

To be or not to be a sperm donor: global factors affecting sperm donation in the 21st century

Mina Mincheva ¹, Juan J. Fraire-Zamora ², Kashish Sharma ³, George Liperis ^{4,5}, Omar F. Ammar ^{6,7}, Jackson Kirkman-Brown ^{8,9}, Dorte L. Egeberg¹⁰, Mariana Veloso Martins^{11,12}, Lucy Frith ¹³, and Julia Uraji ^{14,*}

¹Independent Researcher, London, UK

²EUGIN Group, Barcelona, Spain

³HealthPlus Fertility Center, HealthPlus Network of Specialty Centers, Abu Dhabi, United Arab Emirates

⁴Westmead Fertility Centre, Institute of Reproductive Medicine, University of Sydney, Westmead, NSW, Australia

⁵Embryorigin Fertility Centre, Larnaca, Cyprus

⁶IVF Department, Ar-Razzi Hospital, Ramadi, Iraq

⁷Department of Obstetrics and Gynaecology, College of Medicine, University of Anbar, Ramadi, Iraq

⁸Centre for Human Reproductive Science, The University of Birmingham, Birmingham, UK

⁹Fertility Centre, Birmingham Women's & Children's NHS FT, Birmingham, UK

¹⁰European Sperm Bank, Copenhagen, Denmark

¹¹Faculty of Psychology and Education Sciences, University of Porto, Porto, Portugal

¹²Centre for Psychology, University of Porto, Porto, Portugal

¹³Department of Law, Centre for Social Ethics and Policy, University of Manchester, Manchester, UK


¹⁴IVF Laboratory, Kinderwunsch Valentinschhof, Hamburg, Germany


*Correspondence address. IVF Laboratory, Kinderwunsch Valentinschhof, Caffamacherreihe 8, 20355 Hamburg, Germany. E-mail: julia.uraji@gmail.com

 <https://orcid.org/0000-0002-1441-4074>


GRAPHICAL ABSTRACT

Pacey et al. (2023) showed that only 5.16% of sperm donor applicants in Denmark & the USA eventually became donors, with higher recruitment rates in Denmark and most losses due to withdrawal or non-response. With critical developments in technological, societal and regulatory aspects, May 2024's ESHRE Journal Club discussed several facets of sperm donor recruitment.




Cultural and Regulatory Differences 


Sperm donation laws and attitudes vary widely across the globe, reflecting diverse cultural and regulatory landscapes.

Acceptance Rates 


Recruitment success rates vary greatly, with some countries achieving higher rates than others due to factors like legislation and societal attitudes.

Historical Perspective 

From unregulated, undocumented sperm donation to donor registries, genetic screening and LGBTQ+/single-parent-inclusive regulations, donor conception is a highly dynamic topic.

Medical and Non-Medical Criteria 

Donors must undergo rigorous medical and non-medical assessments to ensure the safety and health of future offspring. These may be regulated or recommended by national and transnational bodies and authorities.

Anonymity and Open Identity 

The growing trend towards open identity policies in sperm donation fosters transparency and connection between donors and conceived offspring. Growing popularity of at-home DNA tests nullify "promises" of donor or donor-sibling anonymity, regardless of the status quo at time of donation.

Sperm donation: a global perspective.

Keywords: sperm donation / sperm / andrology / ethics / donor conception / cryopreservation / psychology

Received: January 23, 2025. Editorial decision: March 20, 2025.

© The Author(s) 2025. Published by Oxford University Press on behalf of European Society of Human Reproduction and Embryology. All rights reserved. For commercial re-use, please contact reprints@oup.com for reprints and translation rights for reprints. All other permissions can be obtained through our RightsLink service via the Permissions link on the article page on our site—for further information please contact journals.permissions@oup.com.

Introduction

Nowadays, donated sperm is used in a variety of different fertility patient cases—from male factor infertility or genetic disease, to same-sex female couples or solo women. Several factors influence the use of donor sperm, from social factors to regulations and access to sperm donors, and these trends have changed vastly over time. Donor sperm was classically used for male factor infertility, a demand made partially redundant by technological developments such as ICSI (Palermo *et al.*, 1992) and ICSI-TESE (Devroey *et al.*, 1995). On the other hand, as diverse family structures, including fertility treatment of same-sex female couples and single women, became more socially and legally recognized in recent decades, demand has risen again. For example, the UK saw a decrease in donor sperm use between 1994 and 2006, but a rapid increase after the Equality Act of 2006 (Human Fertilisation and Embryology Authority, 2022b); similarly, the USA saw an increase in treatments with donor sperm between 1996 and 2014 (Gerkowicz *et al.*, 2018). A recent single-centre study from the USA found that approximately half of the donor sperm recipients were same-sex couples, a quarter were single women, and another quarter were heterosexual couples with male factor infertility (Diego *et al.*, 2022). Similar trends may be expected in countries that have only recently legalized ART treatments for single women and same-sex female couples, such as France in 2021 (Agopiantz *et al.*, 2023). These developments necessitate an increase in new donor recruitment both on a country-by-country basis and on a global level. With the demand for sperm donors increasing and often surpassing supply (Pen, 2021), it is important to understand not only factors influencing recipients' use of donor sperm but, possibly more urgently, also those affecting a man's decision to donate their sperm.

