

# DKMS AFRICA: OUR APPROACH TO GIVE MORE PATIENTS IN SOUTH AFRICA A SECOND CHANCE AT LIFE

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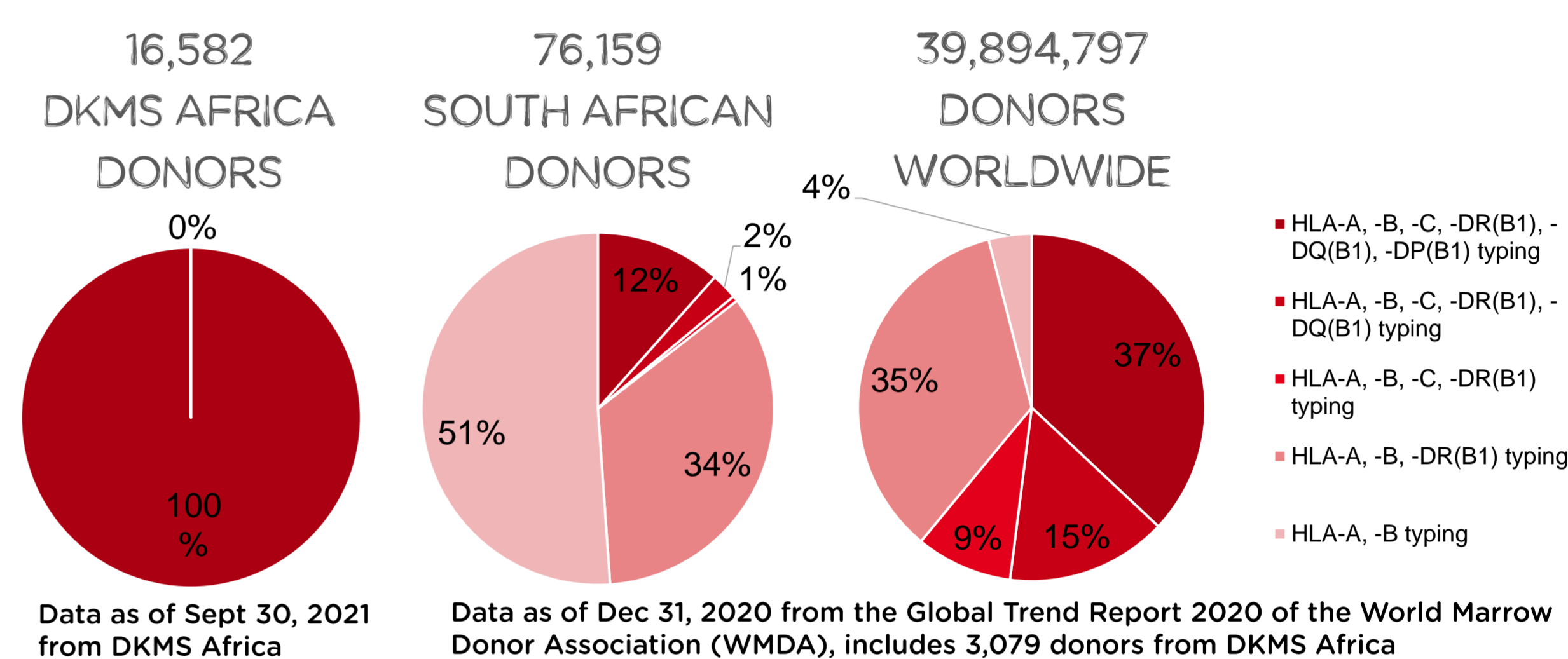
## INTRODUCTION

DKMS Africa, formerly known as The Sunflower Fund, is a stem cell donor registry situated in Cape Town. Since 2021, DKMS Africa has become part of the international DKMS group, that currently registers over 11 Million potential unrelated stem cell donors in seven countries, representing 28.6% of the worldwide donor pool. Our mission is to provide as many patients in need of hematopoietic stem cell transplantation as possible with a second chance at life.

We here present data about registered stem cell donors in South Africa and their data quality. Further, calculations have been carried out to determine the HLA diversity and the matching probability for patients in South Africa. Our results show clear potential for optimization of our donor recruitment strategies to find more matches for patients in South Africa.

