

## **Frozen Motherhood: A Techno Savvy Pause Button....?**

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**Abstract:** NBC News is reporting two Silicon Valley companies will now cover egg-freezing as an incentive for top female talent in their prime fertility years who don't want to sacrifice motherhood for work. The two tech giants appear to be the first major companies to do so for non-medical reasons. In a sign of its rarity, neither the Society of Human Resources Management nor the Families and Work Institute, a nonprofit that does research on workplace issues, have ever asked about egg freezing as a benefit in surveys. Apple and Facebook say they'll shell out as much as \$20,000 for women to put their parenthood plans on ice. The firms also hope the incentive will help women balance child-rearing and work life. However, even as success rates continue to rise, there are no guarantees the method will lead to conception down the road. While the move is sure to bring in gifted tech talent eager to have it all, experts warn that freezing eggs is no guarantee of a future family. Thus, this article is an attempt to understand the practicality of the concept of the egg-freezing and focuses on the side effects of the renewed concept. It will be an empirical study based on the secondary data for fact finding.

**Keywords:** Women, Egg frizzling, empowerment, child.

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### **BACKGROUND**

Pregnancy, by virtue of the body's physical focus on human reproduction, is humanity's last, biological stand against the corporate demand for workers' continuous labor. With the globalization, pregnancy must be converted into a corporate opportunity: a moment to convince a woman to commit further to her job. Human life as a competitor to work is the threat here, and it must be captured for corporate use, much in the way that Facebook treats user's personal activities as a series of opportunities to fill out the Facebook-owned social graph. By arguing that women should express their feminism by remaining in the workplace at all costs, encourages women to maintain a commitment to the workplace without encouraging the workplace to maintain a commitment to them.

Now days, Egg freezing parties are becoming the new thing for women. Especially since two of the largest technology companies in the U.S., Facebook and Apple are now paying for their female clients to freeze their eggs.

Many large companies adopt new benefits in response to employee demand – firms have recently started to offer benefits for transgender employees, for example. As women's awareness of egg freezing grows, more employers may jump on the band wagon.

EggBanxx, the first service to help women finance egg freezing, has recently begun to capitalize on this shift by hosting "egg-freezing parties," where experts educate guests. "Maybe you haven't found Mr. Right just yet or perhaps it would like more time to focus on your education or career," the company website says. "Whatever the reasons, freezing your eggs now will allow it to tackle conception later."

Westphal compares egg freezing to car insurance: It hope you don't have to use what you've put away, but if it finds yourself in a situation where it need to, you're glad to have the protection.

### **INTRODUCTION**

Human oocyte cryopreservation (egg freezing) is a novel technology in which a woman's eggs (oocytes) are extracted, frozen and stored. Later, when she is ready to become pregnant, the eggs can be thawed, fertilized, and transferred to the uterus as embryos.

Egg freezing has been described as a key to "leveling the playing field" between men and women: Without the crushing pressure of a ticking biological clock, women will have more freedom in making life choices. They are making the proactive decision to freeze their eggs at a younger age, and the choice is "more one of empowerment than 'this is my last chance'".

Women who want or need to delay childbearing in order to pursue educational, career or other personal goals can think of the option. A woman facing infertility due to medical or social reasons also has the option of freezing her eggs for later use. Because fertility is known to decline with age, freezing your eggs at an early reproductive age will insure chance for a future pregnancy. Unlike the ovary and oocytes (eggs), the uterus does

not age and can carry a pregnancy well in to the 40s and 50s. Frozen (cryopreserved) eggs are stored at -196 degrees, so there is no deterioration in egg quality with time.

Similarly, Egg freezing offers a chance to preserve eggs prior to chemotherapy, surgery or radiation. Most of these treatments destroy the eggs and lead to infertility. In some cases, viable eggs may be present after cancer treatment. Fertility preserving options vary depending on age, type of cancer, and cancer-treatment plan.

Furthermore, Women with a family history of early menopause can opt for Egg freezing. Some forms of early menopause (premature ovarian failure) are genetically-linked. Egg freezing offers a chance to preserve eggs before they are all depleted.

