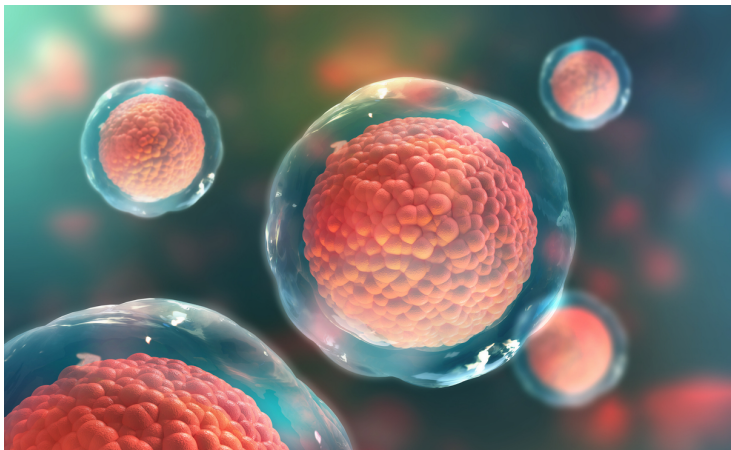


## From Swab to Registry in stem cell donation

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### Why Your Registration as A Potential Blood Stem Cell Donor Counts So Much



Blood cancer and blood disorders like Thalassemia and Aplastic Anemia is on a rise and every 5 minutes, someone in India receives the shattering news that they have been diagnosed with the disease.

Many patients are children and young people whose only chance of recovery is a blood stem cell donation. Only about 30% of the patients in need of a stem cell transplant as life-saving treatment, are able to find a sibling match. The rest 70% depend on finding a matching unrelated donor.

Blood stem cell transplants are used to treat blood cancer and blood disorders. However, donor's health status differs, and the suitability of a match is based on the patient and donor's human leukocyte antigen (HLA) combination (tissue type), rather than blood type.

There are more than 22,000 HLA characteristics that exist (and more keep being discovered!), which exist in millions of combinations. This makes finding matches difficult. That's why it's so important to have more people register as potential blood stem donors. The more donors, the higher chances for matches. And more the hope.

**So, what exactly are HLA characteristics?** HLA tissue characteristics are much more complex than matching blood types. HLA stands for Human Leukocyte Antigens (characteristics of human white blood cells) and these 'markers' identify cells that belong to you. Your body uses this information to determine 'friend or foe' and generally the immune system will attack anything not marked as 'friend'. There is a great diversity of HLA and the cheek swab is currently tested for up to 10 characteristics. Half are inherited from your mother and half from your father. This means you and your sibling have a 25-30% chance of having exactly the same HLA characteristics. This means that most patients are unable to have a donation from a sibling, and an unrelated donor is required. This donor should ideally be a perfect HLA match.

As HLA types are inherited, the best chance of finding a suitable donor may be with someone of a similar ethnic background. Some people have very diverse tissue types based on their ancestry that can affect their chances of finding a matching donor. Especially people of Indian origin have unique HLA characteristics and Indian patients mainly require an Indian tissue match which means that we need to increase the awareness and encourage many more people in India to register as a

potential blood stem cell donor.

### **How can you register as a blood stem cell donor?**

A blood stem cell transplant from a matching donor could be a patient's last chance of survival. Becoming a stem cell donor is easy.

- It is advisable for people between the age of 18-50 to register as a potential blood stem cell donor. Educating yourself on the do's and don'ts and myths is the first step to registering.

When you are ready to register, you are asked to complete the consent form and swab the inside of your cheeks to collect your all-important tissue cells. Swabbing of the cheeks help determine your HLA type which is important for the patient as similar HLA type leads to a successful transplant.

- The sample is then taken ahead for HLA testing in the laboratory, and your details are entered into the database. These details are further available when there is a requirement for stem cell donors.

Once you come up as a match, stem cells will be obtained from the bloodstream using a procedure called peripheral blood stem cell donation, which is like a blood platelet donation wherein only your blood stem cells are taken. This is very safe, non-surgical outpatient procedure.

**Patrick Paul, CEO, DKMS-BMST Foundation**