

Demographics Matter: Variation in Donor Availability during Confirmatory Typing

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Background

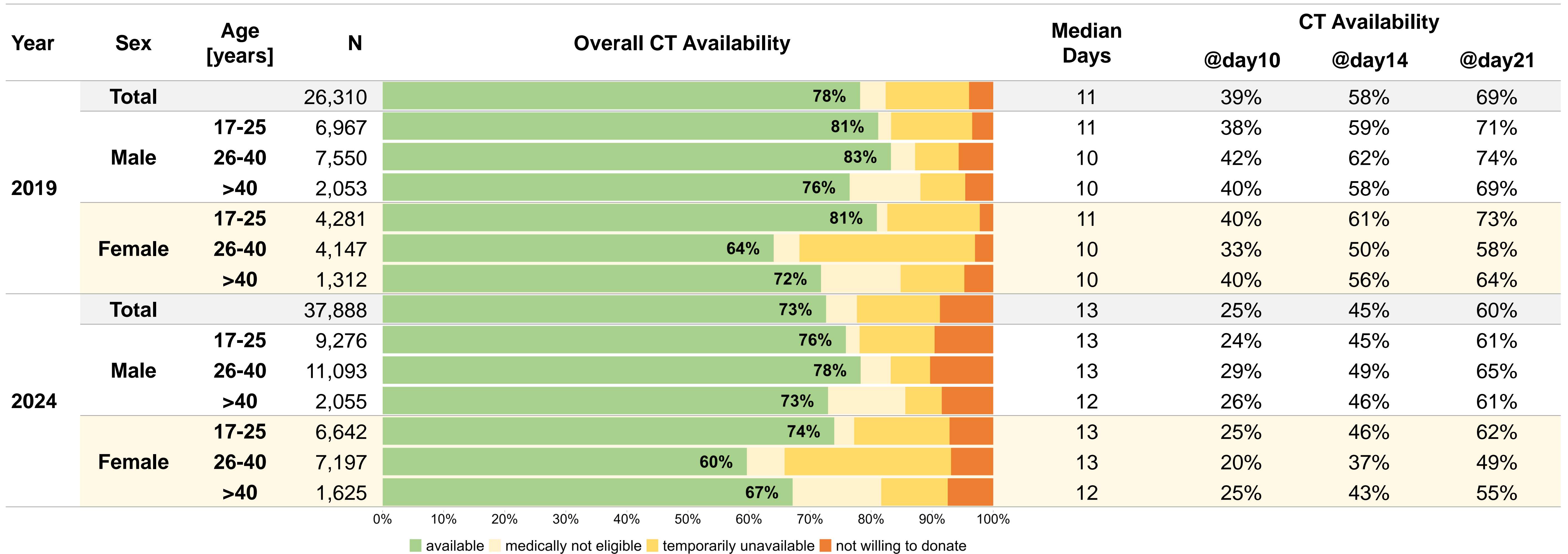
- The availability of stem cell donors is essential to ensure that patients with an urgent need for hematopoietic cell transplantation receive a graft in time.
- Confirmatory typing (CT) entails the verification of HLA compatibility, health assessment and notification of exclusion times for stem cell donation.
- Donor selection depends on donor availability.

Methods

- We analysed donor availability for CT requests initiated for donors registered with DKMS Germany, comparing two time periods.
- A sex- and age-stratified analysis included all first CT requests in 2019 and 2024.
- CT availability was defined as donors' expressed willingness to donate and medical eligibility.
- Requests cancelled by the TC were excluded due to lack of information on donor availability.
- CT duration was defined as the days between CT request and completion of the health assessment, including review of Health History Questionnaire and infectious diseases marker results.
- The success rates were analysed using logistic regression.
- The CT duration was evaluated using cumulative incidence functions.

Results

Donor characteristics	2019	2024	
No. CT requests	27,530	39,995	
Cancellations by TC	1,220 (4%)	2,107 (5%)	
Donor age [years], median (IQR, Range)	27 [22-34, 18-60]	27 [23-33, 17-62]	p=0.5
Proportion of male donors	63%	59%	p<0.001

