

New trigger for ovulation could make IVF safer

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Researchers have successfully used a new and potentially safer method to stimulate ovulation in women undergoing IVF treatment.

Twelve babies have been born after their mothers were given an injection of the [natural hormone](#) kisspeptin to make their eggs mature.

Doctors normally administer another hormone, hCG, for this purpose, but in some [women](#), there is a risk that this can overstimulate the ovaries, with potentially life-threatening consequences.

Scientists at Imperial College London and clinicians at Imperial College Healthcare NHS Trust tested the new method in 53 healthy volunteers at Hammersmith Hospital in London. The study, funded by the Medical Research Council, the National Institute for Health Research and the Wellcome Trust, is published today in the *Journal of Clinical Investigation*.

One in six couples in the UK experiences infertility, and 48,147 women underwent IVF treatment in 2011.

Ovarian hyperstimulation syndrome (OHSS) affects around a third of IVF patients in a mild form, causing symptoms such as nausea and vomiting. Less than 10 per cent of patients experience moderate or severe OHSS, which can cause kidney failure.

Professor Waljit Dhillon, from the Department of Medicine at Imperial

College London, who led the study, said: "OHSS is a major medical problem. It can be fatal in severe cases and it occurs in women undergoing IVF treatment who are otherwise very healthy. We really need more effective natural triggers for egg maturation during IVF treatment, and the results of this trial are very promising."

Kisspeptin is a naturally occurring hormone that stimulates the release of other reproductive hormones inside the body. Unlike hCG, which remains in the blood for a long time after an injection, kisspeptin is broken down more quickly, meaning the risk of overstimulation is lower.

The women in the study had a single injection of kisspeptin to induce ovulation. Mature eggs developed in 51 out of 53 participants. Forty-nine women had one or two fertilised embryos transferred to the uterus, and 12 became pregnant, which is a good outcome compared to standard conventional IVF therapy.

The researchers will now carry out a second study in women with polycystic ovary syndrome, who have the highest risk of OHSS.

"Our study has shown that kisspeptin can be used as a physiological trigger for egg maturation in IVF therapy," said Professor Dhillon. "It's been a joy to see 12 healthy babies born using this approach. We will now be doing more studies to test whether kisspeptin reduces the risk of OHSS in women who are most prone to developing it, with a view to improving the safety of IVF therapy."

Alison and Richard Harper had a baby boy, Owen, in October 2013 after taking part in the trial in January.

"We took part because we wanted to pay it forward in return for the people who made it possible for us to have a child through IVF," Alison

said.

"I went through several cycles of IVF previously but the one in the trial was the least uncomfortable – it was less painful and I felt less swollen. The staff we dealt with were incredible."

More information: *J Clin Invest.* [DOI: 10.1172/JCI75730](https://doi.org/10.1172/JCI75730).

Provided by Imperial College London

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