

Egg Freezing

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Due to rapid social changes in Taiwan, many new diseases have appeared in recent years and cancer occurrence among young people has increased. Many women delay marriage and childbearing due to studies, work, the unsuitability of partners, or disease, and this phenomenon has become common in modern society. According to data provided by the Ministry of the Interior, in 1986, the proportion of unmarried women was 23% among those aged 25-29 years and 7% among those aged 30-34 years; however, in 2013, these figures increased to 77% and 48%, respectively. Late marriage causes the issue of late childbirth. Women's reproductive capacity is limited, and in addition to an increased chance of pregnancy complications, the risk of egg abnormalities during oocyte meiosis also increases after the age of 35. Chances of natural conception begin to decrease. After the age of 40, ovarian function deteriorates, leading to poorer egg quality and a reduced number of available eggs. Nowadays, the objectives of childbearing do not only include continuing the family line and raising children to provide for old age; rather, some women see childbearing as an important part of life planning. Egg freezing is an option available to such women planning to give birth.

NTUH initially developed an egg freezing technology to preserve reproductive ability of young cancer patients. However, modern artificial reproduction methods do not limited egg freezing to certain people. Therefore, in absence of disease-related restrictions, both married and unmarried women can opt for egg freezing. Nevertheless, several conditions must be met. According to current regulations effective in Taiwan, in addition to sperm microinjection, egg freezing requires the patient to be married (it is unknown whether these regulations will change with changes in population policies). Artificial reproduction methods are applied only to spouses diagnosed with infertility. Unmarried women, single parents, and homosexual couples cannot use artificial reproduction technologies. Frozen eggs must be destroyed if the egg provider requests their destruction, dies or does not provide a written consent to extend freezing after ten years of egg conservation. In the egg freezing procedure, ovary reactions can be predicted based on the anti-Mullerian hormone (AMH) test and FSH, LH, and E2 levels during the follicular phase. Appropriate induced ovulation treatment is chosen based on the results. Approximately two weeks of pharmaceutical stimulation are followed by an ultrasound that estimates ovary response to the stimulation. Egg retrieval is then

performed using a transvaginal ultrasound. Mature eggs are identified and frozen in a laboratory. The current survival rate of frozen eggs exceeds 90%. The rates of fertilization and pregnancy success are similar to those of fresh eggs. Although few children have been born from frozen eggs, no report has indicated higher abnormality rates in comparison to fresh eggs. Complications that can occur during the egg freezing process are related to egg retrieval and induced ovulation and include bleeding, infection, ovarian hyperstimulation syndrome, and thrombosis. The initial disease treatment can be delayed in order to perform egg freezing.

Despite the emergence of new artificial reproduction technologies and advances in drug research and development, laboratory quality, and pregnancy rates, ovum aging remains a difficult issue in modern medicine. The quality of eggs is directly related to age. Therefore, we do not encourage late childbearing. However, egg freezing is an option for women who need to delay childbearing or treat a disease as it allows for the preservation of mature good-quality eggs at a young age prior to functional damage that can be caused by chemotherapy or radiotherapy.