



Mr Kelvin Lin, a BMDP marrow donor who underwent PBSC Collection



Kelvin and his family

Making a Difference

Making the Choice to Be a Bone Marrow Stem Cell Donor

Every day, 6 Singaporeans are diagnosed with a blood disease. It can be anyone we know - a family member, a friend or an acquaintance. The reality of blood diseases is that it can strike anyone at any time, even people who are young and healthy.

To some of those who are affected, a bone marrow transplant is their last chance of survival. A bone marrow transplant is an infusion of healthy blood stem cells from a donor into a patient's body to stimulate new bone marrow growth. It helps the patient restore the production of healthy blood cells for them to function normally.

In Singapore, this is not common knowledge. That is probably why the marrow donor registry has only 110,000 registered donors and more than half of our patients who required a marrow transplant received theirs from overseas donors. With the current COVID-19 situation which has badly affected air transportation, the need to build up our local registry could not be more urgent.

Bone marrow transplants have been performed for more than 50 years internationally and have proven to be an important form of therapy for patients with advanced blood cancers, such as leukaemia, lymphoma and myeloma. The success rate for adult transplants varies from 50-80% and depends on factors such as the patient's age, aggressiveness of the cancer and type of donor.

Matching a donor to a patient is more complex than matching blood types. A close Human Leukocyte Antigens (HLA) match between a donor and a patient is important as it improves the chances of a successful transplant. Often, a patient's siblings may be a match, but the odds are only at 25%. For patients who are unable to find a suitable donor within the family, an HLA-matched unrelated donor from a marrow donor registry is the next best option.

BONE MARROW DONOR PROGRAMME (BMDP)

In Singapore, the only marrow donor registry that manages a pool of volunteer marrow donors is the Bone Marrow Donor

Programme (BMDP), where I serve as the President. As mentioned, BMDP has approximately 110,000 donors in its register and facilitated more than 800 transplants globally to date.

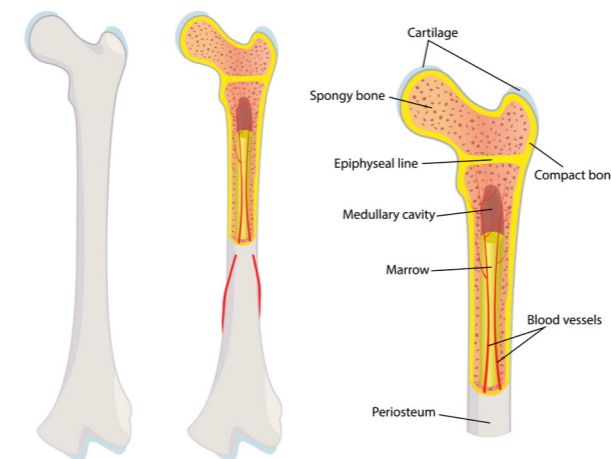
Since joining BMDP, one of the biggest challenges that I have faced is encouraging younger people and ethnic minority groups to step forward, and sign up as potential marrow donors. In recent years, we have been reaching out to the communities to target and educate these populations so that they are well-informed about bone marrow donation.

COMMON MISCONCEPTIONS

There are many myths surrounding bone marrow donation. The most common question we get asked is whether bone marrow donation can cause long-term infertility. This is completely untrue as there is no evidence that bone marrow donation affects fertility at all. In fact, we have seen many donors who have had children after donation.

One such donor is Mr Kelvin Lin. Prior to his bone marrow donation, his parents shared their concerns on the impact that the donation may have on his family planning. They were later assured that the donation had no correlation with his chances of having children.

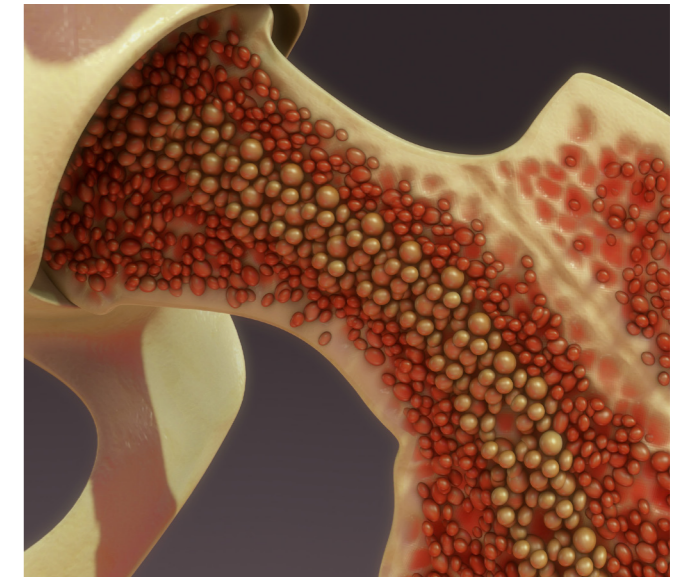
True enough, 10 months after Kelvin's donation, his wife got pregnant. This news overwhelmed his family with joy and serves as an affirmation that debunked their initial misconception.



