



Research and actions on infertility and Medically Assisted Reproduction: key topics to be considered for funding

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Infertility affects approximately 25 million citizens in Europe¹.

Over the past decades, infertility treatment through Medically Assisted Reproduction (MAR) has evolved fast and has helped many people to become parents. Nevertheless, several gaps in the knowledge on infertility and MAR require further research to ensure evidence-based clinical practice. Moreover, existing knowledge suggests that certain actions may benefit infertile patients or contribute to infertility prevention, but widespread implementation of these actions is lacking. One of the factors precluding research or the implementation of actions to advance the field of MAR is a lack of funding.

This document sets out several key topics related to infertility and MAR that should be considered for inclusion in funding programmes. Funding for research or projects on these topics will contribute to reducing the negative impacts of infertility on the individuals affected, as well as on society as a whole.



01

Deepening knowledge on infertility

It is known that male and female fertility are affected by lifestyle and environmental factors, even though detailed knowledge on these effects (e.g., mechanisms, size of effects) is lacking². Furthermore, there are several conditions related to infertility that require particular attention in the context of infertility prevention and treatment, e.g., premature ovarian insufficiency, endometriosis, and polycystic ovary syndrome (PCOS). For these conditions, evidence-based clinical practice is challenging due to the lack of sufficient data from studies.

→ **Further research is needed to deepen the knowledge on the causes and risk factors of infertility to optimise strategies for infertility prevention. Moreover, more research is needed on the diagnosis and optimal treatment of conditions related to infertility.**

02

Boosting fertility awareness

Fertility awareness describes the level of knowledge and awareness of society and its various subgroups on the human reproduction system and life cycle, as well as the possible threats to reproductive health and the ways to protect it throughout the stages of life³. Delayed parenthood is an important underlying risk factor in infertile couples⁴.

→ **Increasing fertility awareness, especially among young people, is important for the prevention of infertility, which will in turn reduce the burden of infertility and fertility treatments on couples and the societal healthcare costs.**

¹Fertility Europe and ESHRE. 2017. A policy audit on fertility: Analysis of 9 countries. https://fertilityeurope.eu/wp-content/uploads/2018/03/EPAF_FINAL.pdf

²Boedt et al., 2021. Preconception lifestyle advice for people with infertility. *Cochrane Database Syst Rev* 2021; 4(4). <https://doi.org/10.1002/14651858.cd008189.pub3>; Bala et al., 2021. Environment, Lifestyle, and Female Infertility. *Reprod Sci* 28(3). <https://doi.org/10.1007/s43032-020-00279-3>; Hayden et al., 2018. The Role of Lifestyle in Male Infertility: Diet, Physical Activity, and Body Habitus. *Curr Urol Rep* 19(7):56. <https://doi.org/10.1007/s11934-018-0805-0>

³<https://fertilityeurope.eu/fertility-awareness/>

⁴Schmidt et al., 2011. Demographic and medical consequences of the postponement of parenthood. *Hum Reprod Update* 18(1):29-43. <https://doi.org/10.1093/humupd/dmr040>



Optimising the efficacy and safety of MAR treatments

In-vitro fertilisation (IVF) and intracytoplasmic sperm injection (ICSI) are the most widely used treatments for infertility. Based on recent European registry data, the delivery rate after a single embryo transfer cycle is ca. 30%⁵. Although standard treatment consists of multiple embryo transfers, leading to a higher total success rate, a considerable proportion of patients still remain childless after IVF/ICSI treatment. While considered generally safe, IVF and ICSI are associated with known risks for patients, donors and children, such as ovarian hyperstimulation syndrome (OHSS) and multiple pregnancies⁶. Evidence on the safety of infertility treatments, including potential long-term health effects, needs to be continuously updated as new treatments are being implemented.

