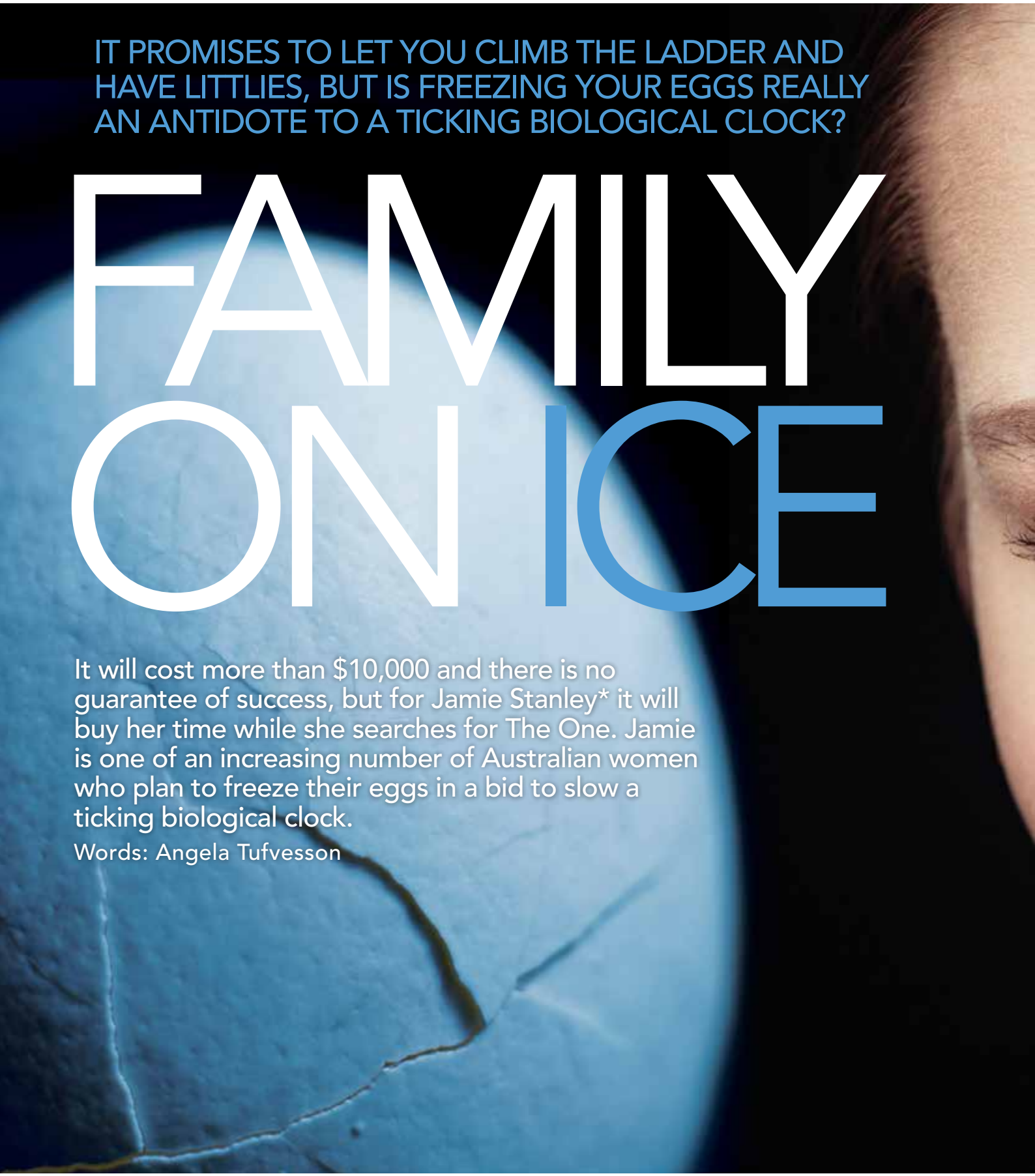
IT PROMISES TO LET YOU CLIMB THE LADDER AND HAVE LITTLIES, BUT IS FREEZING YOUR EGGS REALLY AN ANTIDOTE TO A TICKING BIOLOGICAL CLOCK?

