

Freezing embryos



Fertility Facts

Good quality embryos can be frozen to give another chance of pregnancy. Now days most embryos are frozen at the blastocyst stage to optimise the chance of pregnancy.

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Most couples choose to freeze 'spare' embryos of good quality. The embryos are frozen, stored in liquid nitrogen and thawed later to give another chance of pregnancy.

At what stage to freeze embryos?

If you have embryo(s) transfer on day 2 or 3, we strongly suggest that 'spare' embryos are cultured to the blastocyst stage and then frozen if they are suitable. However, this is your decision, and you will be asked to specify the day of embryo freezing (if there are suitable embryos) on your consent form.

Growing embryos to the blastocyst stage usually means fewer embryos frozen compared to transfer and freezing on day 3. This is because some embryos that looked good on day 3 do not develop to blastocysts and therefore are not frozen. Several studies have shown that blastocyst transfer and blastocyst freezing gives the same overall pregnancy rate from a single egg collection cycle as day 3 transfer and day 3 freezing. However, the average time to pregnancy, the average number of thaw cycles per person, and the average cost is lower with blastocyst culture. Our experience supports this finding.

Freezing methods

Freezing involves adding a 'cryoprotectant', or antifreeze solution, to the embryos. The cryoprotectant draws water out of the cells so that ice crystals are less likely to form inside the cells when the temperature falls below freezing.

In slow freezing, the embryos are sealed in plastic straws, cooled at a controlled rate in a programmable freezing machine, and then stored in liquid nitrogen at -196°C .

An alternative process called vitrification uses much higher concentrations of cryoprotectants and extremely fast



cooling so that ice crystals do not form either inside or outside the embryo.

Embryo survival

Freezing and especially thawing can damage embryos, even in the presence of cryoprotectants. For embryos frozen between day 1 and day 3 of development about 70-80% survive sufficiently well to be used. The figure depends on the quality of the embryos and can vary between one woman and another.

Loss of one or two cells in an 8-cell embryo has little effect on the chance of pregnancy. Cell loss does not cause fetal abnormalities – and the chance of congenital abnormalities may even be a bit lower in children from thawed embryos than from IVF using fresh embryos.

Contact us

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Blastocysts, the stage embryos reach on day 5 or 6 of development, are more hardy with modern freezing techniques, so that 90-95% can be expected to survive.

Storage

The duration of storage does not seem to affect embryo survival or the chance of pregnancy once they are thawed. However, the Human Assisted Reproductive Technology (HART) Act sets a limit of ten years storage for sperm, eggs, embryos and reproductive tissue. It is possible to apply to extend storage beyond 10 years – there is a separate 'Fertility Facts' sheet on extended storage.