The Human Fertilisation and Embryology Authority (HFEA) is the statutory body that regulates fertility treatments including IVF and the storage of sperm and eggs. Human oocyte cryopreservation (egg freezing) is a novel technology in which a woman's eggs (oocytes) are extracted, frozen and stored. Later, when she is ready to become pregnant, the eggs can be thawed, fertilized, and transferred to the uterus as embryos.

### **How well does egg freezing work?**

To secure any eggs it must first submit to a demanding series of rigorously scheduled blood tests, hormone injections, and ultrasounds conducted over several weeks prior to the actual egg retrievals. During a typical natural cycle, women body will release one egg a month. During the egg freezing process it will inject the body with a cocktail of powerful hormones—many prescribed off-label – that hyper stimulate body ovaries to produce eggs. Depending on women's age and reproductive health it may only generate a few eggs or it might produce two dozen. (As many as one-third of women who undergo ovarian stimulation suffer from a condition known as ovarian hyperstimulation syndrome (OHSS), which in extreme cases, can be life threatening.)

After nine to 13 days of self-injection, usually twice daily, it will submit to the risks of sedation while a doctor collects the eggs by punching a series of holes into the ovaries and applying suction. If it have exceptional egg quality and produce six eggs in one cycle, there will probably be one reasonable attempt at pregnancy. To increase the odds of sufficient viable eggs to fertilize, egg freezing businesses advise at least two cycles. Assuming unlimited financial resources or a generous benefit package it may endure multiple cycles. With each round of powerful hormones and punctured ovaries the risk of complications and long term health consequences increase. Once flash frozen, women eggs are stored indefinitely for an annual fee ranging from \$500 to \$1,000. Fast forward many months or even years into the future. It now attempts to get pregnant with frozen eggs. Hopefully it have sufficient savings, or are still employed by Facebook or Apple, because it must now undergo at least one, but probably multiple rounds of invasive and life-altering in vitro fertilization (IVF) procedures. It must again inject women body with hormones, this time to prepare body uterus to welcome a potential embryo. It must open women body to entire emotional, social and professional schedule to daily blood tests, ultra sounds, vaginal probes and other assorted procedures that experienced women have referred to as "humiliating." If body uterus responds to the hormones, the frozen eggs must then be successfully thawed—no easy task given low thaw survival rates. An egg's shell hardens when frozen in liquid nitrogen so to attempt in vitro fertilization sperm must be injected directly into the egg with a needle to fertilize the egg through a technique known as ICSI (Intracytoplasmic Sperm Injection).

Again, if all goes well and at least one viable embryo is created in the laboratory, it is then transferred into body uterus. As with naturally occurring conception, the final outcome is in Mother Nature's hands—and she is clearly not incentive driven. The vast majority of procedures fail.

To date, USC Fertility has cryopreserved the oocytes of more than 150 women. Of those who have returned for their eggs, 15 of 21 (65%) have delivered babies. There are two standards to judge egg freezing. One standard is fresh, never frozen embryos and the other is frozen embryos. Initial 65% frozen egg pregnancy rate is above that of fresh embryos and twice that of frozen embryos. Other centers using similar techniques have achieved pregnancy rates as good as frozen embryos. Since the number of patients that have undergone embryo transfer from frozen eggs is small, more studies will be necessary to confirm these encouraging results. While the move is sure to bring in gifted tech talent eager to have it all, experts warn that freezing eggs is no guarantee of a future family.

Egg freezing is invasive and it comes with serious short- and long-term physical and mental health risks.

### **How long can the eggs remain frozen?**

Fertility centers freezes eggs in the same manner as embryos, utilizing a freezing temperature of -196 degrees Celsius. Based on scientific evidence, as well as experience achieving pregnancies with frozen embryos – in one case the embryo was frozen 10 years. Fertility center are confident that long-term storage of frozen eggs does not result in any decrease in quality.

