



Ova Kill

The jury's out as to whether freezing eggs is a boon or a hidden threat to human fertility

“When defrosted, can we be sure such eggs have retained their original potency?”



ryopreservation – the practice of freezing living organisms and then restoring them to life at a later date – has long been associated with the more Frankenstein-like branches of science, arcane technological roads where a wrong turning can lead practitioners into nightmare scenarios. It’s a familiar trope for fans of science-fiction novels and movies, with glacier-trapped beings from other times and far-off worlds often wreaking havoc upon humanity once thoroughly thawed-out.

Of late, though, the practice has been somewhat rehabilitated. Gone, apparently, are its associations with defrosted fiends and, instead, it’s now every career woman’s perfect way of postponing pregnancy. Ever since 2012 – when the American College of Obstetricians and Gynecologists (ACOG) deemed that the process had passed the merely experimental stage – oocyte cryopreservation has allowed women across the world to freeze their eggs as insurance against future infertility.

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Given the relative infancy of the technique, however, how sure can we be that, when subsequently defrosted, these eggs will retain their original potency? Are many women, including Olivia Munn, the *X-Men* actress who went public about having resorted to the technique back in 2016, more likely to be storing up trouble than potential offspring?

With any new scientific innovation, there’s always the possibility that negative ramifications could take years or even generations to fully manifest. Thankfully, though, for the moment at least, all the research relating to oocyte cryopreservation indicates a positive outcome.

This should come as some relief to many of the businesses, such as Apple, Google and Facebook, that have positioned themselves firmly at the ‘right on’ end of the employment spectrum, chummily – and not at all creepily – offering female staff the chance to freeze their eggs for free. Even if their approach may not be immune from accusations that they are doing it more for commercial reasons than out of concern for their employees’ wellbeing, all the indications

are that frozen eggs can produce entirely healthy kids.

Overall, medical opinion – while couched in suitably cautious terms – seems broadly supportive of the technique. Endorsing it, while still leaving herself a little wriggle room, Dr Kate Devine, an infertility specialist and co-director of Washington-headquartered Shady Grove Fertility, says: “The data we have is quite reassuring with regard to the babies produced from frozen eggs. In particular, it’s a huge benefit to those women who otherwise might not be able to have a child from their own eggs.”

A more ringing endorsement comes courtesy of Dr Kevin Doody, a Texas-based fertility doctor and president of the Society for Assisted Reproductive Technology. Drawing on his own experience to date, he says: “I’ve been in the field for 30 years and, for 20 years, we had no means of preserving a woman’s fertility, so egg-freezing has proved a tremendous advance. In fact, it’s so amazing that 99% of US fertility clinics now offer the procedure.”

Although usually touted as an entirely new technique, egg-freezing has much in common with a number of earlier infertility

treatments, particularly in-vitro fertilisation (IVF). As with IVF, oocyte cryopreservation involves a woman's ovaries being hormonally stimulated prior to eggs being harvested. The extracted eggs are then preserved in specialised capsules – either through a slow-freeze or flash-freeze process – and stored in a cryopreservation facility.

At a later date, they are then thawed and fertilised, again using a similar process to IVF. Once this step has been completed, they are re-inserted into the would-be mother's womb. In another echo of IVF, even at this stage, success is far from guaranteed.

Despite the enthusiasm of its advocates, it's around this point that a positive outcome becomes more an article of faith than the subject of exhaustive scientific research. As the process was only formally approved for widespread use six years ago, there is still comparatively little data from which definitive conclusions can be drawn.

Most obviously, the majority of people who have undergone phase one of the procedure have not yet graduated to the second – defrosting – phase. There is also a question as to who exactly would be responsible for monitoring the success or otherwise of each application. At present, in the US, neither the Center for Disease Control and Prevention (CDC) nor the Society for Assisted Reproductive Technology (SART) has been mandated to maintain a watchful eye, with a similar lack of statistical oversight prevailing in most other countries.

It is this lack of quantifiable data that has made some medical professionals wary of recommending the process to all but those with a clear medical requirement. Typically, those that are steered in its direction are women faced with the risk of sterility from looming cancer treatments or those who may have to contend with similarly fertility-compromising surgical procedures.

As far as ethical guidelines go, the most strident to date was issued in 2013 by the American Society for Reproductive Medicine (ASRM) – an organisation representing approximately 500 fertility clinics in the US – which, together with SART, concluded: "There is not yet enough data to recommend oocyte cryopreservation for the sole purpose of circumventing reproductive ageing in healthy women."

To be fair, though, most of the concerns that do exist relate less to the efficacy of the technique and more to general issues regarding pregnancy among older women. The thinking here is that the wider adoption of egg-freezing as a way of postponing pregnancy in the general population would, undoubtedly, result in a surfeit of mothers in their 40s, 50s or even later. The oldest patient to successfully undergo IVF treatment, it should be remembered, was an Indian woman in her early 70s.

While the benefits of oocyte cryopreservation are, as yet, still languishing in the unproven file, there is a clear medical consensus as to the risks represented by pregnancy among post-35-year-olds. Not only is there an enhanced likelihood of high blood pressure, there are also issues relating to increased levels of chromosomal abnormalities and premature births.


There are also a number of studies that indicate a greater propensity for giving birth to a Down Syndrome child in the case of older mothers. Among those aged 25 or below who carry a child to full term, the number of Down Syndrome births is approximately one in 1,250. For mothers aged 40 or above, however, this rises to one in 100, a massive increase in statistical terms.

On the reassuring side, the little evidence there is indicates that the use of oocyte cryopreservation has no correlation with any increased likelihood of birth defects.

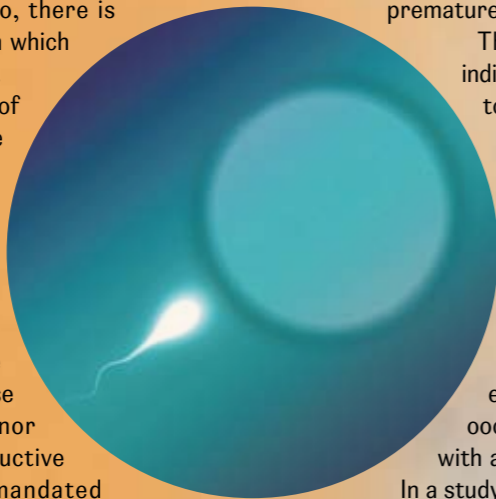
In a study of 900 babies born using the technique from 2009 onwards, the New York University School of Medicine concluded there was no sign of any "enhanced risk".

On the positive side, there is also the case of Emma Gibson. Although, technically, she won't have her first birthday until November 25 this year, she was actually "conceived" in 1992.

Despite the surely record-breaking quarter century interlude between her conception and her delivery, young Emma seems none the worse for her experience. Indeed, her father has gone on record as saying: "She's pretty much perfect given she spent all those years deep-frozen."

With Emma likely to be the poster girl for this potentially life-enhancing medical technology for many years to come, her progress will certainly be monitored by health professionals and the merely curious long into the future. Assuming "wreaking havoc upon humanity" isn't a feature of her post-teens CV, she may well prove the biggest thumbs-up oocyte cryopreservation could ever have hoped for. 

"An Indian woman in her 70s was the oldest patient to successfully undergo IVF treatment"



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Text: Hira Desai Photos: AFP