Kelvin opted for Peripheral Blood Stem Cell (PBSC) Collection – a method that collects a donor's stem cells from the blood stream. He shared, "Five days leading up to the donation, I had to administer a Granulocyte-Colony Stimulating Factor (G-CSF) injection daily to stimulate the stem cell production in my body. My wife helped me administer the injections every morning."

On the donation day, his stem cells were collected through an apheresis machine. "I recovered quite fast and resumed my activities the next day. My biggest reward from this experience is to be given the opportunity to save someone's life," he added.

Apart from the infertility myth, I want to highlight and debunk another common misconception that bone marrow donation is taken from the spine. This is not true as the



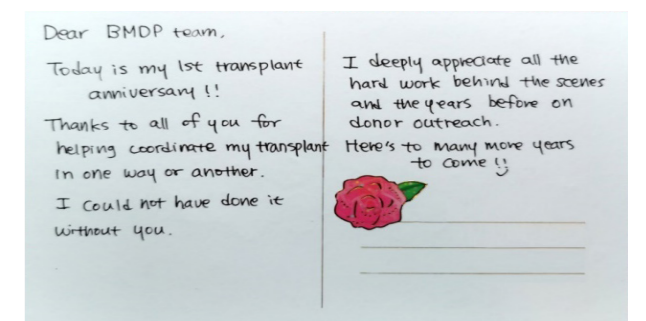
spine is not involved in bone marrow extraction at all. There are actually two methods of donation – one that extracts the stem cells directly from the blood, like the method Kelvin took, and another where stem cells are extracted from the pelvic bone (bone marrow collection). Presently, around 90% of collections are done via direct extraction of stem cells from the peripheral blood.

JOINING BMDP

Every month, about 50 patients in Singapore are on the waiting list to find a match for a bone marrow transplant. Their chances of survival can be increased if more people step forward to register as a marrow donor with BMDP.

However, due to restrictions on face-to-face activities brought about by COVID-19, the number of registered marrow donors in Singapore has dropped significantly in the past year. It is, therefore, my hope that more Singaporeans can step forward and join BMDP in its life-saving mission. I also hope to see more companies open their doors to BMDP's staff to make presentations; more individuals step forward to be BMDP's ambassadors and share its mission with their friends; and greater support from the media to help in this task of public education.

Each day that passes is another day where a patient waits for a life-saving match to be found. So consider becoming a marrow donor today - the sooner, the better!



A note from a patient to the BMDP team celebrating his 1st year post-transplant

Joining the registry is easier than you think. If you are aged between 18 and 49, and are in good health, you can register to be a potential marrow donor by scanning the QR code or visiting www.bmdp.org and following the simple steps below:



The swab kit contains two buccal swabs, one for each side of the cheek. The process to do the cheek swab is easy. Simply:

- Swab your left inner cheek in rotating motion for 40 seconds
- Air dry the stick before gently placing it back in the folder
- Repeat the same step for your right cheek

These swabs will be analysed and tested for HLA tissue markers which will be primarily checked against any patient who needs a transplant. If you are identified to be a match, you will receive a call from BMDP. **PRIME**

For more information on BMDP, visit:

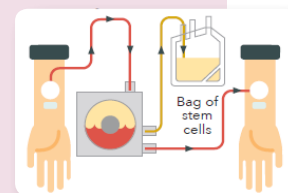
www.bmdp.org

BONE MARROW DONATION METHODS

There are two methods of donation, and both are simple and straightforward. In both methods, your body will naturally replace the stem cells/bone marrow completely within 4 to 6 weeks.

1. Peripheral Blood Stem Cell (PBSC) Collection

In this method, blood stem cells are collected straight from the blood stream.



In order to increase your body's production of blood stem cells, you will receive daily injections of G-CSF on the 4 days leading up to the donation, and on the day of the donation itself. During the donation, your blood is collected from one arm, passed through a machine that extracts the blood stem cells and returns all remaining blood to you through your other arm. The process takes between 5 to 7 hours.

Are there any risks or side effects?

You might experience some flu-like symptoms, slight bone aches or feeling of heaviness during the five days of the G-CSF injections. This discomfort disappears once the collection is completed.

2. Bone Marrow Collection

This is a method where the bone marrow is collected from the pelvic bone.



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Drawing on his experience working with donor registers in the UK and Europe, Dr Lim is passionate about promoting the education of blood disorders and supporting the needs of patients and families affected by blood cancer.

