

## Freezing futures: informed decision-making in elective oocyte cryopreservation



In “Initiation and outcomes of women pursuing planned fertility preservation,” Boedeker et al. (1) report on a large study of women who chose to undergo oocyte cryopreservation and their achievement of age-specific recommended goals for the total numbers of oocytes collected. Their results show that of nearly 6,000 patients who sought consultation for planned oocyte cryopreservation at a single center over a 10-year period, approximately 3,500 underwent ovarian stimulation with oocyte retrieval and cryopreservation. From this cohort, 425 then thawed their oocytes in preparation for embryo transfer; 69% used their partner’s sperm, whereas 31% used donor sperm. The investigators do not report how many of these frozen embryo transfers led to pregnancies or live births.

The investigators further report that only 57 (4.3%) of these patients met their age-based oocyte goals within 1 cycle and that there were significant associations between both race/ethnicity and level of education and the number of cryopreservation cycles attempted. Patients who self-identified as Black or African American were less likely to complete 2 or more cycles compared with White patients. Patients with higher education were more likely to have completed more than 1 cycle. Such data are important for identifying the prevalence of those using this reproductive technology and improving understanding of the utilization landscape. However, the investigators concede that key sociodemographic data, in particular regarding whether participants identified as part of the community of lesbian, gay, bisexual, transgender, queer or questioning, or another diverse gender identity, were missing.

Another critical factor the study did not explore was the potential association between counseling practices and patient decision-making. Oocyte freezing was initially developed to aid women undergoing gonadotoxic treatment to preserve their fertility. The technology was declassified as experimental in 2013 (2). Since that time, the use of oocyte cryopreservation for “social” or elective reasons has grown exponentially. According to the Society of Assisted Reproductive Technology, in 2022, >29,000 women in the United States underwent egg freezing cycles, marking a significant increase from approximately 7,600 cycles recorded in 2015, representing an >350% increase (3).

This increase in elective egg freezing is attributed to the desire for delayed childbearing, because of factors such as career goals, and concerns about age-related fertility decline. The most commonly cited reason is lack of a partner and fear that an individual may experience age-related infertility by the time they find a partner (4). Although planned oocyte cryopreservation may allow more reproductive autonomy, there are concerns that counseling may at times be inconsistent, inaccurate, or incomplete, and, in turn, there may be a lack of true informed decision-making.

The first domain where patients may not receive complete information or may face barriers to freedom in their reproduc-

tive choices is financial cost. A single cycle of oocyte or embryo cryopreservation costs approximately \$12,000. Storage fees range in the hundreds of dollars per year and add to the cost, as does the need for in vitro fertilization. When the time comes to create embryos and attempt implantation, this cost can run in the tens of thousands of dollars and is rarely fully covered by private or public insurance. As of October 2024, 22 states and Washington, D.C., have some form of insurance coverage laws for fertility (5). In the few states where patients are covered for fertility preservation under Medicaid, coverage is limited to “medically necessary” or iatrogenic cases (5). It is clear that gross inequities exist for the poor and middle classes in accessing oocyte cryopreservation.

Furthermore, offering coverage for planned oocyte cryopreservation is increasing by large employers such as Apple, Google, Netflix, Starbucks, Spotify, and Meta. Making this coverage available may encourage younger women to prioritize their careers by delaying family building, coercing them to pursue oocyte cryopreservation to demonstrate commitment to their career in a competitive environment. This motivation may be exacerbated by misrepresentation of the likelihood of retrieving appropriate oocyte numbers, usage of these gametes, and successful childbirth outcomes. Many women report feeling conflicted between their family-building goals and career ambitions.

Finally, there is a lack of empirical data on the information patients receive regarding the longitudinal and multifaceted considerations of family building after oocyte cryopreservation. Younger patients may be incompletely counseled about their likelihood of finding a partner and electing not to use cryopreserved oocytes, rendering the procedures and costs involved in retrieval and storage unnecessary. Individuals who undergo oocyte cryopreservation at a more advanced age may not be adequately guided to appreciate the quantity and quality of oocytes necessary for successful pregnancy and live birth, as well as the increased risk of complications with pregnancy at older ages (4).

Once a patient elects to undergo oocyte cryopreservation, they may not receive the necessary information on fertility clinics’ potential limitations on accepting gametes frozen elsewhere or the costs involved in transporting oocytes to another clinic. Fertility clinics may also have policies concerning an upper age limit at which reproduction can be pursued using cryopreserved oocytes. Patients should also consider a potential partner’s willingness to participate in assisted reproductive technologies for family building. Although the technology of oocyte cryopreservation is no longer experimental, it is still a relatively young and emerging practice with evolving knowledge on technical success, as well as the outcomes regarding pregnancies and offspring.

The study by Boedeker et al. (1) offers an important contribution to the field’s understanding of how this technology is used by the general patient population. However, the investigators’ findings also point to the critical need for further examination of the information and counseling patients receive when considering oocyte cryopreservation for planned fertility preservation. It is imperative to understand if associations between certain demographics and the

pursuit of oocyte freezing or the number of cycles undertaken are driven in part by incomplete or biased information. Most importantly, inconsistent information provided to different patient populations could perpetuate existing inequities in patients' knowledge, access, and, ultimately, decisions. Building on the report by Boedeker et al. (1), future research is essential in highlighting the full scope of patient, clinician, and society-related barriers to individuals' abilities to make truly informed choices about family building.

### CRediT Authorship Contribution Statement

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### Declaration of Interests

T.S. has nothing to disclose. A.C. has nothing to disclose.  
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