A recent publication by Pacey *et al.* addressed this gap in knowledge, investigating the recruitment process of a sperm bank operating in two different countries, Denmark and the USA, and comparing the applicants' outcomes. The study highlighted factors influencing different stages of donor recruitment while keeping application forms and semen analysis requirements identical. It found that overall, only 5.16% of initial applicants (604 of 11 712) were approved to begin donating and 73.5% of these were able to donate samples that were subsequently deemed suitable for release. The leading reason for candidate donor loss was applicants' withdrawal (particularly before initial semen analysis or when asked to fill out the medical questionnaire) or failure to respond to follow-up correspondence from the sperm bank (combined ~55%), followed by rejection due to health issue or failure of a genetic test (17.4%), not meeting eligibility criteria (11.7%) and poor semen quality (11.2%). While many trends were similar between both countries, Denmark generally had higher final acceptance rates (6.53% vs 1.03% in the USA). The authors also differentiated between donors willing to release their identity (ID release) and those who requested anonymity (non-ID release) (Pacey *et al.*, 2023).

The May 2024 edition of the ESHRE Journal Club discussed these findings within the context of global differences in sperm donation and donor recruitment, such as social factors and regulation. The discussion expanded to include psychological, ethical, and historical perspectives regarding sperm donation.

An international perspective: regulatory and social factors affecting sperm donor recruitment

The discrepancy in recruitment success despite using identical recruitment and screening processes—the same application

forms, criteria, and associated processes—in the two Western countries reported by Pacey *et al.* (2023) highlights the complexity underlying public and professional perceptions regarding sperm donation. Countries can differ in several aspects regarding legal, financial, social, ethical, and religious factors which may have influenced donor recruitment; understanding these factors and how they can influence donation may help us shape donor recruitment in the future.

Legality of sperm donation and anonymity

Countries may choose to completely ban sperm donation, while others only offer recommendations or guidelines to sperm banks and fertility clinics (Isley *et al.*, 2024). Social and cultural factors that are likely to influence potential sperm donors' decisions are harder to directly control. The interplay of these factors and national regulations can lead to a large variation of recruitment success by country; studies from the last three decades have reported recruitment rates (from initial contact to becoming a donor) ranging from 3.6% in Northeast England (Paul *et al.*, 2006), 14.8% in Nigeria (Akinrinola *et al.*, 2003), 23.3% in China (Liu *et al.*, 2021), and up to 32% in the USA (Schroeder-Jenkins and Rothmann, 1989). However, it should be noted that such studies are rare and not well-standardized in their methods or inclusion criteria. Interestingly, the recruitment success of only 1.03% in the USA reported by Pacey *et al.* is in stark contrast to the 32% reported in 1989 by a different USA-based sperm bank (Schroeder-Jenkins and Rothmann, 1989). Whether this difference may be due to a specific period in time, and/or confounding factors related to applicant selection criteria and sperm bank protocols, it highlights the complexities of both donor recruitment and challenges of how to quantify and study global trends.

To analyse which factors may influence donor recruitment, it is critical to consider the perspective of those who choose to donate their gametes. Donors may be motivated by altruism, compensation, and/or their 'biological need' of leaving offspring behind (Areias *et al.*, 2022). While the motivation to donate sperm is personal, regulations surrounding gamete donation can influence men's willingness to donate their sperm; donor criteria, compensation, and anonymity are factors that governments and transnational professional bodies can regulate. For example, the EU Tissue & Cells Directive, together with its implementation Directives, set out rules covering several factors regarding sperm donation. These include serological tests required for recipient safety, genetic tests depending on ethnicity, selection criteria, and counselling about the psychological implications of being a donor (European Commission, 2004; European Commission, 2006).

Anonymity between donors, recipients, and children, also known as non-ID-release, is currently regulated on a national level in many countries (Gong *et al.*, 2009; Areias *et al.*, 2022; International Federation of Fertility Societies' Surveillance (IFFS), 2022). While a growing number of countries are withdrawing options for donor anonymity in recent years, it is not yet the global norm to provide identifying information to offspring (International Federation of Fertility Societies' Surveillance (IFFS), 2022). The fact that the recent spread of direct-to-consumer DNA testing, discussed later in this report, has not yet influenced regulations worldwide is likely a reflection of the socio-cultural, ethical, and religious complexities that influence public and professional opinions worldwide. Interestingly, how anonymity, or lack of it, influences the decision to donate sperm is not a simple linear correlation. Pacey *et al.* (2023) showed that throughout the application process, several donors changed their minds about anonymity in both directions—but with more

changing their minds to release their identity than changing from ID-release to non-ID release.

LGBTQ+ community and sperm donation

Another example of how regulations affect sperm donation is the case of men in same-sex relationships: depending on the accessibility of surrogacy or legal frameworks for alternative family models, men in same-sex relationships (and single men) currently have limited possibilities of conceiving their own biological children. As such, sperm donation may be an avenue for those who wish to contribute biologically to the next generation while also helping others, in particular other LGBTQ+ families, build their families. Furthermore, gay and bisexual men are more likely to be open to releasing their identity with recipients and children (Freeman et al., 2016). However, as was the case with blood donors until just 2023 (U.S. Food & Drug Administration, 2023), the USA's Food and Drug Administration (FDA) currently bans men who have had sex with other men in the last 5 years from donating sperm. With evidence suggesting that this restriction is outdated and does not increase recipient safety (Greenwald et al., 2016), the FDA may be lifting this ban soon (Whyte and Marcus, 2024). Similarly, in Canada, men who have sex with men were banned from donating sperm until 2020, and still now cannot donate sperm if they have been sexually active in the last 3 months. Such bans are not universal—countries such as the UK and Denmark explicitly allow men who have sex with men to donate sperm—but where present, they likely have a significant impact on the demographics of sperm donor applicants in affected countries while discriminating on the basis of sexuality and type of relationship.

