

# Frozen Embryo Transfers and Pregnancy

## A Guide for Couples

Professor Steve Robson

More than one-third of all embryos transferred during IVF treatments have been frozen and then thawed. In some cases, this will be because a number of healthy embryos were obtained during a stimulated (fresh) IVF treatment cycle. In other cases, a woman might have had a strong response to stimulation with the risk of developing hyperstimulation – in this case, embryos would be frozen to allow recovery. For couples having genetic testing of embryos, the embryos are frozen until the results of the test are available.

With modern 'snap freeze' – vitrification – methods of freezing embryos, the great of majority of embryos that have been frozen will thaw and be healthy. There has been discussion and suggestions that all embryos should be frozen as this could increase the pregnancy rate in IVF. However, a review of all of the available literature published recently found that this is not the case. For women who do not have hyperstimulation, or those having genetic testing of embryos, there is no improvement in pregnancy rates if all embryos are frozen and there is no fresh transfer.\*

\*Roque. Fresh versus elective frozen embryo transfer in IVF/ICSI cycles: a systematic review and meta-analysis of reproductive outcomes. *Human Reproduction Update* 2019; **25** (1): pages 2-14.



# How is a 'frozen embryo transfer cycle' done?

There are three common ways of undertaking a 'frozen embryo cycle':

- If a woman has a regular and predictable menstrual cycle, the hormones can be tested during the month and the day of ovulation identified. The embryo then is thawed and transferred five days later.
- If the woman's cycle is less predictable, medication (such as clomiphene or letrozole) can be given to bring about ovulation. Blood tests are used to identify the day of ovulation identified. The embryo then is thawed and transferred five days later.
- In some cases, hormones – oestrogen tablets and progesterone pessaries – are used to 'artificially' prepare the body for transfer of an embryo.

The question naturally arises – for woman with regular menstrual cycles are any of these ways of undertaking a frozen embryo transfer more likely to increase the chance of pregnancy? When all of the available evidence from scientific studies was analysed, a Cochrane review group found that there was no advantage or improvement in outcomes between any of the three possible methods.

## The use of progesterone

When a true 'natural cycle' frozen embryo transfer is performed, there is surprisingly little evidence to guide whether the use of progesterone pessaries after the transfer is of any benefit. When a group of researchers reviewed the available scientific evidence for using progesterone after frozen embryo transfer in a natural cycle, they could find not evidence that it increased the chance of pregnancy.\* Nor did it decrease the chance.

\*Mackens. Frozen embryo transfer: a review on the optimal endometrial preparation and timing, *Human Reproduction* 2017: **32** (11), Pages 2234–2242

## In summary...

In many IVF cycles, embryos are frozen (cryopreserved) for future thaw and transfer. This might be just because a number of embryos were created, or perhaps to avoid a woman becoming ill with hyperstimulation, or to allow genetic testing of the embryo.

For women who have a regular and predictable menstrual cycle, it is usual to identify the day of ovulation using blood tests, and to transfer the embryo five days later. There is no evidence that progesterone increases the chance of pregnancy, but it does not cause harm.

