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## Bone Marrow Transplantation

Bone marrow 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 red blood cells, which carry oxygen throughout the body, white blood cells, which fight infections, and platelets, which help the blood to clot.

A bone marrow transplant is a procedure that replaces a person's faulty bone marrow stem cells. Doctors use these transplants to treat people with certain diseases, such as:

- Leukemia [<https://medlineplus.gov/leukemia.html>]
- Severe blood diseases such as thalassemias [<https://medlineplus.gov/thalassemia.html>] , aplastic anemia [<https://medlineplus.gov/aplasticanemia.html>] , and sickle cell anemia [<https://medlineplus.gov/sicklecelldisease.html>]
- Multiple myeloma [<https://medlineplus.gov/multiplemyeloma.html>]
- Certain immune deficiency diseases

Before you have a transplant, you need to get high doses of chemotherapy and possibly radiation. This destroys the faulty stem cells in your bone marrow. It also suppresses your body's immune system so that it won't attack the new stem cells after the transplant.

In some cases, you can donate your own bone marrow stem cells in advance. The cells are saved and then used later on. Or you can get cells from a donor. The donor might be a family member or unrelated person.

Bone marrow transplantation has serious risks. Some complications can be life-threatening. But for some people, it is the best hope for a cure or a longer life.

*NIH: National Heart, Lung, and Blood Institute*

### Start Here

- About Transplantation -- Blood Stem Cell [<https://bloodstemcell.hrsa.gov/transplant-basics/about-transplantation>]  
(Health Resources and Services Administration)
- Finding a Blood Stem Cell Donor [<https://www.nmdp.org/patients/understanding-transplant/finding-a-donor>]  
(National Marrow Donor Program)
- Getting a Stem Cell or Bone Marrow Transplant [<https://www.cancer.org/cancer/managing-cancer/treatment-types/stem-cell-transplant/process.html>] (American Cancer Society)  
Also in Spanish [<https://www.cancer.org/es/cancer/como-sobrellevar-el-cancer/tipos-de-tratamiento/trasplante-de-celulas-madre/efectos-secundarios-del-trasplante.html>]
- 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>]
- Treatments for Blood Disorders [<https://www.nhlbi.nih.gov/health/blood-bone-marrow-treatments>]  
 (National Heart, Lung, and Blood Institute)  
Also in Spanish [<https://www.nhlbi.nih.gov/es/salud/sangre-y-medula-osea-tratamientos>]

What is a bone marrow or blood stem cell transplant [<https://www.nmdp.org/patients/understanding-transplant>] (National Marrow Donor Program)

## Living With

- Life After Bone Marrow or Blood Stem Cell Transplant [<https://www.nmdp.org/patients/transplant-support/life-after-transplant>] (National Marrow Donor Program)

## Related Issues

- Donating Stem Cells and Bone Marrow [<https://www.cancer.org/cancer/managing-cancer/treatment-types/stem-cell-transplant/donors.html>] (American Cancer Society)  
Also in Spanish [<https://www.cancer.org/es/cancer/como-sobrellevar-el-cancer/tipos-de-tratamiento/trasplante-de-celulas-madre/proceso.html>]
- Planning for a Transplant -- Blood Stem Cell [<https://bloodstemcell.hrsa.gov/transplant-basics/planning-transplant>] (Health Resources and Services Administration)
- Stem Cell or Bone Marrow Transplant Side Effects [<https://www.cancer.org/cancer/managing-cancer/treatment-types/stem-cell-transplant/transplant-side-effects.html>] (American Cancer Society)  
Also in Spanish [<https://www.cancer.org/es/cancer/como-sobrellevar-el-cancer/tipos-de-tratamiento/trasplante-de-celulas-madre/donantes.html>]
- Treatment Before Transplant [<https://www.nmdp.org/patients/transplant-support/preparing-for-transplant/treatment-before-transplant>] (National Marrow Donor Program)
- What is Graft-Versus-Host-Disease? [<https://www.nmdp.org/patients/transplant-support/life-after-transplant/physical-recovery/graft-versus-host-disease>] (National Marrow Donor Program)

## Images

- Bone-marrow transplant - series [[https://medlineplus.gov/ency/presentations/100112\\_1.htm](https://medlineplus.gov/ency/presentations/100112_1.htm)] (Medical Encyclopedia)  
Also in Spanish [[https://medlineplus.gov/spanish/ency/esp\\_presentations/100112\\_1.htm](https://medlineplus.gov/spanish/ency/esp_presentations/100112_1.htm)]


## Videos and Tutorials

- Becoming a Blood Stem Cell Donor [<https://www.youtube.com/watch?v=mnTnkR7I0zk>]   (National Cancer Institute)

## Statistics and Research

- Donation and Transplantation Statistics [<https://bloodstemcell.hrsa.gov/data/donation-and-transplantation-statistics>] (Health Resources and Services Administration)

## Clinical Trials


- ClinicalTrials.gov: Bone Marrow Transplantation [<https://clinicaltrials.gov/search?intr=bone+marrow+transplantation&aggFilters=status:not%20rec>]  (National Institutes of Health)

## Journal Articles

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

- Article: Annual household income and chronic pulmonary conditions in long-term survivors of... [<https://www.ncbi.nlm.nih.gov/pubmed/40652197>]
- Article: Efficacy and clinical outcomes of bone-marrow mononuclear cell therapy in chronic... [<https://www.ncbi.nlm.nih.gov/pubmed/40618035>]
- Article: Assessing the latest advances in bone marrow stem cell therapy for... [<https://www.ncbi.nlm.nih.gov/pubmed/40554507>]
- Bone Marrow Transplantation -- see more articles [<https://pubmed.ncbi.nlm.nih.gov/?term=%22Bone+Marrow+Transplantation%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

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

## Patient Handouts

- Bone marrow (stem cell) donation [<https://medlineplus.gov/ency/patientinstructions/000839.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000839.htm>]
- 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>]
- Bone marrow transplant in children - discharge [<https://medlineplus.gov/ency/patientinstructions/000938.htm>]  
(Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000938.htm>]



## MEDICAL ENCYCLOPEDIA

- Bone marrow (stem cell) donation [<https://medlineplus.gov/ency/patientinstructions/000839.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 in children - discharge [<https://medlineplus.gov/ency/patientinstructions/000938.htm>]
- Bone-marrow transplant - series [[https://medlineplus.gov/ency/presentations/100112\\_1.htm](https://medlineplus.gov/ency/presentations/100112_1.htm)]
- Graft-versus-host disease [<https://medlineplus.gov/ency/article/001309.htm>]

## Related Health Topics

- Bone Marrow Diseases [<https://medlineplus.gov/bonemarrowdiseases.html>]
- Stem Cells [<https://medlineplus.gov/stemcells.html>]

## National Institutes of Health

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

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