Social and cultural factors influencing sperm donation

Differing cultural norms regarding donor conception, diverse family structures, or even masturbation may create a barrier in recruiting donors from certain, often already minoritized, ethnic groups. Critically, sperm banks must improve recruitment strategies to diversify their donor pool and to ensure all recipients have access to a suitable sperm donor according to their ethnicity (or partner's ethnicity), medical requirements, and other physical characteristics (Hobbs et al., 2024).

Indeed, sperm banks can take matters into their own hands and have a direct impact on who applies as a donor. Factors such as marketing, accessibility, and language surrounding the application process can affect who applies to become a sperm donor—and how likely they are to drop out during the process. The recruitment strategies used by Pacey et al., (2023), which were consistent in Denmark and the USA, led to 54.91% of donors who had initially filled out an application form dropping out or not responding to subsequent communication from the sperm bank (48.67% in Denmark and 61.19% in the USA). A high drop-out rate prior to donation is not necessarily a sign of poor practice on the sperm bank's side; with delicate and important life decisions such as gamete donation, it is better for potential donors to change their minds prior to donation than after their samples have been used for treatments. Indeed, donation programmes should be founded on the philosophy of voluntary and altruistic donations, solidarity between donor and recipient, and informed consent on all sides, to avoid regret or a reversal of consent at a later stage, i.e. once a donor has been chosen by recipients but samples not yet used. Thus, sperm banks must attempt to seek fully informed consent from donors while also paying attention to diversity in their donor pool.

Ideally, donor conception will become less of a 'taboo' subject in the near future, potentially increasing both the availability and diversity of sperm donors and the safety of sperm donation. With donors being able to discuss their plans to donate sperm with their family, they may be able to obtain more information about their medical history while also hopefully avoiding the highly unlikely, but not impossible, event of their sperm being used to treat a relative.

Medical and non-medical criteria for sperm donor selection

Sperm quality

Leaving aside the regulatory and social factors that have influenced potential sperm donors' decisions to take the route of gamete donation, sperm banks have to select sperm donors according to national governmental regulations. Sperm donors must have good sperm parameters post-thawing to enable all possible treatment options for recipients. However, cut-offs may differ between sperm banks; Pacey et al. (2023) used a cut-off of 5 million motile sperm per ml in the post-thaw sample. Another study found that IUI success rates plateau at ~16.7% clinical pregnancy rate when an insemination dose of 9 million total motile sperm or above is used, with insemination doses above 2 million total motile sperm being sufficient to reach clinical pregnancy rates above 10% (Muthigi et al., 2021). Sperm banks and fertility clinics should aim to standardize cut-off values for frozen-thawed sperm samples when using donor samples to ensure transparency and consistency.

Beyond sperm count and motility pre- and post-thaw, there is currently no general consensus on which sperm diagnostic and functional tests should be done to screen sperm donors. Additional diagnostics may include detailed morphology assays, mixed antiglobulin reaction (antibody binding), DNA fragmentation tests, or novel assays such as the CatSper function test; while these are not currently considered necessary for routine semen analysis, they may be useful in certain circumstances for diagnostic or research purposes (World Health Organisation, 2021). Questionnaires are frequently used to select donors according to age and lifestyle factors, though often an unfavourable or 'unhealthy' lifestyle or advanced age may already be reflected in poor sperm quality. For example, it has been suggested that sperm quality decreases and *de novo* mutations increase substantially at around ages 35–45 years, which many sperm banks use as an upper limit (Ghuman et al., 2016).

Medical history and genetic testing

Critically, any family or personal history of transmittable or genetic disease should be reported by donors and reviewed by medical professionals to ensure safety of recipients and donor-conceived children; this may even be enforced by regulations such as the EU Tissues & Cells Directive. As mentioned previously, before samples are released for use, absence of certain infectious diseases must be confirmed through serological and/or nucleic-acid-testing (NAT)-based screening; depending on the exact regulations, this may include a quarantine period and repeat testing. Both classical repeat testing and the 'Danish protocol', using NAT tests of each donor every 90 days, have been described and evaluated by the European Centre for Disease Prevention and Control (European Centre for Disease Prevention and Control, 2018). With any testing protocol, recipient safety must be the priority; however, it is critical to note that long quarantine periods may result in time delays, increased logistical efforts, and higher costs for sperm banks, donors and recipients alike.