FAMILY ON ICE



It will cost more than $10,000 and there is no guarantee of success, but for Jamie Stanley* it will buy her time while she searches for The One. Jamie is one of an increasing number of Australian women who plan to freeze their eggs in a bid to slow a ticking biological clock.

Words: Angela Tufvesson

She has a seven-year-old son from a previous relationship, but always imagined her family would one day consist of more than one child. With the big 4-0 less than 12 months away and no Mr Right in sight, Jamie Stanley* wants to preserve the chance of having another baby. Some day.

"I hope the outcome of freezing my eggs is that I can eventually find a life partner who would like to share the wonderful experience of having a child together and producing a sibling for my son," she says. "If this does not eventuate in the next five years or so, I will consider the option of having a donor sperm to continue growing my family."

While egg freezing is nothing new – the first frozen egg birth was reported in 1986 – the technology was only accepted into the medical mainstream late last year thanks to ground-breaking research. Which is a big deal with a capital B and D.

But with ethical dilemmas and medical confusion still at play, for many women in their forward-thinking 20s and tick-tock 30s, the question remains: should you freeze your eggs?

How it works

First things first. How does science take microscopic cells out of your body and store them until your relationship status catches up with your biology?

Chloe McIntosh* is pregnant with her first child after undergoing three cycles to harvest her eggs for freezing. She says the procedure went something like this: "I started on a course of hormones to stimulate egg production. This involved using a nasal spray twice a day and injecting myself every day in the stomach for two weeks. During this time, I was monitored by my doctor and had a couple of ultrasounds to monitor the eggs' maturity." Doesn't sound so bad, does it?

Professor Rob Norman, a leading reproductive specialist from Fertility SA, says the egg harvesting process mirrors IVF. "You need to go through the way an IVF cycle is conducted, so you have injections of hormones for 10 to 12 days, which stimulate the ovaries to produce lots of eggs.

"You then go as a day patient into hospital and have the eggs recovered. This is an operation performed through the vagina where a needle is put in and the eggs are sucked out. Next, the eggs are frozen."

According to Adnan Catakovic, chief scientist at City Fertility Centre, during the freezing process it's crucial to remove any water from the cells and replace it with a cryoprotectant – think tiny, tiny cryogenics – so ice crystals don't form when the cells are frozen. If this happens, the ice crystals will shatter and the cells will be destroyed.

For years, fertility doctors used a process now referred to as slow freezing. "Historically you would slowly remove the water, slowly replace it with cryoprotectants and freeze the water, slowly replace it with cryoprotectants and freeze the material over a two to four hour period," says Catakovic.

Now, most fertility clinics use an ultra-rapid freezing technique called vitrification. "Effectively, you take the material from 37 degrees, which is the temperature at which we store biological materials, through a cryoprotectant and rapidly freeze it down to minus 196 degrees within a second," says Catakovic. "It forms a glass-like structure around the biological material, hence the term vitrification. When you warm [the egg], it's preserved beautifully."

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Dawning of a new era

The development of the vitrification technique was a game changer. While slow

ETHICS SCHMETHICS?

WITH ALL THIS TALK OF ULTRA-RAPID FREEZING, HORMONE INJECTIONS AND FREEZING CELLS IN A LAB, PERHAPS YOU'RE WONDERING ABOUT THE ETHICS OF THIS EGG FREEZING CAPER.

MELISSA STEPHENS, A PSYCHOLOGIST FROM IVF AUSTRALIA, SAYS THE ETHICAL ISSUES ARE SIMILAR TO THOSE SURROUNDING IVF TECHNOLOGY.

"Women are making a choice, so there are not as many ethical issues as with donor eggs or donor sperm as it's a part of their own body."

PSYCHOLOGICALLY, IT'S IMPORTANT TO BE IN THE RIGHT HEAD SPACE WHEN YOU MAKE YOUR CHOICE. "THE MOST IMPORTANT THING TO REMEMBER IS THAT THERE ARE NO GUARANTEES – IT'S NOT A DEFINITE THING," SAYS STEPHENS.

PHOTOGRAPHY: THINKSTOCK

freezing yielded frozen egg survival rates of 30 to 40 per cent, Catakovic says his clinic is now disappointed with anything below 90 per cent.

