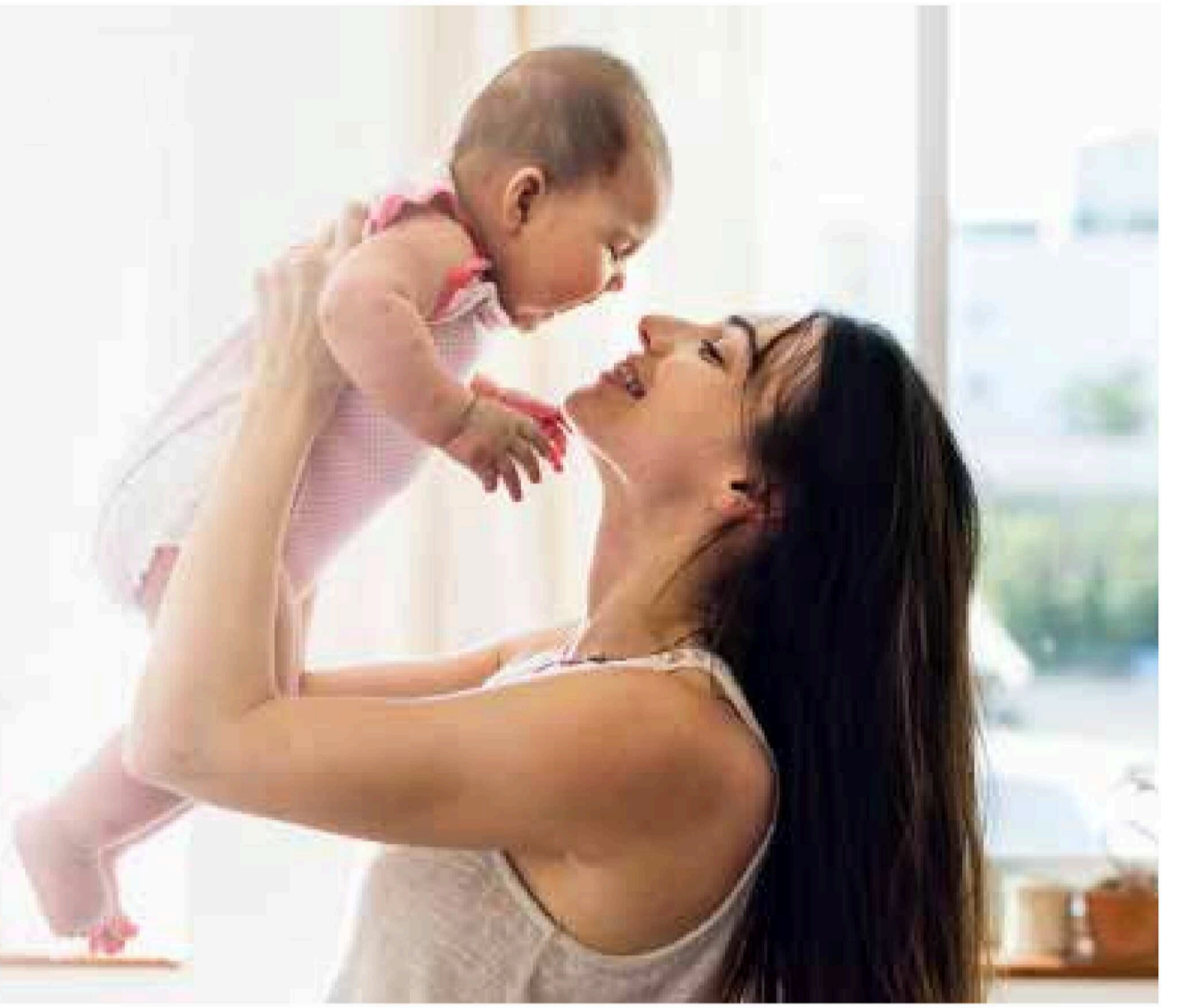


FREEZING – AN EXCELLENT OPTION FOR PLANNED PREGNANCY



Cell freezing is the technique of preserving cells by freezing, to keep them dormant. Freezing promotes longevity which is currently not attainable by any other means. This has encouraged scientists to pursue the technique for more than a century and today it is a reality. Freezing suspends all biological activity and stores cells in the same state for indefinite period – it is a form of immortality.

Now-a-days bone marrow, blood cells, embryos, sperm cells and eggs are the commonest tissues which are frozen. Fertility as a subject has come a long way and has gotten more complex than ever. Currently, cryopreservation is one of the core practices.