Other exclusion criteria, as with other factors surrounding donor recruitment described previously, vary greatly between guidelines by countries and non-governmental bodies (e.g. [European Commission, 2006](#); [Clarke et al., 2021](#); reviewed by [Pennings, 2021](#)). While karyotyping is standard in many sperm banks and any karyotype other than 46XY should be a clear exclusion criterion for sperm donors ([Huang et al., 2023](#)), there is no clear consensus regarding gene carrier screening of donors. Mutations of the *CFTR* gene are often tested regardless of ethnic background, and some guidelines recommend additional testing based on ethnicity of the donor. Examples include Tay-Sachs in Ashkenazi Jewish donors and sickle-cell-related mutations in certain Asian, African, and South European donors ([European Commission, 2006](#); [Peysner et al., 2019](#)). Irrespective of ethnic background, an estimated 2% of donors may be a carrier of a common pathogenic mutation without any clinical manifestations ([Isley et al., 2023](#)). The recent decrease in costs of genetic carrier screening has led some sperm banks and clinics to offer ‘genetic matching’, in which recipients and donors are each tested using a gene panel to exclude both being carriers of the same recessive mutations. However, guidelines are unclear whether or not such screening is a moral obligation of the sperm bank; for example, if proven carrier status of a known recessive pathological mutation should be an exclusion criterion for sperm donors, or if informed consent and screening of the recipient are sufficient to allow further use on a case-by-case basis. Furthermore, sperm banks should proactively have a plan for if and how donors are informed about their carrier status, should any pathological mutations be found ([Mertes et al., 2018](#)), as some donors may prefer not to know.

While sufficient screening of sperm donors is critical to minimize the health risks to recipients and offspring alike, over-regulation or over-screening of sperm donors may lead to reduced accessibility, lower diversity of donors, higher workload for sperm banks and clinics, and increased costs for recipients. Indeed, some argue that too strict medical criteria in times of high demand for sperm donors will hinder the maintenance of an adequate sperm donor pool ([Pennings, 2021](#)). Recipients should also be made aware that even with genetic screening, there is no guarantee of a low-risk pregnancy or of a ‘perfectly’ healthy child. Rare recessive mutations, *de novo* mutations, genetic abnormalities, or non-genetic health risks are not excluded by genetic carrier screening of the parents. Finding a balance between mandatory basic testing and facilitating precise screening depending on the recipients’ and donors’ medical history will be key for the future of donor conception.

Non-medical criteria: supply and demand?

Aside from medically relevant criteria, sperm banks may choose to prioritize donors with characteristics that are in ‘high demand’ with recipients, whether these are physical attributes such as eye and hair colour, ethnicity, or personal details including education and hobbies. While the ethical basis of such selection criteria is debated, sperm banks as private entities in a free market are entitled to prioritize their time and resources according to the demands of their clients. Furthermore, recipients may argue that they are entitled to some personal information about the donors (assuming donors are willing to share it) given that their children may inherit non-medical traits from donors. However, some countries, such as Finland or Portugal, do not permit recipients to select donors according to any non-medical factors, while others, such as Denmark and the USA, allow sperm banks to offer extensive online catalogues with (childhood) photos, handwritten notes, and other personal details such as education,

profession, and hobbies of each donor. Critically, sperm banks should consider how they verify non-medical information provided by donors, or how to communicate this information in the absence of such verification ([Pennings, 2024](#)). Differences in regulations regarding how much can and should be shared with recipients may affect the willingness of men in different countries to donate, while also affecting accessibility and information provision to recipients and offspring.

The importance of psychological counselling of potential donors

The decision to become a sperm donor is one that undoubtedly has long-term consequences. While governmental regulations should ensure that donors face no legal or financial burdens, the consequence of sperm donation is usually that a higher number of genetic offspring are born than average per man. Understandably, this can influence a donor’s own family planning, possibly affect (future) partners and children emotionally, and, depending on identity release regulations and/or genetic testing availability, may be followed up by contact requests decades after choosing to become a donor. In some cases, previously undiagnosed conditions may become apparent during medical screening or later, if children with health conditions are born and these are traced back to the donor’s genetics. Not all of these are necessarily negative consequences, but many sperm donors are young men who may not fully grasp the weight of these long-term effects. As such, donors should be psychologically counselled throughout the application process (and beyond), to ensure they have understood all possible implications of their choices ([Visser et al., 2016](#)).

Indeed, the EU Tissues & Cells directive includes a point that donors should be counselled on psychological consequences of being a donor ([European Commission, 2006](#)). Following professional body guidance such as the ‘Good practice recommendations for information provision for those involved in reproductive donation’ ([ESHRE Working Group on Reproductive Donation et al., 2022](#)) developed by the ESHRE Working Group on Reproductive Donation can help achieve that goal. Some sperm banks include psychological evaluations and counselling in their recruitment protocols. These consultations should be carried out by trained and qualified professionals, who are not only aware of all regulations regarding sperm donations but also trained in psychology. This way, a benefit of this consultation can be that a qualified psychologist or doctor will be able to screen donors for signs of any major psychiatric issues and ensure they have understood all consequences of their donation.

Clear communication about legal regulations and obligations is crucial, ensuring donors understand their rights and the rights of the future donor-conceived people ([ESHRE Working Group on Reproductive Donation et al., 2022](#)). This includes donor quota and possible consequences, as well as duration of storage and possible age difference to donor-conceived people. Donors must also keep in mind that legislation may change (sometimes retrospectively) and be informed about the chance of their gametes to travel abroad where other legislations can apply. Furthermore, donors should be encouraged to reflect on their motivations, balancing altruistic and financial reasons ([Bracewell-Milnes et al., 2016](#); [Thijssen et al., 2017](#)). Anonymity options and their long-term implications must be thoroughly discussed, highlighting potential future contact with donor-conceived individuals and the emotional impact thereof ([Hertz et al., 2013](#)). As discussed in more detail later in this report, direct-to-consumer DNA testing

conducted by donors, donor-conceived people, or any unknowing relatives may invalidate any promises of anonymity; as such, it is of critical importance that candidates are made aware of these implications. Donors should also consider the effect of their donation on their own family dynamics and relationships (Daniels, 2007). Finally, discussions should include the rights and needs of donor-conceived offspring, emphasizing the importance of access to genetic and medical histories and guidance on disclosure practices (ESHRE Working Group on Reproductive Donation et al., 2022).