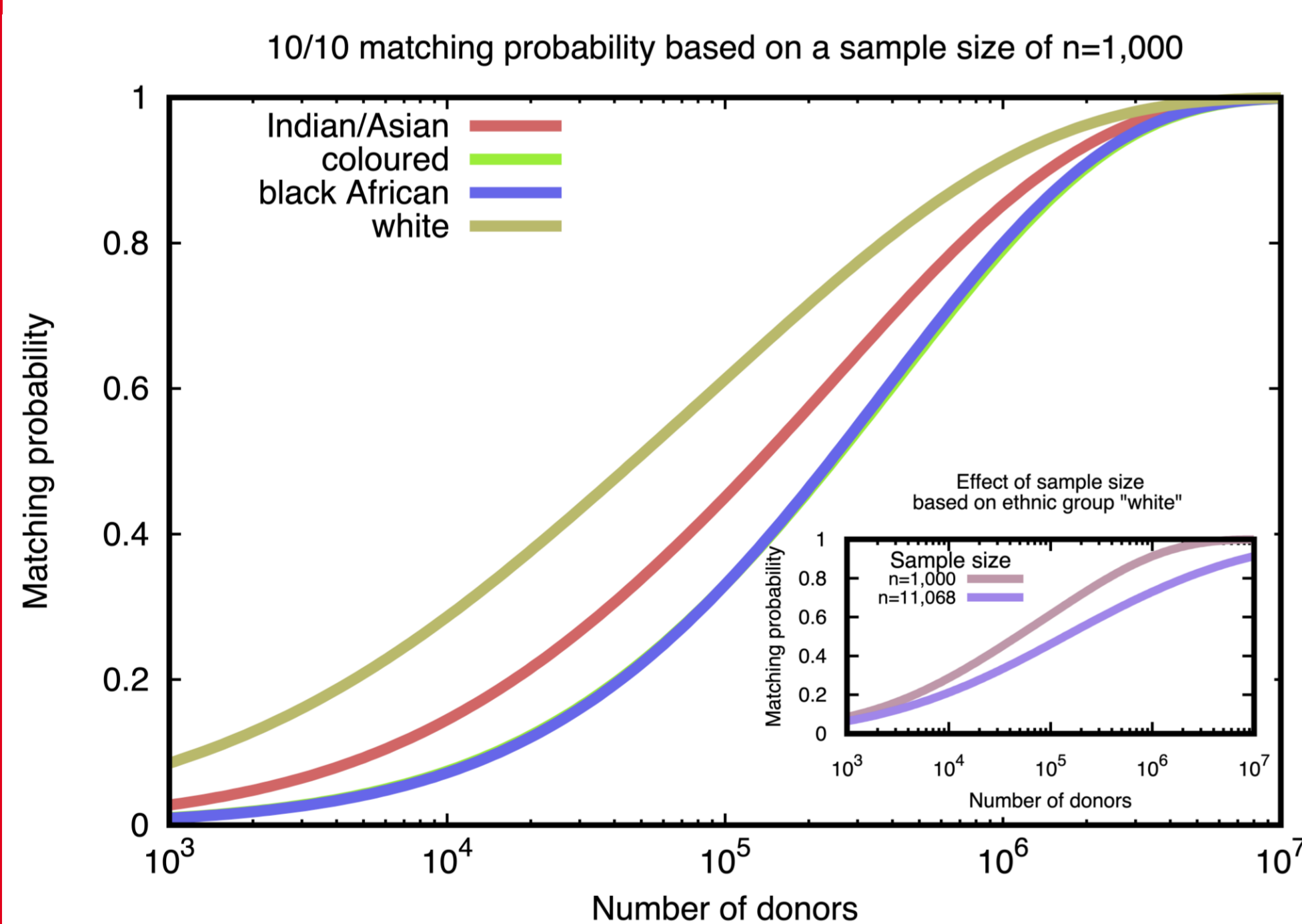
## HLA TYPING QUALITY OF DONORS

As of Sept. 24, 2021, DKMS Africa registered 15,343 donors typed for HLA-A, -B, -C, -DRB1, -DQB1, -DPB1 at high-resolution alongside other markers, such as ABO/RhD blood group, CCR5 and antigen status against cytomegalovirus. The figure to the right shows the data quality of our database, compared to the donor pool registered in South Africa and worldwide. While more than 50% of the worldwide donor pool has all matching relevant HLA loci typed, in South Africa, at the same point in time, this was only true for 14% of registered donors.



## MATCHING PROBABILITIES IN SOUTH AFRICA

We performed haplotype frequency calculations to assess HLA diversity and matching probability of patients and donors in South Africa. Our database represents 72.8% white, 10.2% coloured, 10.1% black African and 6.8% Indian/Asian donors (self-identified, using official South African categories). Based on 5-locus haplotype frequency calculations of random 1,000 donors per ethnicity, we calculated probabilities for patient-donor matches within each of these ethnic groups.