Ever since 1986, healthy pregnancies are being achieved from cryopreserved cells. Cryopreservation is a part of advanced Infertility treatments. The main advantage of freezing is that it gives us the opportunity to preserve cells intact for a long time.

WHO SHOULD CONSIDER FREEZING AS AN OPTION IN INFERTILITY?

It is known that age is the most important determinant of the capability to achieve pregnancy more than any other parameter. Commonly referred to as the biological clock, this is the timeline for having children. Even though fertility doesn't end sharply at 35 as commonly believed, this is not a myth. Fertility definitely goes down gradually with age. So does the quality of embryos formed from aged eggs.

This is the reason why single or unmarried women, are worried about time running out or the health of future kids and opt to freeze their eggs. With changing social structure, career oriented women who are not psychologically ready to start a family in their 20's and 30's so far were forced to decide between career or family. Increasingly in the western world, today more and more women are opting to freeze their eggs early on and start families once settled in their careers. Freezing preserves the quality and quantity of eggs at the age when they were frozen and hence it's considered a hack to pause the ticking clock.

The same applies to single males. For medical or social reasons, men who wish to postpone parenthood have the option to freeze sperm cells.

Over and above just age, women with a family predisposition of early menopause due to genetic factors can have a reduced fertility potential and a narrow fertility window. This can be identified by measuring the ovarian reserve through blood tests as well as ultrasound scan. Once detected, these women are advised to complete their family at the earliest. However, if personal reasons preclude this, egg or embryo freezing is an ideal option for them.

Preimplantation genetic testing is a genetic test performed on embryos on which gives us information about the genetic makeup. This test can identify embryos with the correct number of chromosomes. Transferring healthy embryos will lessen the chances of miscarriage as well as result in healthy babies. Embryos which are free from genetic diseases like thalassemia, sickle cell disease and such conditions that run in families can be identified. Currently, these tests have a turn around time of a few weeks. Hence, freezing is a must as an adjunct while the results are awaited.

Cancer is not a disease that affects just the elderly. Almost 25-30% of cancer affected men and women have not yet married or had kids. Medical treatments - chemotherapy drugs and

radiation given to treat cancer, cure the disease but harm fertility. In such situations, choosing to preserve eggs or sperm can give us the chance to have biological children later at the appropriate time.

Lastly, there are many couples who are unable to have biological kids and depend on donor egg or sperm. Altruistic donation and banking of sperm/ eggs is the only way to realise the family dream of these couples.

WHAT IS PRESERVED?

Surplus embryos from the IVF cycle are the most commonly cryopreserved cells. This saves the woman the trouble of undergoing another IVF cycle with all the costs and inconvenience if one cycle fails. Previously, such excess embryos were discarded and for some reason, if pregnancy was not achieved, the couple were back at square one. With cryopreserved embryos, even if the treatment is a success and pregnancy is achieved too, couple can come back for their second child to complete the family.

Human oocyte- the egg is a very delicate cell. However, with advances in technical expertise, egg freezing has now become a routine and safe procedure in experienced hands. Egg freezing is also known as oocyte cryopreservation. Choosing this option keeps the woman's chances of having a genetic child open beyond the natural fertility period. Eggs are retrieved after stimulating the ovaries with hormones and then preserved. At the chosen time, they may be thawed and injected with sperm to create embryos. These embryos are then transferred to the woman's or a surrogate's uterus to give a biological child.

Historically, sperm cells have been the easiest human reproductive tissue to access as well as cryopreserve. Research in cell freezing always involved working with sperm cells. Sperm cells tolerate freezing well without compromising function for more than 20 yrs as was discovered recently. Sperm freezing is also routinely offered to men who work remotely (soldiers, sailors, software professionals working onsite abroad etc.), who can't be available in person during an IVF cycle.

Apart from these cells, small bits of ovarian tissue can also be frozen. This avoids the IVF process all together and also helps young girls preserve their fertility.

Freezing was initially done by a technique called slow freezing, but lately most IVF centres have switched to Vitrification. This new supercooling technique significantly lowers the costs, complexity and cell damage related to the technique. Typically, in any form of freezing, chemicals called solutes are added according to fixed protocols in specific concentrations, which replace water inside the cells and enable freezing. Then they are placed in small vials, labelled and submerged in large cryotanks filled with liquid nitrogen.

