

Future on Ice: Elective and Medical Fertility Preservation



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The technology surrounding oocyte cryopreservation makes it a viable tool within the arsenal of fertility treatments, particularly since its acceptance by ASRM in 2012 as a non-experimental technique. This tool can be used to help patients with a medical threat to their fertility, in the form of cancer, endometriosis, gender transitioning treatments, premature ovarian insufficiency, autoimmune conditions, and toxic therapies.

Oocyte cryopreservation increasingly is offered to patients as a preventive therapy for the age-related decline in egg quality and number. Non-medical threats exacerbating conception while associated with age-related oocyte impairment include a lack of partner, financial restraints, and career obligations, among others. A wide range of ages for fertility preservation are technically feasible. Optimal outcomes seem to be obtained prior to age 35 if possible, or by age 38 if later cryopreservation is undertaken. Increasingly high numbers of mature oocytes are required to obtain a live birth when cryopreservation is done at advanced ages. Stimulation protocols during oocyte cryopreservation cycles may have

different medical considerations than during routine embryo creation. For example, estrogen and progesterone receptor positive breast cancer patients desiring egg cryopreservation frequently need lower levels of estrogen maintained throughout stimulation. Using an aromatase inhibitor such as letrozole and antagonizing GnRH receptors post stimulation to minimize exposure to supraphysiologic levels of sex hormones helps accomplish this goal.

In addition to medical concerns, differential emotional considerations exist in oocyte cryopreservation cycles. Many patients are simultaneously undergoing complex and rapidly changing treatment plans for their underlying condition, complicating cycle management and taxing emotional reserves. Transgender patients may experience increased gender dysphoria throughout a treatment that enhances hormone levels of their non-identified gender and requires genital-centric procedures. Even non-medical oocyte cryopreservation patients have higher levels of internalized shame that they have not achieved social markers of financial stability, a partner, or children by a proscribed age. Oocyte cryopreservation requires different laboratory techniques and more skill than embryo cryopreservation due to the altered ratio of surface area to cytoplasm as well as the presence of a single cell rather than many cells. The primary focus of this presentation centers on oocyte cryopreservation as a method of fertility preservation, but also touches on embryo cryopreservation and ovarian tissue cryopreservation.