All about bone marrow donation [1]

(1) Dear Alice,

What is involved in being tested to be a bone marrow transplant donor?

(2) Dear Alice,

I am interested in donating bone marrow, but seem unable to find any information on doing so. Could you give me some info on the procedure and also who I contact if I decide to do so?

Thank you,
Laura

Answer

Dear Reader and Laura,

Kudos to you both for your interest in this vital donation procedure and to you, Laura, for considering being a donor. Being a donor of any kind is a truly selfless, generous, and giving act. As you may know, bone marrow transplantations (used to extract stem cells) can help treat life-threatening diseases, such as leukemia, solid tumor cancers, and lymphomas. Currently, there are a number of procedures available to extract these stem cells, but the rest of the donation process is quite similar. In the past, the stem cells were drawn from donors’ bones in what was a somewhat invasive surgical procedure. Nowadays, stem cells are more commonly collected directly from blood in a process called peripheral blood stem cell (PBSC) donation. Additionally, some stem cells may be drawn out from an umbilical cord after birth, but due to the limited amount of stem cells available from this source, it’s usually reserved for use in children and babies.
Regardless of the way the stem cells are removed for donation, potential donors are first provided with general information and are asked to sign a consent form. Then, a blood sample is drawn for human leukocyte (white blood cell) antigen (HLA) type testing. The results are entered onto the National Marrow Donor Program Registry, which is an internationally used database. Volunteers will be contacted for further testing when there is a preliminary match with a patient. If additional testing confirms compatibility with the patient, the volunteer will learn more specific and detailed information; undergo a few more tests to verify that they are free of any diseases (genetic or infectious) that could be passed along to a transplant recipient. A health care provider will go over the donor’s family health history and current health as well.

Once everything has been cleared and approved to proceed, the volunteer then decides whether or not to become a donor. If it’s a go, the donor will be asked for either a PBSC or a marrow donation. A PBSC donation is a non-surgical, outpatient procedure, meaning no hospital stay is required. Medication to stimulate the stem cell production is usually started several days prior to the procedure. During the procedure, a donor undergoes a process called apheresis: a catheter is either placed in a vein in her/his arm, so that the extracted blood can be sent to a machine to collect the stem cells. From that machine, blood is sent back to the donor’s body through another tube in her/his other arm. If a donor’s arm veins are too small or too thin, the catheters may be inserted into the chest, neck, or groin. The process takes about six hours total and additional sessions may be required depending on the amount of stem cells needed. It’s possible that a donor may feel lightheaded, get the chills, experience numbness, tingling in the mouth, and/or cramps in the hands during the procedure, but these symptoms typically subside when it’s over. Side effects from the procedure are rare, but can include bleeding, infection, and air being trapped between the lungs and chest wall (a condition called pneumothorax [2]).

A marrow donation is a surgical procedure, which would be performed under either general or local anesthesia at a hospital. During a marrow donation procedure, marrow is harvested from the donor’s bone with a special needle. When the donor is awake and alert after the procedure, s/he is released from the hospital. Getting back to a normal routine after the procedure is usually only takes a few days. Some soreness may be experienced, but this is brief and pain reliever can be used to treat it.

Now that you know the steps involved in becoming a bone marrow donor, if you decide to volunteer, whom do you contact? You can check out the National Marrow Donor Program (NMDP) [3] website to get the ball rolling.

Alice!
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