IS THIS RISK FREE?

Cryopreservation is an advanced technique which is reasonably safe and effective. However, having a healthy child involves much more than an egg, sperm or embryo. How the woman's body reacts and accepts the implanted embryo depends on her uterus, health conditions and immunity, which plays an especially important role.

The loss of frozen embryos is rare but possible despite all precautions. There have been reported instances of loss of precious cryopreserved tissues due to logistic factors such as liquid nitrogen supply and refilling problems,

power outages, natural calamities and such.

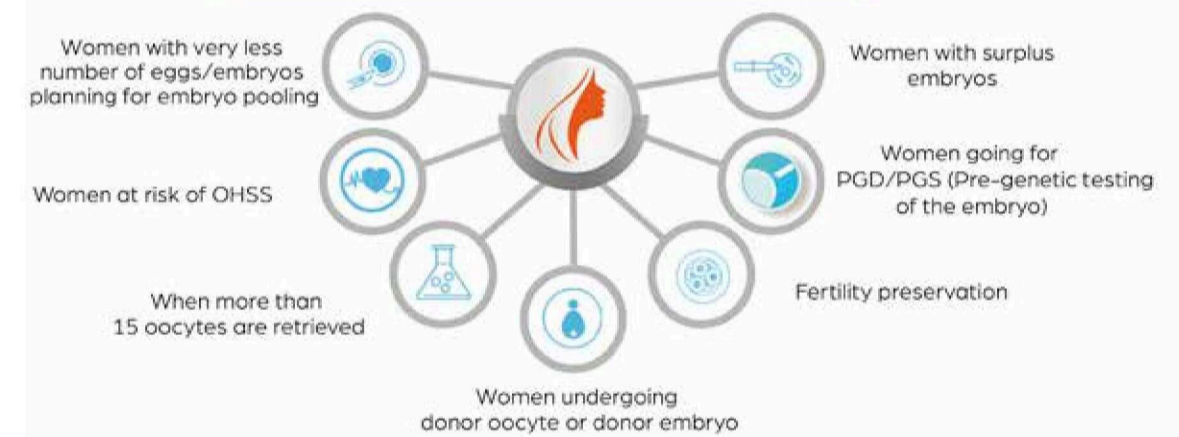
Barring such unforeseen issues, damage during freezing and thawing is more likely due to temperature changes. Akin to chill burns, freezing of water and ice crystal formation inside the cells kills them. Cells need to be taken to temperatures of -190 degrees carefully for cryostorage. Despite great care at least 5-10% of stored embryos are damaged or eggs lose their fertilisation potential. Some loss is unavoidable and it's largely overcome by freezing more tissue with a safety margin to allow for loss. Expenses including the cost of solutes needed to freeze cells, cryovials and liquid nitrogen which needs to be refilled on regular basis apart from manpower are definitely a factor.

Pregnancies achieved from cryopreserved cells account

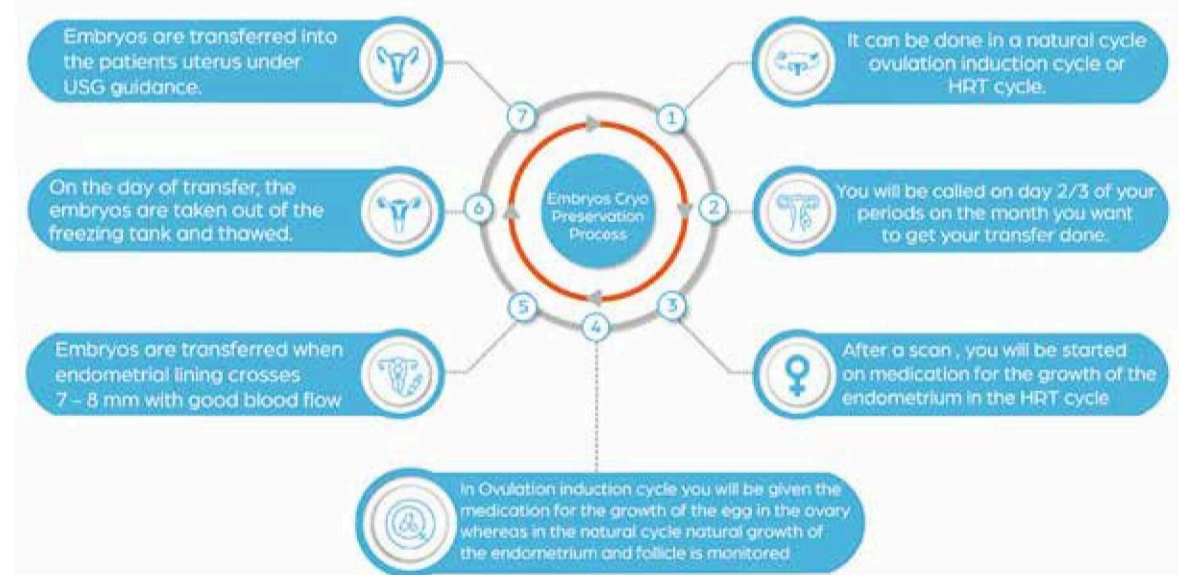
for almost 50% of IVF conceptions today. No significant issues have been found so far and there is no harm caused by the freezing technique, chemical solutes used to preserve cells, or the liquid nitrogen used. No viral or bacterial infections affect the tissue when due precautions are taken. IVF babies are under close followup in many countries where national registries are maintained, so the information is quite reassuring.

