Frozen Embryo Transfer Vs Fresh Embryo Transfer after IVF

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After embryos are created with in vitro fertilization, should you have your embryos transferred 3 to 5 days later or should embryos be frozen and transferred later in frozen-thaw cycle (FET)? This question became viable after improvement in freezing technology (vitrification) to the extent that the vast majority of embryos (>95%) frozen in The US survive thaw and has high implantation potential.

There are indications to freeze all embryos after IVF i. avoiding ovarian hyperstimulation syndrome, ii. unfavorable uterine lining (thin, fluid..) iii. allow more time for PGD / PGS, iv. personal reasons related to patients.

The aim here is to discuss the merits for and against elective embryo freezing to transfer the embryo or embryos in a thaw cycle. A thaw cycle involves preparation of the uterine lining, embryo thaw and embryo transfer (no stimulation or egg retrieval). Preparation of the lining of the uterus can be accomplished through one of two main methods

a. Natural Cycle FET : Natural ovulation is monitored using ultrasound and blood work. The time of ovulation need to be accurately defined. Embryos are thawed 3 or 5 days later and transferred. It requires minimal medications but require regular ovulation.

b. Synthetic Cycle FET : Estrogen is administered (patches, pills..etc) till the lining of the uterus reach the desired
thickness and pattern. Progesterone is then administered (injections, vaginal tablets) and embryos are thawed and transferred few days later. It does not require ovulation and allows more flexibility in timing of embryo transfer.

There is some evidence that both methods are equivalent with regards to implantation and pregnancy.

On The Advantages of Elective Frozen Embryo transfer

Fresh embryos vs Frozen Embryos

In the US frozen cycles result in equivalent number of pregnancies and deliveries as fresh embryos.

Should Elective Frozen Embryo Transfer be Recommended to The General Fertility Population
Undergoing IVF?

In other words, do we have enough data to recommend freezing all embryos created after IVF and transfer later?

The possible advantages cited for performing frozen embryos transfer originates from two sources

1. Physiological information: excessive exposure of the lining of the uterus to estrogen may lead to abnormal development of the placenta and

2. Observational studies: when compared to fresh embryo transfer, pregnancies resulting from frozen transfer are less affected by bleeding and are associated with heavier babies with lower odds for low birth weight.

Conclusions resulting from non controlled studies and physiologic interpretation are not always accurate due to differences between the two groups and cannot be relied upon for definitive conclusions. A definitive study will need to be prospective and patients can be randomly allocated to fresh transfer or elective frozen transfer. This study does not exist at this time

Can Elective Frozen Embryo Transfer Improve Pregnancy & Delivery Rates?

Three studies showed a trend to improve in pregnancy rates following frozen transfer when compared to fresh IVF transfer. The studies should be interpreted with caution as it included young high or normal responders and not low responders and older women. The studies did show an improve in delivery rate, did not track perinatal outcomes and did not include economic analysis of cost and benefits. So a larger and more comprehensive study is still needed.

New Ideas in reproductive medicine, though exciting, still require the scientific rigorous study to ensure that the
conclusions are correct and define which group will benefit most from freeze all strategy before its general application to women undergoing IVF.

If you need to freeze your embryos after IVF to avoid ovarian hyperstimulation syndrome, because of unfavorable uterine lining or other reasons, please do so especially if the clinic has a robust freezing program. Freezing of embryos (especially with vitrification) is unlikely to affect your chance to get pregnant. On the other hand if you want to freeze all your embryos to improve your chance of getting pregnant, know that this strategy is debatable and not backed by solid scientific evidence.

When undergoing a frozen transfer cycle and if you have regular ovulation and a favorable lining, consider natural cycle FET over synthetic (medicated) cycle as there is evidence that they are equivalent. Natural cycle avoid external medications and excessive exposure to estrogen