Comprehensive counselling ensures donors are well-informed and prepared for the psychological complexities of sperm donation. However, there are several potential drawbacks to ensuring all donors are fully informed and counselled: small sperm banks may not have staff qualified in psychological counselling; a lack of regulation in this area leaves room for discrepancies between sperm banks or even different employees at the same bank; regulations and technologies can change over time, making extended counselling potentially necessary years after donations have taken place. For this reason, professional bodies such as the ESHRE Working Group on Reproductive Donation should continue to provide updated recommendations in the absence of governmental regulations, and sperm banks should be encouraged to follow them.

The past, present, and future of donor conception: how genetic testing could eliminate anonymity in donor conception

Reportedly, the first successful artificial insemination using sperm from a 'donor' took place in 1884, without informed consent from recipient or partner (Dominus, 2019). Throughout the first half of the 20th century, doctors would perform insemination using fresh semen samples—either their own or their students'—with little to no official documentation and each donor potentially fathering dozens of children. The only goal was to achieve pregnancy in those who were not conceiving naturally, with recipient safety, informed consent, legal frameworks, or ethical limits not playing any significant role. It was not until recent decades that regulations on sperm donation tightened and awareness around the topic of donor conception and its long-term effects on donors, recipients, and offspring increased (Dominus, 2019). This dramatic shift from completely informal and unregulated practices to commercial sperm banks, national donor registries, and even children's books specific for donor-conceived children has run parallel to advances in reproductive and other relevant technologies, from cryopreservation to genetic testing.

As there is currently no known biological time limit for sperm cryopreservation (Stigliani et al., 2024), it is important to note that the age of the donor at the time of sample production may be much younger than when children are born. Few regulations exist regarding how long samples can be stored and used. A notable exception is the UK, which previously limited storage of gametes and embryos to 10 years, but recently increased this to 55 years, providing patients or donors re-consent every 10 years (Human Fertilisation and Embryology Authority, 2022a). Some countries even allow the use of samples after the death of the donor (Hodson and Parker, 2020), but sperm banks should consider implementing storage time limits or donor age limits at the time of use of samples. This could help to avoid large inter-generational gaps and possible negative consequences for donor-conceived children if, in identity release systems, their donor is

no longer living when they would have wanted contact—whether for personal or medical reasons.

With many countries establishing donor registries, the regulatory landscape concerning gamete donor anonymity is changing; while Denmark and the USA are among the countries that still give donors a choice to stay anonymous, Sweden was the first country to ban sperm donor anonymity in 1985, with several (mostly European) countries following suit in recent years, guaranteeing that donor-conceived offspring have a right to know their biological origin (International Federation of Fertility Societies' Surveillance (IFFS), 2022). This shift may not only influence the number of applicants but possibly more importantly the motivations and awareness of those who apply to become sperm donors. In either case, legislative enforcement cannot guarantee anonymity to donors, recipients, or donor-conceived children in the current age of at-home genetic testing.

Direct-to-consumer DNA tests, social media, and awareness groups have made donor conception more open and traceable, regardless of agreements or promises made years or decades ago. Through genealogy tracing made possible by relatively affordable and accessible providers, donor-conceived children can find their half-siblings and—depending on whether the donor or their relatives have taken such a test—possibly their genetic father, and vice-versa. Critically, uninformed donors or offspring, as well as unknowing relatives of either, may not be aware of the consequences these tests could have on their identity and family when they choose to take them. Therefore, promises of anonymity in donor conception have been made largely redundant (Wodoslawsky et al., 2023; Gilman et al., 2024), and donors should be informed as such. However, these changes do not only affect future donors but also those who donated at a time when the status-quo or even the 'promise' to donors and recipients alike was anonymity. Additionally, past and present recipients of donor-ART must be counselled that if they are not planning to inform their children of the methods of their conception, regardless of matching physical characteristics and blood groups, they may find out one day regardless. Indeed, these developments have prompted important calls for regulatory change in the UK (Human Fertilisation and Embryology Authority, 2023) and likely fuelled the global trend away from donor anonymity (International Federation of Fertility Societies' Surveillance (IFFS), 2022).

Thankfully, there is ever-increasing research and awareness about the psychological impacts on donor-conceived children upon finding out their biological origin, and studies substantiate that decreasing secrecy and providing age-appropriate information from an early age is the best approach (Ilioi et al., 2017; Zadeh et al., 2018; Talbot et al., 2024). Thus, sperm banks and national registries should aim not only to save contact information of donors, recipients, and children but also to continuously pay attention to new medical information on either side. While children who have contact with both biological parents are usually informed about new medical diagnoses, this may not be the case with donor-conceived people and donors.