"We used to need to freeze anywhere from 30 to 50 eggs just to achieve a single pregnancy. Now if we freeze 10 eggs we would expect to achieve several pregnancies from that," he says.

Vitrification is so successful that pregnancy rates using frozen eggs via vitrification are on par with fresh embryos used in IVF. Testament to this, a landmark 2012 review by the American Society for Reproductive Medicine (ASRM) prompted the organisation to lift the 'experimental' label from egg freezing after a decade of research.

"This a large step forward," says Catakovic. "It was a bit like the elephant in the room because up until the recent meeting in October last year, the ASRM had continued to deem egg freezing as experimental, but now they have deemed it to be an ethically viable treatment option."

The figures

Compared to IVF, egg freezing is a small player because up until last year it lacked the credibility of a mainstream medical procedure. But with the international stamp of approval, more and more women are expected to put their fertility on ice – until Mr Right comes along, their finances improve or their career progression plateaus.

And given that the average age of first-time motherhood continues to rise (now 29 years) and women aged 30 to 34 record the highest fertility rate of all age groups, it's logical to assume more of us will encounter fertility troubles in the coming decades.

For now, there are no records kept for the number of Australian women who have frozen their eggs, but anecdotal evidence suggests they have these things in common: they're single, younger than those seeking IVF, healthy and well educated.

Or, as in Chloe's case, they have frozen their eggs for medical reasons. "I found out through a blood test that my ovarian reserve was extremely low and it was recommended that I see a fertility specialist to discuss my options as soon as possible," says the 25-year-old. "Eight weeks after finding out this result, I saw an IVF doctor, who agreed that I should freeze my eggs."

Prof. Norman says the procedure is extremely common for women who have been diagnosed with cancer, as they are likely to lose most of their eggs during chemotherapy.

A reality check

So is this the bright, shiny solution for single women struggling to dull the tick of their biological clock? Not exactly. You see, fertility rates are heavily driven by the age of a woman's eggs. We know the chances of falling pregnant decline after 35, and the same goes for our eggs' chances of success in the defrosted state.

"For example, if you take a reasonably healthy 42-year-old and use 18-year-old eggs, they will have the pregnancy rates of an 18-year-old," says Catakovic. "If you put 42-year-old eggs in an 18-year-old, they'll have the pregnancy rates of a 42-year-old. The age of the egg really is a critical factor in fertility."

Prof. Norman says many women choose to freeze eggs in their late 30s or early 40s when their eggs are not of the same quality as when they're younger. "Many women are doing it too late – they should be doing it much earlier. The best age of fertility is the 20s, although I'm not advocating that's when women should freeze. But it's better to do it in your 20s than in your late 30s.

"If you're young, you have a good chance of getting pregnant from one IVF cycle. Once you get over 38, your chances probably drop to 30 to 40 per cent of the maximum and that will be reflected in frozen eggs as well."

But statistics aren't everything. On this measure, 39-year-old Jamie's chances of falling pregnant down the track appear slim, but she is still keen to recommend egg freezing to other women who aren't yet ready to have a family, because it allows a degree of control. Likewise, Chloe knows that if it wasn't for this procedure, she wouldn't be pregnant.

"It provides women with a sense of independence and security to know that they have eggs frozen for when they are ready to start a family," she says. "There is no point denying that there may be a problem – it's better to be proactive and seek out the treatment options available." ■

**Names have been changed.*

HOW MANY EGGS DO YOU HAVE LEFT?

Women are born with a finite number of eggs – about one to two million. This number falls dramatically before puberty and continues to decline until the age of 35 when it falls at an accelerated rate. By the time you reach menopause, there are hardly any left.

If you're keen to check on your numbers, the anti-mullerian hormone (AMH) blood test can help. Research suggests the concentration of this hormone in the blood is a good predictor of a woman's egg reserve. In conjunction with a specialised ultrasound, it gives the most accurate picture possible of a woman's future fertility. Amusingly, this combo is called the 'egg timer test' and typically costs about $65.

There's just one caveat – while the test can indicate how many eggs you have left, it doesn't measure the quality of those eggs. For a more detailed assessment, you'll need to make an appointment with a fertility specialist.