

Ovary freezing offers a drug-free way to tame menopause

Freezing an ovary and then having thin slices of it periodically put back in looks set to offer women a way to delay or reverse menopause



IT COULD be as revolutionary as the pill. Freezing an ovary and having thin slices of it periodically put back later in life looks set to offer women a way to delay or reverse menopause.

This should avoid symptoms without the need for hormone replacement therapy – something many women are reluctant to take because of its link with breast cancer.

The first steps have already been taken. The technique has restored fertility in women who have undergone medical treatment that triggers premature menopause (see [“Changing times”](#)). Some of these women say they want to continue having the ovary grafts to delay their natural menopause, once they reach that age. At least one fertility clinic, in the US, is offering ovary freezing to women who plan to use it for both fertility and menopause reasons.

Menopause happens because of falling levels of sex hormones such as oestrogen, which are normally produced by eggs as they ripen in the ovaries. Because women are born with all the eggs they are ever going to produce, and hundreds die with each menstrual cycle, they eventually run out of eggs that can pump out hormones.

But freezing one ovary while the eggs are still young and plentiful offers a way to stop the clock. A paper published last month in the journal *Human Reproduction* suggests that reimplanted 1-millimetre slices can

function for around two years (doi.org/982). As one ovary generates about 20 slices, a woman could in theory delay her menopause for decades by having them put back one at a time.

The data come from 41 women treated at several Danish fertility clinics. All had been through chemotherapy and had their ovaries frozen in case they wanted children. However, by the time they had recovered from chemo, a few no longer wanted children and had the grafts put back in solely to reverse their chemo-induced menopause, says [Claus Andersen](#) at Copenhagen University Hospital, who was involved in the work. Two of the women have so far had two or three grafts, restoring a normal menstrual cycle for more than 10 years.

Although the women have yet to reach the age of natural menopause – the oldest is 44 – the results provide evidence that the approach could work in older women who want to delay their menopause, says Andersen.

“We have shown that it works for 10 years and I would not be surprised if it lasts 30,” says Andersen, who [argues for ovarian grafts to be offered as a treatment for menopause](#). “Because of the cancer patients you could argue this is already happening.”

As well as carrying out the procedure for medical reasons, [Sherman Silber](#), head of the Infertility Center of St Louis in Missouri, has removed an ovary from 15 healthy women who want to delay having children, for example, for career reasons. Some in this group also plan to use their stored tissue to delay their menopause past the normal time.

Stop the clock

“It seems like the most brilliant solution,” says Jenny Remington-Hobbs, a doctor who had an ovary frozen before having treatment for multiple sclerosis. This triggered premature menopause but she didn’t want to go on HRT. “I don’t like the idea of being on medication unless I needed to be. This way I don’t have to experience bone loss [associated with menopause].”

“Having a beautiful young ovary in the freezer is a real gift. Having options is so liberating”

Although the flip side of delaying menopause is prolonging fertility, there are ways around this. While women who want a child can have the ovarian slice grafted onto their remaining ovary, those who don’t could have the tissue inserted under the skin of their arm. “A woman could come back whenever she stopped menstruating and have a new chip inserted,” says Andersen. It may even be possible to do this without continuing to have periods – endometrial ablation can be used to remove the lining of the womb.

While Silber and Andersen are keen to see the procedure more widely adopted, the technique has its critics. Delaying menopause this way would have disadvantages compared with HRT, where synthetic oestrogen is taken in tablet or patch form, says Michael von Wolff, of [FertiProtekt](#), a network of 100 European clinics offering ovary freezing for medical reasons. “With HRT you have the chance to modulate the dose, and you don’t need an operation.”

But HRT has [fallen out of favour](#) in recent years since trials suggested it raises a woman’s risk of breast cancer. Oestrogen is known to promote breast tumour growth and women who have a naturally later menopause – so are exposed to oestrogen for longer – do have a slightly higher risk of this cancer. But oestrogen’s benefits to bones and the heart mean later menopause prolongs life overall.

Andersen predicts ovary grafts will mimic the effects of a naturally late menopause more closely than HRT does, as they supply a woman’s own hormones.

But Pasquale Patrizio of Yale Fertility Center says young ovarian tissue reimplanted into a 50-year-old might start acting like older tissue because of its environment. “I’m not against this, but we do need more animal research,” he says.

Some people might go ahead anyway, as awareness grows thanks to the rising numbers of women who have an ovary frozen for medical reasons.

“Some women will find this an attractive option, so it should be a matter of choice,” says Hamish Wallace of the University of Edinburgh, UK.

Remington-Hobbs found her induced menopause the worst aspect of her treatments. “That was the thing that upset me the most,” she says. “The sweating was really challenging.”

She had some of her ovary slices reimplanted in 2012 and they restored her menstrual cycle. She now has a 1-year-old daughter, who was unplanned but very welcome. If the ovary slices stop working and her menopause returns, she has not yet decided whether she will have further grafts but she is grateful for the option. “Having a beautiful young ovary in the freezer is a real gift,” she says. “The truth is that having options is just so liberating.”

(Image: Patrick Mourral/Picture Tank)

Changing times

Women normally go through the menopause between the ages of 48 and 55, with 1 per cent experiencing it before 40.

Its effects vary from woman to woman but can range from inconvenient to life-disrupting. These may include hot flushes and night sweats, loss of libido, sleep problems and mood swings. These usually last for about four years.

In November, the UK’s official health advice body, the National Institute for Health and Care Excellence (NICE), [published its first guidelines](#) on menopause. It recommends HRT for hot flushes, night sweats and low mood.

This article appeared in print under the headline “Menopause? I think I’ll pass”

More on these topics:

- [fertility](#)
- [ovaries](#)

By **Clare Wilson**

Magazine issue [3054](#) published 2 January 2016