The future of donor conception must include serious considerations for family unit limits and an understanding of the complex family dynamics that are being created. As such, limits on children or families per donor should not only be applied per sperm bank or country but internationally per donor (Janssens et al., 2015). Ideally, national registries could join forces to prevent cases such as that of the Dutch case of a sperm donor of hundreds of children (Deutsche Welle, 2023), though data protection and privacy is a critical consideration in such pursuits. Increased openness and less secrecy around donor conception may lead to

a cultural shift in acceptance and understanding (Thorn et al., 2008), while allowing better psychological support systems for donors and donor-conceived people alike.

In conclusion, the professionals involved in sperm donation and fertility treatments must keep up with new advances in technology and the research surrounding fertility treatments. Evidence-based regulations must be standardized on a global scale in regards to identity release, offspring limits, compensation, and removing restrictions regarding sexuality. A critical consideration is that if sperm donation is over-regulated, it will still take place, but away from the oversight of national bodies and sperm banks despite potential health and legal parenthood implications (Taylor et al., 2022). The aim of regulations should not be to limit access to fertility treatments, but rather to ensure safety, informed consent, and ethical practices on all fronts. Importantly, social, cultural, ethical, and religious factors will influence public and professional opinions regarding donor conception, and scientific bodies must aim to provide a consensus about best practices.

Data availability

No datasets were generated or analysed in the current manuscript.

Acknowledgements

The authors would like to thank all the participants of ESHRE Journal Club on Twitter for their contribution to this discussion.

Authors' roles

M.M., J.J.F.-Z., K.S., G.L., O.F.A., and J.U. conceptualized and moderated the discussion; M.M. organized and led the discussion; J. K.-B., D.L.E., M.V.M., and L.F. contributed intellectually to the discussion as experts; O.F.A. and J.U. prepared the graphical abstract; all authors provided outlines for the manuscript; J.U. drafted the manuscript. All authors provided critical revision to the graphical abstract and manuscript and approved the final version.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflicts of interest

All authors, with the exception of D.L.E., declare no conflict of interest. D.L.E. has been and is currently employed by European Sperm Bank, who offer sperm donor samples for-profit, since 1 May 2018. This employment has given her valuable insights into the field of donor conception, but does not affect her opinions reflected during the Journal Club or in this manuscript. She also holds stock options with European Sperm Bank APS.

References

Agopianz M, Dap M, Martin E, Meyer L, Urwicz A, Mougél R, Malmanche H. Assisted reproductive technology in France: the reproductive rights of LGBT people. *J Gynecol Obstet Hum Reprod* 2023;**52**:102690.

Akinrinola OA, Melie NA, Ajayi RA. Poor acceptance rate for semen donors to a private cryobank in Nigeria. *Afr J Reprod Health* 2003;**7**:12–16.

Areias J, Gato J, Moura-Ramos M. Motivations and attitudes of men towards sperm donation: whom to donate and why? *Sex Res Soc Policy* 2022;**19**:147–158.

Bracewell-Milnes T, Saso S, Bora S, Ismail AM, Al-Memmar M, Hamed AH, Abdalla H, Thum MY. Investigating psychosocial attitudes, motivations and experiences of oocyte donors, recipients and egg sharers: a systematic review. *Hum Reprod Update* 2016;**22**:450–465.

Clarke H, Harrison S, Perez MJ, Kirkman-Brown J. UK guidelines for the medical and laboratory procurement and use of sperm, oocyte and embryo donors (2019). *Hum Fertil* 2021;**24**:3–13.

Daniels K. Donor gametes: anonymous or identified? *Best Pract Res Clin Obstet Gynaecol* 2007;**21**:113–128.

Devroey P, Liu J, Nagy Z, Goossens A, Tournaye H, Camus M, Van Steirteghem A, Silber S. Pregnancies after testicular sperm extraction and intracytoplasmic sperm injection in non-obstructive azoospermia. *Hum Reprod* 1995;**10**:1457–1460.

Diego D, Medline A, Shandley LM, Kawwass JF, Hipp HS. Donor sperm recipients: fertility treatments, trends, and pregnancy outcomes. *J Assist Reprod Genet* 2022;**39**:2303–2310.

Dominus S. Sperm donors can't stay secret anymore. Here's what that means. *The New York Times Magazine*. 2019. <https://www.nytimes.com/2019/06/26/magazine/sperm-donor-questions.html> (30 January 2025, date last accessed).

Dutch court orders sperm donor to stop after 550 children. *Deutsche Welle*. 2023. <https://www.dw.com/en/dutch-court-orders-sperm-donor-to-stop-after-550-children/a-65466405> (15 January 2025, date last accessed).

ESHRE Working Group on Reproductive Donation; Kirkman-Brown J, Calhaz-Jorge C, Dancet E a F, Lundin K, Martins M, Tilleman K, Thorn P, Vermeulen N, Frith L. Good practice recommendations for information provision for those involved in reproductive donation. *Hum Reprod Open* 2022;**2022**:hoac001.

European Centre for Disease Prevention and Control. *Laboratory Testing of Non-Partner Sperm Donors—An Assessment of Potential Risks Involved in Changing the Current Testing Protocols for HIV, Hepatitis B and Hepatitis C*. Stockholm: ECDC, 2018.

