Basics of Bone Marrow and Cord Blood Transplantation

A bone marrow or cord blood transplant may be one way to treat your disease. The goal of this fact sheet is to help you better understand what a bone marrow or cord blood transplant is and how it works.

What is a bone marrow or cord blood transplant?

If your marrow or blood cells become diseased or cancerous, it can be life-threatening. For many patients, a bone marrow or cord blood transplant is a treatment option. A marrow or blood cell transplant replaces your unhealthy blood-forming cells with healthy ones. The cells used in transplant can come from three sources:

- Bone marrow
- Peripheral (or circulating) blood
- Blood collected from an umbilical cord after a baby is born

Because of the different sources of cells, you may hear and see different phrases to describe the transplant process. These terms include “bone marrow transplant,” “stem cell transplant,” “blood and marrow transplant,” “hematopoietic cell transplant” or just BMT. The National Marrow Donor Program® (NMDP) uses the phrase “bone marrow or cord blood transplant.”

To prepare your body for transplant, chemotherapy and/or radiation will be given before you receive the new cells. This is given for 7 to 10 days before the transplant. Blood-forming cells are then transplanted from a healthy matched donor and put into your body. These newly transplanted cells begin to grow, giving you a new immune system.

Cells can be taken from donors (allogeneic) or from you, the patient (autologous).

A transplant using your own cells is called an **autologous transplant**. For an autologous transplant, cells will be collected from your bloodstream (or, less often, from your marrow) and stored for your transplant.

A transplant using cells from a family member, unrelated donor or cord blood unit is called an **allogeneic transplant**. The tissue type of the donor or cord blood unit must closely match the patient’s. If a family member does not match, your doctor or transplant center team can search for unrelated donors using the NMDP Registry. The Registry lists more than 5.5 million potential donors and more than 45,000 cord blood units.

The type of transplant and cell source that is right for you will be determined by your disease and other health factors.

There are two types of allogeneic transplants:

- High-dose transplants (also called standard or myeloablative transplants): In a high-dose transplant, the patient receives high doses of chemotherapy and/or radiation to destroy most of the diseased cells.
- Reduced-intensity transplants (also called mini- or non-myeloablative transplants): A reduced-intensity transplant uses much lower doses of chemotherapy and/or radiation than in a high-dose transplant. In this type of transplant, the chemotherapy and/or radiation does not completely destroy the disease. **For more information about reduced-intensity transplants, talk to your doctor. You can also contact the Office of Patient Advocacy to receive a fact sheet on reduced-intensity transplants.**
What are some diseases treated with transplant?
Leukemia, lymphoma, aplastic anemia, inherited disorders and many other diseases are treated with transplants.

How do I decide if a transplant is the right treatment for me?
A transplant is not for everyone. A transplant doctor can answer your questions and help you decide if it is a good option for you. If it is, you will want to compare it to other treatment options with the help of your doctor, as well as your family and friends.

Where can I get a bone marrow or cord blood transplant?
Not all hospitals have experience doing all types of transplants. Ask your doctor if they can refer you to a transplant hospital – also called a transplant center. The NMDP’s Office of Patient Advocacy can also provide you with a list of hospitals with transplant experience, or you can go online at marrow.org/access to search for a transplant center.

If you live outside the United States, there are many transplant centers available throughout the world. For information about one of the NMDP’s international transplant centers, you can e-mail us at patientinfo@nmdp.org

How much does a transplant cost?
Transplants are expensive. OPA's fact sheet Your Finance and Insurance Matters can provide some basic information on the costs of having a transplant. If you would like help in planning for the costs of a transplant, OPA has a resource called Mapping the Maze that can help. This financial booklet is also available online at marrow.org

For more specific information about what it would cost you to have a transplant, you should contact your health insurance company and the transplant center.