**Bone Marrow Transplants**

Bone marrow is the soft, spongy tissue inside the large bones in the body. It makes red blood cells (which carry oxygen to all the tissues in the body), white blood cells (which fight infection) and platelets (which make the blood clot).

A variety of blood disorders, blood dyscrasias (diseases), blood cancers, bone marrow cancers, and other disease are potentially treated with stem cell transplants, including:

- Acute leukemia (AML, ALL)
- Adrenoleukodystrophy (ALD)
- Adult neuroblastoma
- Amyloidosis
- Aplastic anemia
- Chronic leukemia (CML, CLL)
- Congenital bone marrow failure syndromes
- Hodgkin's lymphoma (HL)
- Multiple myeloma
- Myelodysplastic syndrome (MDS)
- Myeloproliferative disorders
- Non-Hodgkin's lymphoma (NHL)
- Primary central nervous system (CNS) lymphoma
- Relapsed germ cell tumor

If you show symptoms of any of these conditions, your doctor may order blood tests to help make a diagnosis. The doctor may also conduct a bone marrow biopsy to assess for several of the conditions listed above. This test involves inserting a needle into a bone to remove a sample of the bone marrow. The sample usually comes from the back of your hip bone. By examining the bone marrow under a microscope and performing other tests, a doctor can usually identify if there is an issue in the bone marrow, and if so, plan the appropriate treatment.

![Bone marrow biopsy](image)

**What Is a Bone Marrow Transplant?**

You may also hear this procedure called a “hematopoietic stem cell transplant.”

This procedure can be either autologous or allogeneic.

- In an **autologous bone marrow transplant**, patients receive their own stem cells. If no complications develop, patients will usually be in the hospital for about 2 – 3 weeks.

- In an **allogeneic bone marrow transplant**, patients receive donor stem cells. If no complications develop, patients will be in the hospital for anywhere from 1 – 5 weeks.
depending much on how much chemotherapy / radiation is given and what stem cell source is used. Options for source of stem cells include:

- Matched related donor transplants (usually a sibling)
- Unrelated donor transplants (identified through the National Marrow Donor Program)
- Haploidentical transplants (mismatched related donor – often a child, sibling, or parent)
- Umbilical cord blood transplants (from cord blood banks)

Patients go through four steps during BMT:
1. Conditioning - chemotherapy and/or radiation given the week before transplant
2. Transplant – getting the infusion of bone marrow or stem cells
3. Nadir – period of low blood counts
4. Engraftment – when the transplanted bone marrow or stem cells start making new blood cells

After a bone marrow transplant, the donated stem cells start making new blood cells from within the bone marrow. You will have very close follow-up care with your treatment team after you are discharged from the hospital.