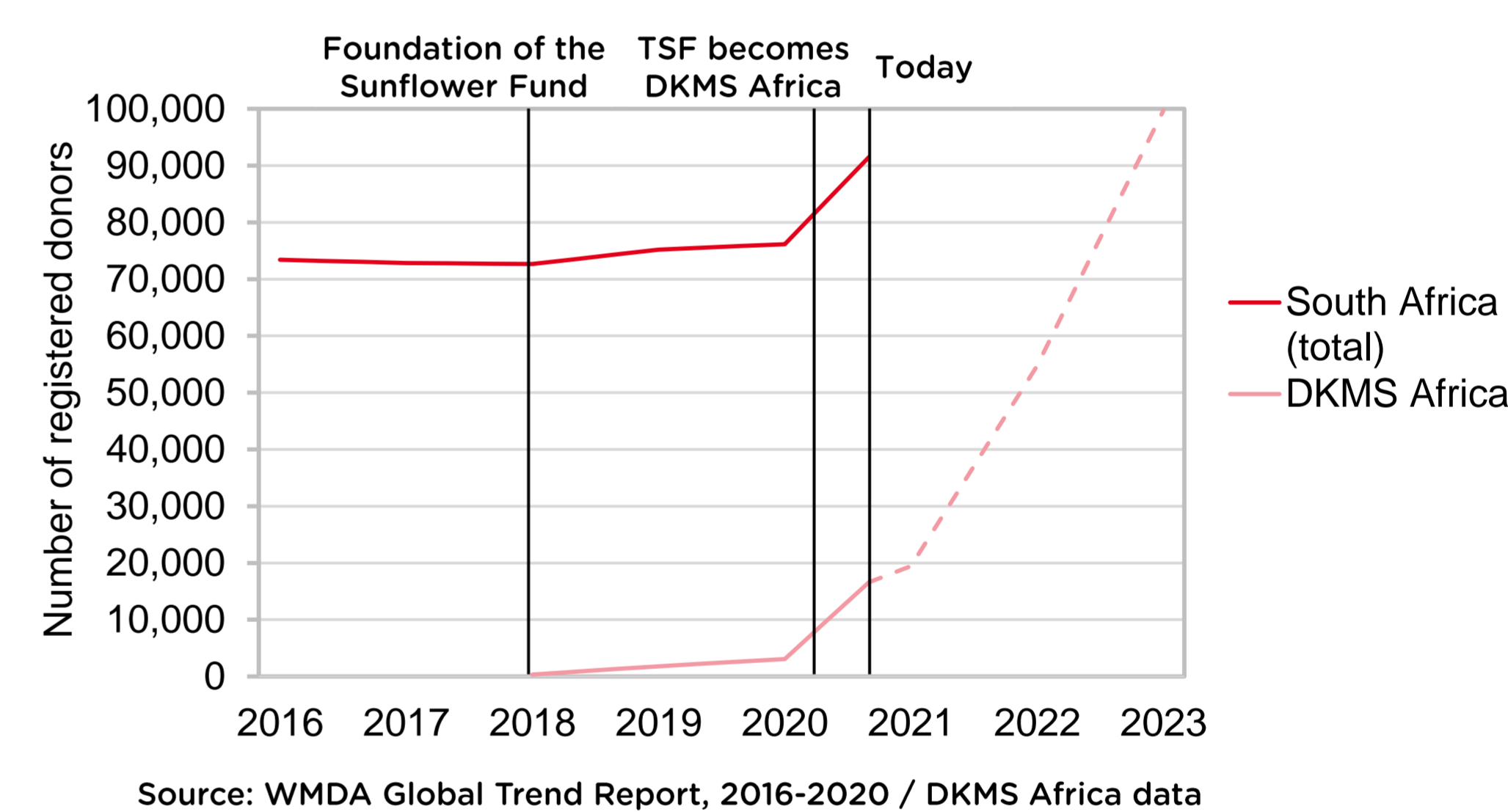


The figure to the left shows that the best chances to find a match are calculated for whites, then India/Asian, while black African and coloured ethnicity have similar low matching probabilities due to highest HLA diversity. Only with more than one Million donors, a satisfiable probability to find a match is reached. The inset points out the limitation of our analysis: a sample size of 1,000 donors underestimates the ethnic diversity, consequently, matching probabilities are overestimated.

Considering a patient population composed like the ethnic diversity in South Africa, our calculations show: today the donor pool of DKMS Africa yields a matching probability of 6.3%. By adding another 100,000 donors with a ethnic composition as today in database, we can reach 17.5% matching probability. Whereas, when we optimize our donor recruitment to reflect South Africa's ethnic composition, 30.6% matching probability could be reached.

## OUR RECRUITMENT STRATEGY

Our main donor recruitment objective is to massively increase the number of registered donors in South Africa in the next years. The figure below displays the South African trend in donor recruitment in the past years and our plans at DKMS Africa in 2022 and 2033.



To increase the diversity and availability of donors in our database, we plan the following:

- Increasing our media positioning, focused on local media in communities - this will not only support education and increased donor numbers - but with the targeted focus - improve the diversity of recruited donors.
- Build a strong donor commitment after registration. This will increase the likelihood of a donor, once identified, to complete the donation process and save a life.

## CONCLUSION

In conclusion, to reach a satisfactory donor coverage for patients in South Africa, millions of donors must be recruited with a majority being black African. To achieve this, we optimize our donor recruitment strategy and invest heavily in new donors. Further, DKMS offers processes and funding programs to give more patients a second chance at life. Contact us to learn more about our activity!

**DKMS**  
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