European Commission. Directive 2004/23/EC of the European Parliament and of the Council of 31 March 2004 on setting standards of quality and safety for the donation, procurement, testing, processing, preservation, storage and distribution of human tissues and cells. *Off J Eur Union* 2004;**102**:48–58. <http://data.europa.eu/eli/dir/2004/23/oj>

European Commission. Commission Directive 2006/17/EC of 8 February 2006 implementing Directive 2004/23/EC of the European Parliament and of the Council as regards certain technical requirements for the donation, procurement and testing of human tissues and cells. *Off J Eur Union* 2006;**38**:40–52. <http://data.europa.eu/eli/dir/2006/17/oj>

Freeman T, Jadvá V, Tranfield E, Golombok S. Online sperm donation: a survey of the demographic characteristics, motivations, preferences and experiences of sperm donors on a connection website. *Hum Reprod* 2016;**31**:2082–2089.

Gerkowicz SA, Crawford SB, Hipp HS, Boulet SL, Kissin DM, Kawwass JF. Assisted reproductive technology with donor sperm: national trends and perinatal outcomes. *Am J Obstet Gynecol* 2018;**218**:421.e1–421.e10.

Ghuman NK, Mair E, Pearce K, Choudhary M. Does age of the sperm donor influence live birth outcome in assisted reproduction? *Hum Reprod* 2016;**31**:582–590.

