

# Egg Freezing for Age-Related Fertility Decline

This Clinical Practice Guideline has been prepared by the Canadian Fertility and Andrology Society (CFAS) Clinical Practice Guideline committee in collaboration with the SOGC Reproductive, Endocrinology and Infertility (REI) committee and reviewed by the SOGC Guideline Management and Oversight Committees and approved by the Boards of the SOGC and CFAS.

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**Key Words:** Oocyte vitrification, social egg freezing, elective egg freezing, fertility preservation, delayed child-bearing

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## Abstract

**Objective:** To provide a comprehensive review and evidence based recommendations for Canadian fertility centres that offer social egg freezing.

**Outcomes:** In social egg freezing cycles we evaluated thawed oocyte survival rates, fertilization rates, embryo quality, pregnancy rates, and live birth rates. We also review how these outcomes are impacted by age, ovarian reserve, and the number of eggs cryopreserved. Finally, we discuss the risks of social egg freezing, the alternatives, the critical elements for counselling and informed consent, and future reporting of egg freezing outcome data.

**Evidence:** Published literature was reviewed through searches of MEDLINE and CINAHL using appropriate vocabulary and using key words ("oocyte cryopreservation," "egg freezing," "egg vitrification," "social egg freezing," and "elective egg freezing"). Results included systematic reviews, randomized controlled trials, controlled clinical trials, and observational studies. Expert opinion based on clinical experience, descriptive studies, or reports of expert committees was also included to discuss aspects of egg freezing not currently rigorously studied.

**Values:** The evidence obtained was reviewed and evaluated by the Clinical Practice Guideline (CPG) Committees of the Canadian Fertility and Andrology Society (CFAS) under the leadership of the principal authors.

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Women have the right and responsibility to make informed decisions about their care in partnership with their health care providers. To facilitate informed choice women should be provided with information and support that is evidence based, culturally appropriate and tailored to their needs. The values, beliefs and individual needs of each woman and her family should be sought and the final decision about the care and treatment options chosen by the woman should be respected.

**Benefits, Harms, and Costs:** Implementation of this guideline should assist the clinician to develop an optimal approach in providing counselling for egg freezing while minimizing harm and improving patient outcomes during treatment.

**Validation:** These guidelines have been reviewed and approved by the membership of the CFAS and by the CPG Committees of CFAS and The Society of Obstetricians and Gynaecologists of Canada (SOGC).

**Sponsors:** CFAS and SOGC.

**Recommendations:**

1. Patients should be advised that thawed oocyte survival rates vary, typically between 80% and 90% (Strong, High).
2. Thawed oocytes should be fertilized using intra cytoplasmic sperm injection and patients should be advised that fertilization rates vary, typically between 70% and 80% (Strong, High).
3. Patients should be advised that vitrified oocytes yield fewer blastocysts than fresh oocytes do (Weak, Moderate).
4. Patients should be advised that there are very limited data on live birth rates after social egg freezing, but that the existing data suggest similar clinical pregnancy rates after transfer of embryos obtained by either vitrified or fresh oocytes (Strong, Moderate).
5. Women considering social egg freezing should be advised that the age at which they freeze their eggs and the number of eggs that are frozen impact the probability that these eggs will enhance their fertility (Strong, Moderate).
6. Ovarian reserve testing should be offered to help predict the number of retrievable eggs from a controlled ovarian stimulation cycle and to properly counsel those women at risk of very low oocyte yield (Strong, High).
7. Women considering social egg freezing should be advised that more than one cycle may be required to obtain the number of mature eggs that is desired (Strong, High).
8. Patients considering social egg freezing should be informed about the risks of controlled ovarian stimulation, oocyte retrieval, and pregnancy at a more advanced maternal age (Strong, Moderate).
9. Patients considering social egg freezing should be advised that there is a chance they may not need to use their frozen eggs and that no guarantees can be made that their frozen eggs would produce a viable pregnancy (Strong, High).
10. Women considering social egg freezing should be counselled about the alternative options (Strong, Moderate).
11. Women undergoing social egg freezing should receive sufficient information to provide informed consent (Strong, High).
12. In vitro fertilization centres offering social egg freezing should provide their patients with an estimate of their chances of success. This estimate should not only consider the published medical literature but also should take into account national data regarding social egg freezing and clinic-specific data regarding cumulative live birth rates per oocyte retrieval (Strong, Low).

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