### **What are the costs?**

The costs for egg freezing are identical to those of routine IVF. In general, it costs \$10,000 to undergo an egg freezing cycle. This estimate includes all testing, monitoring, medications and egg freezing. Women eggs will be stored for the first year at no charge. Thereafter, storage will be \$500 per year. The egg thaw, fertilization and embryo transfer procedure costs approximately \$5,000 and is payable at the time of egg thaw. All of these costs will be set and guaranteed at the time of the initial egg freezing cycle. Also Fertility centers will extend a discount for additional cycles of egg freezing beyond the first. Payment plans are also available.

### **Will the perk pay off for companies?**

The benefit will likely encourage women to stay with their employer longer, cutting down on recruiting and hiring costs. And practically speaking, when women freeze their eggs early, firms may save on pregnancy costs in the long run. A woman could avoid paying to use a donor egg down the road, for example, or undergoing more intensive fertility treatments when she's ready to have a baby.

### **DarkSide of Egg Freezing**

There is an entire branch of science, called epigenetics, which is showing that the way you live your life -- stress, diet, sleep, emotions -- all affect that way you age. And you can actually slow down, even reverse the aging process depending on how you live your life.

Egg freezing is being positioned as the "answer" to our current infertility epidemic. Here's why:

1. Age is NOT our biggest factor when dealing with fertility challenges, yet egg freezing translates to younger woman as a mechanism to buy time.
2. There is so much more that goes into getting pregnant than the egg from a woman.
3. Frozen eggs are rarely ever used. Or, as fertility doctors often say: When it comes to eggs, fresh is much better than frozen. In fact, as a recent article published in Slate, "Should You Freeze Your Eggs," stated: "According to the American Society for Reproductive Medicine (ASRM), even freezing eggs relatively early -- younger than age 38 -- is a long shot; the chance that one frozen egg will lead to an eventual baby is a dismal 2-12 percent. Thus, Egg freezing is a backup plan and by no means a guarantee of a future baby."

Data on the safety, efficacy, cost-effectiveness and emotional risks of elective oocyte cryopreservation are insufficient to recommend elective oocyte cryopreservation. Marketing this technology for the purpose of deferring childbearing may give women false hope and encourage women to delay childbearing. In particular, there is concern regarding the success rates in women in the late reproductive years that may be the most interested in this application. Patients who wish to pursue this technology should be carefully counseled about age and clinic-specific success rates of oocyte cryopreservation vs. conceiving on her own and risks, costs, and alternatives to using this approach.

Silicon Valley firms are hardly alone in offering generous benefits to attract and keep talent, but they appear to be leading the way with egg freezing. Advocates say they've heard murmurs of large law, consulting, and finance firms helping to cover the costs, but no companies are broadcasting this support. Apple (APPL) and Facebook (FB) created a media firestorm after announcing that their lush benefit packages will now include egg freezing coverage. But lost in the theoretical discussions about the merits of this perk are more realistic considerations.

Companies may be concerned about the public relations implications of the benefit -- in the most cynical light, egg-freezing coverage could be viewed as a ploy to entice women to sell their souls to their employer, sacrificing childbearing years for the promise of promotion.

**Thus, Egg freezing is a relatively new and experimental technique. The offering of this benefit can help women be more productive human beings as far as her career is concerned. But the emotional and sociocultural payoff may be more valuable and hence will not be ignored.**

### **Social Payoff:**

Women should be able to have a successful career, but there are sacrifices. Despite all the medical advances in fertility treatments, there are great social costs that don't bode well on a general societal level. The problem isn't just declining fertility and increase in genetic abnormalities in older moms. When their child is in their early twenties, they will be saddled with aging parents. During a time when young adults should be forging their way through the world, there is the emotional, physical or financial burden of taking care of older parents. There is also the possibility that the relationship between grandparent and grandchild will be affected by increased age of grandparent. And on a macro-societal level, the passing on of inferior genetic material (which

is an unfortunate byproduct of older eggs) isn't good for future generations. Thus, this view is not against an older mom getting pregnant naturally, but it's a bad idea to offer delayed motherhood across the board.

