

Bone marrow donors

Bone marrow tissue, found in the hollow centre of our long bones, is the factory where new blood cells are made. Without marrow our bodies would be unable to produce the white cells we need to fight infection, the red blood cells we need to carry oxygen and the platelets we need to stop bleeding.

Certain types of illnesses and treatments can destroy the bone marrow. This leaves the patient unable to produce the new blood cells they need to fight infection and recover.

Some illnesses and treatments destroy marrow

Leukaemia

Leukaemia is one such disease, it is a cancer of the bone marrow cells. Sometimes it is necessary to destroy the patient's diseased bone marrow and replace it with a transplant from a healthy compatible person.

Aplastic anaemia

Some people may stop making blood for a variety of reasons and this is known as aplastic anaemia. Blood transfusions may be helpful for a time but severely affected patients will die unless normal bone marrow is transplanted.

Defective immune systems

Some children are born without an adequately functioning immune system. Modern blood transfusion methods can help but the most serious cases will only respond to a bone marrow transplant.

What does the donor do?

After an interview, a blood sample is taken for tissue typing. The result is then put on a confidential computer record. When a patient needs a transplant a number of possible donors will be asked to attend for additional blood tests to identify the donor with the best match. In practice, the chance of being selected as a bone marrow donor is relatively small.

As with blood donors, bone marrow donors will be required to answer specific questions relating to the risk of transmitting infections to the person who receives the donation.

How is the bone marrow removed from the donor?

Due to the amount of marrow required, the donor is given a general anaesthetic. Under operating theatre conditions, marrow is withdrawn from the hipbones by syringe. This is easily done without causing any damage but the donor may feel some discomfort for a day or two.

Who can help?

You can, if you are aged between 18 and 50, and in good health with no history of cancer.

How are donors and patients matched?

Just as there are many red cell groups, known as blood groups, there are a variety of white cell groups known as tissue types. In the same way as a blood transfusion needs to be matched for a particular blood group, bone marrow transplants need to be matched for their tissue types. The best match is usually found from a family member (brothers and sisters). Unfortunately only one in four patients have such a suitable donor.

Because there are a great number of tissue types, it takes an extremely large register of donors (many thousands) to find an unrelated matched donor for patients.

How is a bone marrow transplant done?

First the patient is given a high dose of chemotherapy or radiotherapy to destroy diseased cells and then the donor's marrow cells are injected into a vein just like a blood transfusion.

Confidentially is assured

The Australian Bone Marrow Donor Registry is confidential and only the Tissue Typing Laboratory will be able to identify you and your tissue type.

The Bone Marrow Donor Institute

The Bone Marrow Donor Institute (BMDI):

- Recruits potential bone marrow donors.
- Funds the BMDI Cord Blood Bank - a bank of umbilical cords which may also be used for a life saving transplant.
- Funds research into leukaemia, breast cancer and the improvement of bone marrow transplantation.
- Is establishing a BMDI Accommodation Centre - for patients and their families to stay whilst patients undergo long term treatment for life threatening illnesses.
- Supports patients and families through the Leukaemia Family Support Group and the Bone Marrow Transplant Support Group which offers non-medical advice and practical support.
- Organises the Breast Cancer Support Group which provides an ongoing education, information and support network, to enable any woman with breast cancer to make an informed decision on her choice of treatment.

Where to get help

- Bone Marrow Donor Institute (03) 9342 7888

Things to remember

- Some illnesses and treatment require bone marrow transplants
- Joining the bone marrow donor register may mean you can save someone's life.
- Exact tissue matches outside families are very hard to find
- The register is totally confidential.

This page has been produced in consultation with, and approved by:

Bone Marrow Donor Institute

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