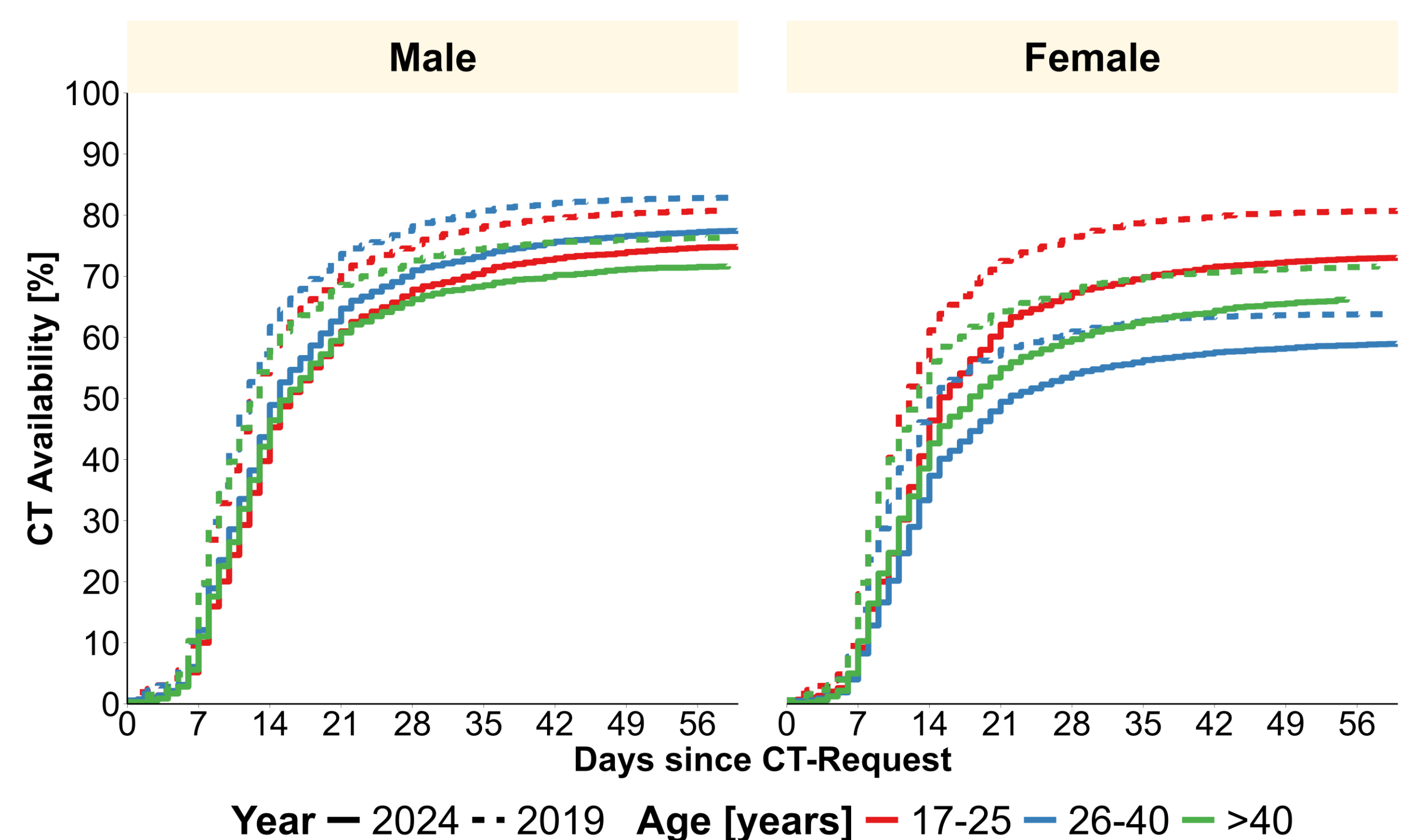


2019 vs. 2024

- CT availability decreased from 78% in 2019 to 73% in 2024.
- Decline primarily due to unwillingness to donate (4% in 2019 vs 9% in 2024).
- Median duration of successful CT requests was 11 days in 2019 and 13 days in 2024 (p<0.001).
- Donor status was determined for 80% of CT requests by day 18 in 2019 and by day 22 in 2024.

Sex and Age

- Lowest availability (60% in 2024) among female donors aged 26 to 40. A potential primary cause is a recent, current or planned pregnancy.
- High availability (78% in 2024) among men aged 17 to 40.
- Medical ineligibility increases with age.



Conclusion

- The differences in donor availability by age and sex may be considered during donor search.
- Strengthening communication between donor registries and TCs could facilitate the timely initiation of additional donor requests at CT level.
- The observed decline in donor availability between 2019 and 2024 suggests a need for more personalized and targeted donor communication.
- To better understand donation behaviour, influenced by a complex combination of individual motivations, socioeconomic factors, and situational circumstances, further analyses are required.

