuevas-investigaciones.html]

Clinical Trials

- ClinicalTrials.gov: Myelodysplastic Syndromes [https://clinicaltrials.gov/search?cond=%22Myelodysplastic+Syndromes%22&aggFilters=status:not%20rec] **NIH** (National Institutes of Health)

Journal Articles

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

- Article: Identification of Genetic Variants Using Next-Generation Sequencing in Pediatric Myelodysplastic Syndrome:... [https://www.ncbi.nlm.nih.gov/pubmed/40725152]

- Article: Impact of Decitabine Conditioning on Allo-HSCT Outcomes in AML and Intermediate-to-High-Risk... [https://www.ncbi.nlm.nih.gov/pubmed/40698589]

- Article: Humanized mouse models in MDS. [https://www.ncbi.nlm.nih.gov/pubmed/40675972]

- Myelodysplastic Syndromes -- see more articles [https://pubmed.ncbi.nlm.nih.gov/?term=%22Myelodysplastic+Syndromes%22%5Bmajr%3Anoexp%5D+AND+humans%5Bmh%5D+AND+english%5Bla%5D+AND+%22last+1+Year%22+%5Bedat%5D+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/]

- National Cancer Institute [https://www.cancer.gov/] **NIH**
  Also in Spanish [https://www.cancer.gov/espanol]

- National Heart, Lung, and Blood Institute [https://www.nhlbi.nih.gov/] NIH⟩

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]

- Bone marrow transplant - discharge [https://medlineplus.gov/ency/patientinstructions/000010.htm] (Medical Encyclopedia)
  Also in Spanish [https://medlineplus.gov/spanish/ency/patientinstructions/000010.htm]

MEDICAL ENCYCLOPEDIA

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]

Myelodysplastic syndrome [https://medlineplus.gov/ency/article/007716.htm]

Related Health Topics

Bone Marrow Diseases [https://medlineplus.gov/bonemarrowdiseases.html]

National Institutes of Health

The primary NIH organization for research on *Myelodysplastic Syndromes* is the National Cancer Institute [http://www.cancer.gov/]

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