- Gilman L, Redhead C, Hudson N, Fox M, Nordqvist P, MacCallum F, Kirkman-Brown J, Frith L. Direct-to-consumer genetic testing and the changing landscape of gamete donor conception: key issues for practitioners and stakeholders. *Reprod BioMedicine Online* 2024;**48**:103421.
- Gong D, Liu Y-L, Zheng Z, Tian Y-F, Li Z. An overview on ethical issues about sperm donation. *Asian J Androl* 2009;**11**:645–652.
- Greenwald SR, Cohan D, Weber S, Salmeen KE. The exclusion of sperm donation on the basis of sexual practices. *Obstet Gynecol* 2016;**127**:1097–1099.
- Hertz R, Nelson MK, Kramer W. Donor conceived offspring conceive of the donor: The relevance of age, awareness, and family form. *Soc Sci Med* 2013;**86**:52–65.
- Hobbs CL, Gadson AK, Sadikman S, Tsai S, Enemufo F, Raker C, Eaton JL. An investigation of racial and ethnic disparities in donor sperm availability in the United States. *Fertil Steril* 2024;**122**:474–481.
- Hodson N, Parker J. The ethical case for non-directed postmortem sperm donation. *J Med Ethics* 2020;**46**:489–492.
- Huang C, Wang Q-L, Wu H-L, Huang Z-H, Zhang X-Z, Zhu W-B. Genetic testing of sperm donors in China: a survey of current practices. *Front Endocrinol* 2023;**14**. <https://doi.org/10.3389/fendo.2023.1230621>
- Human Fertilisation and Embryology Authority. New law comes into force giving greater flexibility for fertility patients. [HFEA.gov.uk](https://www.hfea.gov.uk/about-us/news-and-press-releases/2022/new-law-comes-into-force-giving-greater-flexibility-for-fertility-patients/). 2022a. <https://www.hfea.gov.uk/about-us/news-and-press-releases/2022/new-law-comes-into-force-giving-greater-flexibility-for-fertility-patients/> (2 February 2025, date last accessed).
- Human Fertilisation and Embryology Authority. Trends in egg, sperm and embryo donation 2020. [HFEA.gov.uk](https://www.hfea.gov.uk/about-us/publications/research-and-data/trends-in-egg-sperm-and-embryo-donation-2020/). 2022b. <https://www.hfea.gov.uk/about-us/publications/research-and-data/trends-in-egg-sperm-and-embryo-donation-2020/> (2 February 2025, date last accessed).
- Human Fertilisation and Embryology Authority. Overview of HFEA public consultation on law reform 2023. [HFEA.gov.uk](https://www.hfea.gov.uk/about-us/modernising-the-regulation-of-fertility-treatment-and-research-involving-human-embryos/overview-of-hfea-public-consultation-on-law-reform-2023/). 2023. <https://www.hfea.gov.uk/about-us/modernising-the-regulation-of-fertility-treatment-and-research-involving-human-embryos/overview-of-hfea-public-consultation-on-law-reform-2023/> (29 January 2025, date last accessed).
- Ilioi E, Blake L, Jadva V, Roman G, Golombok S. The role of age of disclosure of biological origins in the psychological wellbeing of adolescents conceived by reproductive donation: a longitudinal study from age 1 to age 14. *J Child Psychol Psychiatry* 2017;**58**:315–324.
- International Federation of Fertility Societies' Surveillance (IFFS). International Federation of Fertility Societies' Surveillance (IFFS) 2022: Global Trends in Reproductive Policy and Practice, 9th edition. *Glob Reprod Health* 2022;**7**:e58.
- Isley L, Callum P, Luque J, Park J, Baldwin K. Management considerations for clinically relevant findings on expanded carrier screening in a sperm donor applicant population. *F&S Rep* 2023;**4**:384–389.
- Isley L, Martin D, Pandolfi E, Di Berardino T, Desai V. International variability in regulatory requirements for sperm donors. *Reprod BioMedicine Online* 2024;**48**:104056.
- Janssens PMW, Thorn P, Castilla JA, Frith L, Crawshaw M, Mochtar M, Bjorndahl L, Kvist U, Kirkman-Brown JC. Evolving minimum standards in responsible international sperm donor offspring quota. *Reprod BioMedicine Online* 2015;**30**:568–580.
- Liu J, Dai Y, Li Y, Yuan E, Wang Q, Guan Y, Lou H. Analysis of the screening results of 24040 potential sperm donors in a human sperm bank in Henan Province, China: a 14-year retrospective cohort study. *Hum Reprod* 2021;**36**:1205–1212.
- Mertes H, Lindheim SR, Pennings G. Ethical quandaries around expanded carrier screening in third-party reproduction. *Fertil Steril* 2018;**109**:190–194.
- Muthigi A, Jahandideh S, Bishop LA, Naeemi FK, Shipley SK, O'Brien JE, Shin PR, Devine K, Tanrikut C. Clarifying the relationship between total motile sperm counts and intrauterine insemination pregnancy rates. *Fertil Steril* 2021;**115**:1454–1460.
- Pacey AA, Pennings G, Mocanu E, Rothmar J, Pinborg A, Adrian SW, Burke C, Skytte A-B. An analysis of the outcome of 11 712 men applying to be sperm donors in Denmark and the USA. *Hum Reprod* 2023;**38**:352–358.
- Palermo G, Joris H, Devroey P, Van Steirteghem AC. Pregnancies after intracytoplasmic injection of single spermatozoon into an oocyte. *Lancet* 1992;**340**:17–18.
- Paul S, Harbottle S, Stewart JA. Recruitment of sperm donors: the Newcastle-upon-Tyne experience 1994–2003. *Hum Reprod* 2006;**21**:150–158.
- Pennings G. Maintaining an adequate sperm donor pool: modifying the medical criteria for sperm donor selection. *J Assist Reprod Genet* 2021;**38**:2559–2562.
- Pennings G. Should a gamete bank verify the non-medical information provided by a donor? *Hum Reprod* 2024;**39**:632–637.
- Peyser A, Singer T, Mullin C, Bristow SL, Gamma A, Onel K, Hershlag A. Comparing ethnicity-based and expanded carrier screening methods at a single fertility center reveals significant differences in carrier rates and carrier couple rates. *Genet Med* 2019;**21**:1400–1406.
- Schroeder-Jenkins M, Rothmann SA. Causes of donor rejection in a sperm banking program. *Fertil Steril* 1989;**51**:903–906.
- Stigliani S, Amaro A, Reggiani F, Maccarini E, Massarotti C, Lambertini M, Anserini P, Scaruffi P. The storage time of cryopreserved human spermatozoa does not affect pathways involved in fertility. *Basic Clin Androl* 2024;**34**:15.
- Talbot C, Hodson N, Rose J, Bewley S. Comparing the psychological outcomes of donor and non-donor conceived people: a systematic review. *BJOG* 2024;**131**:1747–1759.
- Taylor F, Turner-Moore R, Pacey A, Jones GL. Are UK policies and practices for regulated donor insemination forcing women to find unregulated sperm donors online? A perspective on the available evidence. *Front Glob Womens Health* 2022;**3**:644591.
- Thijssen A, Provoost V, Vandormael E, Dhont N, Pennings G, Ombelet W. Motivations and attitudes of candidate sperm donors in Belgium. *Fertil Steril* 2017;**108**:539–547.
- Thorn P, Katzorke T, Daniels K. Semen donors in Germany: a study exploring motivations and attitudes. *Hum Reprod* 2008;**23**:2415–2420.
- U.S. Food & Drug Administration. FDA finalizes move to recommend individual risk assessment to determine eligibility for blood donations. [FDA.gov](https://www.fda.gov/news-events/press-announcements/fda-finalizes-move-recommend-individual-risk-assessment-determine-eligibility-blood-donations). 2023. <https://www.fda.gov/news-events/press-announcements/fda-finalizes-move-recommend-individual-risk-assessment-determine-eligibility-blood-donations> (5 February 2025, date last accessed).
- Visser M, Mochtar MH, De Melker AA, Van Der Veen F, Repping S, Gerrits T. Psychosocial counselling of identifiable sperm donors. *Hum Reprod* 2016;**31**:1066–1074.
- Whyte LE, Marcus DA. FDA to drop ban on sperm donations from gay and bisexual men. *Wall Street J* 2024. <https://www.wsj.com/health/healthcare/fda-sperm-donor-ban-bisexual-gay-men-5e8a0a9d> (14 April 2025, date last accessed).
- Wodoslawsky S, Fatunbi J, Mercier R, Braverman AM. Sperm donor attitudes and experiences with direct-to-consumer genetic testing. *F&S Rep* 2023;**4**:36–42.
- World Health Organisation. *WHO Laboratory Manual for the Examination and Processing of Human Semen*, 6th edn. Geneva: World Health Organization, 2021.
- Zadeh S, Ilioi EC, Jadva V, Golombok S. The perspectives of adolescents conceived using surrogacy, egg or sperm donation. *Hum Reprod* 2018;**33**:1099–1106.

© The Author(s) 2025. Published by Oxford University Press on behalf of European Society of Human Reproduction and Embryology. All rights reserved. For commercial re-use, please contact reprints@oup.com for reprints and translation rights for reprints. All other permissions can be obtained through our RightsLink service via the Permissions link on the article page on our site—for further information please contact journals.permissions@oup.com.
Human Reproduction, 2025, 40, 1234–1240
<https://doi.org/10.1093/humrep/deaf073>
Peer Perspectives