→ **Further research and development of innovations, as well as guidance for health providers, is needed to improve the efficacy and safety of infertility treatments. Moreover, expanding the evidence on treatment safety is important for the ability to provide patients with full information about the risks of MAR prior to starting treatment.**



Preventing overtreatment in MAR

The despair of couples wanting to become parents and the commercialisation of the MAR sector may facilitate overtreatment. Patients request or are offered treatments whose efficacy, and in some cases even safety, have not been proven or not been proven for their particular patient category⁷. Often, patients are asked to pay for these treatments themselves.

→ **The development of strategies to highlight and prevent overtreatment in MAR can contribute to strengthening patients' rights and increasing patient safety. For instance, overtreatment might be prevented by offering adequate patient information, certification of good clinical practice, and verification of adherence to professional guidelines.**



Optimising fertility preservation

Fertility preservation is the process of storing a person's eggs, sperm, reproductive (ovarian/testicular) tissue and/or embryo(s) so they can use them to try to have biological children later in life. There are several indications for fertility preservation, but it is most widely applied for patients having to undergo cancer treatment⁷. Moreover, fertility preservation can be a solution to offset age-related fertility decline, or to preserve the fertility of transgender people undergoing hormone therapy or surgery. Fertility preservation techniques in adults are established as effective and safe, but their uptake is low⁸. Still to be validated is the restoration of fertility after the transplantation of frozen prepubertal ovarian tissue or testicular tissue.

→ **Improving the uptake of fertility preservation and further refining fertility preservation techniques can strengthen patients' rights and will increase the quality of life of people whose fertility may be compromised. To increase quality of care for patients with cancer and other conditions that will affect fertility, fertility preservation should be an inherent part of care pathways.**



Optimising psychosocial support for infertility patients

Infertility and fertility treatment can have a high psychological strain on patients. Thus, patients need psychosocial support before, during and after treatment. Particularly in case of unsuccessful treatment, patients need support for accepting childlessness¹⁰.

→ **Validated interventions for psychosocial support are needed to improve the mental health of infertility patients.**

⁵ART in Europe, 2017: results generated from European registries by ESHRE. <https://doi.org/10.1093/hropen/hoab026>

⁶ESHRE factsheet on registries. <https://www.eshre.eu/Europe/Factsheets-and-infographics>

⁷Fertility preservation – a guide for people facing an illness or life events that may affect their fertility. https://www.edqm.eu/en/d/108989?p1_back_url=%2Fen%2Fsearch-edqm%3Fq%3Dfertility%2Bpreservation

⁸Smith et al., 2018. Advances in Fertility Preservation for Young Women With Cancer. Am Soc Clin Oncol Educ Book. 23:38:27-37. https://doi.org/10.1200/EDBK_208301

⁹Dondorp & De Wert, 2011. Innovative reproductive technologies: risks and responsibilities. Hum Reprod 26(7). <https://doi.org/10.1093/humrep/der112>

¹⁰Routine psychosocial care in infertility and medically assisted reproduction – A guide for fertility staff. <https://www.eshre.eu/-/media/sitecore-files/Guidelines/Psychology/ESHRE-psychology-guideline-2015-final-version-1-2.pdf?la=en&hash=D3D7A78F264FB8C95E5C84D5226666B389FA530D>



Improving data collection on MAR

Vigilance and surveillance are crucial for assessment of the efficacy and safety of procedures used in MAR. Currently, only few EU Member States have detailed treatment registries that are suitable for this purpose. Moreover, data collection at national level is limited in its ability to provide information on cross-border treatments.

→ **An EU-wide registry with prospective coverage of all MAR treatments, including cross-border procedures and fertility preservation, could strengthen vigilance and surveillance thus improving assessment of efficacy and safety of the different MAR treatments. Such a registry should be comprehensive, also including the effects of treatments on donors and, wherever possible, offspring.**

About ESHRE

ESHRE is a European non-profit organisation with international membership, whose main mission is to promote the study and research of reproductive science and medicine as well as the treatment of infertility. Established in 1984, the Society now comprises more than 8,000 members and has become the leading Society in reproductive science and medicine worldwide. Our members are medical professionals, scientists and researchers working in reproductive science, reproductive medicine and embryology.

