

Frozen eggs more efficient option than in vitro fertilization for women starting families later

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The largest U.S. report of elective fertility preservation outcomes to date found that 70 percent of women who froze eggs when they were younger

than 38—and thawed at least 20 eggs at a later date—had a baby.

Led by experts at NYU Grossman School of Medicine and the NYU Langone Fertility Center, the new finding was based on 15 years of "real life" frozen egg thaw outcomes for [women](#) who had delayed childbearing and faced natural, age-related fertility decline.

Published online May 18 in *Fertility and Sterility*, the study also found that considerable number of the women studied had more than one child through egg preservation. In total the study reports 211 babies from egg freezing.

In comparison, and using fresh eggs or embryos from women trying to conceive, at age 40 fewer than 30 percent undergoing in vitro fertilization (IVF) become pregnant and fewer than 20 percent gave birth to live babies as a result, according to statistics gathered by the Centers for Disease and Prevention from the nation's nearly 500 fertility clinics. Egg freezing and thawing at a later date provides a higher pregnancy success rate than using fresh embryos during assisted [reproductive technology](#), say the study authors.

"Our findings shed light on the factors that track with successful births from egg freezing, which include careful screening of embryos to be thawed and implanted," says study lead author Sarah Druckenmiller Cascante, MD, fellow in the Division of Reproductive Endocrinology and Infertility, within the Department of Obstetrics and Gynecology at NYU Langone. "A better understanding of the live birth rate from egg freezing for age-related fertility decline is necessary to inform patient decision-making."

"Importantly, our study is based on actual clinical experience," adds Cascante, "rather than mathematical modeling with limited data, which is most of what has been published on the chance of births from egg

freezing thus far." The number of U.S. women having children at older ages has been increasing for three decades, with evidence that the trend will continue. Birth rates have declined for women in their 20s and jumped for women in their late 30s and early 40s, according to the U.S. Census Bureau. The average age at first birth has risen from 19 years old in 1984 to 30 years old in 2021 and is higher in many metropolitan areas.

Specialists within the NYU Langone Fertility Center have been pioneers in the development of egg freezing technology, with the first baby born through via egg freezing at NYU Langone in July 2005. The Center has seen almost triple the number of women starting egg freezing cycles in 2022 in comparison to 2019. As this national trend increases, more data is needed to inform patients that seek to secure their reproductive futures.

Study Details

Within the study, 543 patients participated with an average age of 38 years old at the time of the first egg freeze, which is older than the optimal age to freeze eggs (35 years old or younger). These patients underwent 800 egg freezing cycles, 605 egg thaws, and 436 embryo transfers between 2005-2020.

The investigation found that overall, 39 percent of women between 27-44 years old, with a majority between 35-40 years old at egg freeze, had a least one child from their frozen eggs, which is comparable with age-matched IVF outcomes. Across all ages, women who thawed more than 20 mature eggs had a 58 percent live birth rate, which was profound and unexpected as this group included patients past their reproductive prime. In fact, 14 patients who froze eggs at the age of 41–43 years successfully had children from their frozen eggs. As noted, women under 38 years old who had 20 or more mature eggs thawed achieved a 70 percent live birth rate per patient. The length of frozen egg storage

did not change the success rate.

Results also showed that preimplantation genetic screening with embryos from frozen and eventually thawed eggs resulted in lower miscarriage rates and higher live [birth rates](#) per transfer. Such screening also allows for single embryo transfers, yielding singleton pregnancies, which are safer for both the mother and child, say the authors.

"Our results provide realistic expectations for those considering oocyte preservation, and demonstrate that egg freezing technology empowers women with improved reproductive autonomy," says study senior author James A. Grifo, MD, Ph.D., director of the Division of Reproductive Endocrinology and Infertility and the NYU Langone Fertility Center. "Freezing eggs at a young age becomes an option to be one's own egg donor at advanced age. As younger patients freeze [eggs](#) and do more than one cycle, the success rates will be even higher than reported in this study."

Dr. Grifo, also a professor in the Department of Obstetrics and Gynecology at NYU Langone, cautions that the study was limited by the number of patients. Future larger studies are under way to increase the data set from which patients can benefit and model their expected success rates. He adds that additional studies from a variety of geographic locations and center types are also necessary.

More information: Sarah Druckenmiller Cascante et al, Fifteen years of autologous oocyte thaw outcomes from a large university-based fertility center, *Fertility and Sterility* (2022). [DOI: 10.1016/j.fertnstert.2022.04.013](https://doi.org/10.1016/j.fertnstert.2022.04.013)

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