Cell freezing has come to occupy a pivotal place in current fertility practice. It is a unique solution to some problems that can't be overcome any other way. It is here to stay and as science advances, options that offer the women more convenience and better results at lower costs are expected to come up.

TO WHOM TO ADVISE



Procedure



Advantages



INFERTILITY DEPARTMENT		
DR. VANDANA HEGDE Clinical Director MS - OBG Post-Doctoral Fellowship in Reproductive Medicine-RGUHS Diploma in Reproductive Medicine & Embryology - Germany	DR. DURGA VYTILA Clinical Head - Miyapur MBBS, DGO Fellowship in Reproductive Medicine Diploma in IVF & Reproductive Medicine - Germany	DR. JASMINE SALKAR Consultant Reproductive Medicine DGO, DNB Fellowship in Reproductive Medicine - Spain
DR. SHALINI SINGH Consultant Reproductive Medicine MD - OBG (AIIMS) Fellowship in Reproductive Medicine - ICOG	DR. ARCHANA A NAGAONKAR Consultant Reproductive Medicine DGO, Diploma in IVF & Reproductive Medicine - Germany Fellowship in Assisted Reproductive Technology (ART)	DR. LAVANYA BOMMAKANTI Consultant Reproductive Medicine MS-OBG,MRCOG (UK) Fellowship Reproductive Medicine Fellowship in Laparoscopy
DR. SNEHA SHETTY Consultant Reproductive Medicine DGO, Fellowship in Minimal Access Surgery Fellowship in Reproductive medicine and IVF - London Fellowship in Assisted Reproductive Technology (ART)	DR. INDRANI MOGILI Consultant Reproductive Medicine DGO-Obstetrics & Gynaecologist Fellowship in Reproductive Medicine- ICOG Fellowship in Ultrasonography-IMA	
ANDROLOGY & EMBRYOLOGY DEPARTMENT		GENETICS DEPARTMENT
DR. AKASH AGARWAL Scientific Director & Chief Embryologist MBBS Certificate course in Embryology, Ahmedabad ESHRE Certified Clinical Embryologist		DR. SURBHI KAPOOR PhD - Human Genetics
DEPARTMENT OF LAPAROSCOPY		
DR. PRASHANT HEGDE Medical Director, MS - General & Laparoscopic Surgery, Fellowship in Surgical Gastroenterology - NIMS Diploma in Advanced Laparoscopy - strasbourg University - France		



HEGDE FERTILITY
 CONCEPTION. A MIRACLE. A SCIENCE
 Touching Hearts Of Millions Since 1977

For more details, contact:
 Branches:
 ● Hitec City, ● Malakpet, ● Miyapur, ● Suchitra
 Call: 8880 747474
 Know more: www.hegdefertility.com

For any further details about Times Health, kiran.tsm@timesgroup.com

DISCLAIMER: THE VIEWS/CONTENTS EXPRESSED/PRESENTED HEREIN, WITHIN THIS ADVERTORIAL, HEALTH PROMOTIONAL FEATURE, ARE THE SOLE AND EXCLUSIVE RESPONSIBILITY OF INDIVIDUAL CLIENTS/ THEIR AUTHORIZED REPRESENTATIVES, TO WHICH EFFECT, PUBLICATION HOUSE/ ITS REPRESENTATIVES/AFFILIATES ARE NOT RESPONSIBLE/LIABLE WHATSOEVER.