**Emotional Payoff:**

The emotional toll associated with family-building failure can be crushing. The scientific fascination with the latest protocol and the marketing of fertility procedures as a lifestyle enhancer the past few decades has unwittingly led to a disregard for the emotional responses of these medical procedures, which creates a different kind of health concern – one involving mental health. Studies have shown that people coping with fertility failures are as distressed as cancer patients. Many others suffer depression and post-traumatic stress disorder.

**Financial Payoff: Cash Cows (Commercial Clinics):**

Today service providers and clinics cavalierly market egg freezing to fertile women without fully understanding or communicating the risks. There is still not enough known about the egg freezing procedure's safety, efficacy, cost-effectiveness, and emotional risks.

The negatives of this are conveniently overlooked by those selling services. It may give women false hope and encourage women to delay childbearing. There will not be failure rates or the harmful impacts highlighted in brochures or on clinic websites. The ASRM annual meeting, held this week in Honolulu, included this session: Fertility Preservation Patients: How to Re-engineer your Practice to Accommodate Them. It was conducted not by an M.D., but by someone with an MBA.

The American College of Obstetricians and Gynecologists and the American Society for Reproductive Medicine (ASRM) do not endorse the use of egg freezing to defer childbearing. The ASRM's decision to lift the 'experimental' label from this still young procedure in 2012 only applied to medically indicated needs, such as women with cancer. Moreover, there is no long-term data tracking the health risks of women who inject hormones and undergo egg retrieval, and no one knows how much of the chemicals used in the freezing process are absorbed by eggs, and whether they are toxic to cell development. Furthermore, even with the new flash freezing process, the most comprehensive data available reveals a 77 percent failure rate of frozen eggs resulting in a live birth in women aged 30, and a 91 percent failure rate in women aged 40.

Thus, Commercial clinics have become cash cows. There is big money to be made in selling dreams of parenthood. A report by Allied Analytics LLP estimates that the net worth of the IVF market at the end of 2012 was US \$9.3 billion, a figure that is estimated to increase to \$21.6 billion by 2020. The unrelenting focus on commercial returns means there are no consumer protections in place for the customers buying these expensive services. When it comes to reproductive medicine it is buyer beware.

**The Bottom Line:**

It has been 36 years since the birth of the first in vitro fertilization (IVF) baby. We've since been led to believe that science has mastered Mother Nature. This is not true. Around the world, there are an estimated 1.5 million IVF procedures each year, and 1.2 million fail. The very latest whizzy reproductive 'product' being marketed and wrapped into lucrative employee benefit packages at companies like Apple and Facebook is egg freezing. Lost in all the cheerleading about empowerment and liberating women from their biological clocks is a more buzz-killing, underreported set of facts, which women and families would benefit tremendously in understanding.

Though I am neither for nor against egg freezing as an idea, I believe strongly that women must be fully informed about reproductive medicine before setting their hopes on it. Facebook and Apple and all companies would do well by their employees to hold fertility vendors to the highest possible standards and not inadvertently put worker's physical and mental health in jeopardy. Unlike smartphones or apps that can be recalled or re-engineered should they fail, egg freezing and IVF are high-risk processes with life changing consequences. And this science, particularly where egg freezing is concerned, is still in its infancy.

On the other side surely, egg freezing raised the voice that both sexes may want to maintain a career while having a family but that biological factor may be a limiting factor. When women reach this mid-level point in their careers, they also reach the age when pressure to start a family is drastically increased. Everyone knows about the biological/medical factors that limit a woman's reproduction, but there are also financial, career, and emotional decisions to make – "I want to take this new opportunity. I don't want to pressure my new partner. I just lost my job; I can't afford a child" are common concerns and very real ones.

Facebook and Apple's actions demonstrate an important step to offering employee benefits that at least think to offer more work-life balance and flexibility. If someone wants to delay childbirth, it would be awesome for her employer to cover \$20,000, despite the fact that it's an elective procedure and not "medically necessary".

To conclude it must be noted that, Egg freezing comes with the implication that childbirth is only delayed not ELIMINATED, thus what is really needed is better access to childcare, flexible work environments/arrangements, and an overall approach to paid family care

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