

IVF revolution that signals end of the 'test tube' baby era...by allowing fertilisation to occur inside a woman's body

- Development means the crucial first stage of embryo development can take place in the natural surroundings of the womb rather than in the laboratory
- The cutting-edge process involves inserting a device smaller than a matchstick, containing a mixture of sperm and eggs, into woman's body
- Experts say it gives greater biological involvement in the creation of their children to women

By [JO MACFARLANE FOR THE MAIL ON SUNDAY](#)

PUBLISHED: 22:00 GMT, 28 November 2015 | **UPDATED:** 23:51 GMT, 28 November 2015

An IVF breakthrough could signal the end of the 'test tube baby' by allowing fertilisation to occur inside a woman's body for the first time.

The development, to be offered within weeks to British couples having trouble conceiving, means the crucial first stage of embryo development can take place in the natural surroundings of the womb rather than in the laboratory – just as in normal conception.

The cutting-edge process involves inserting a device smaller than a matchstick, containing a mixture of sperm and eggs, into the woman's body. It is removed after 24 hours to allow doctors to assess which of the resulting embryos are healthy enough to be implanted in the hope of achieving a successful pregnancy.



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Traditional method: An embryo in a lab culture is prepared for transfer to the womb

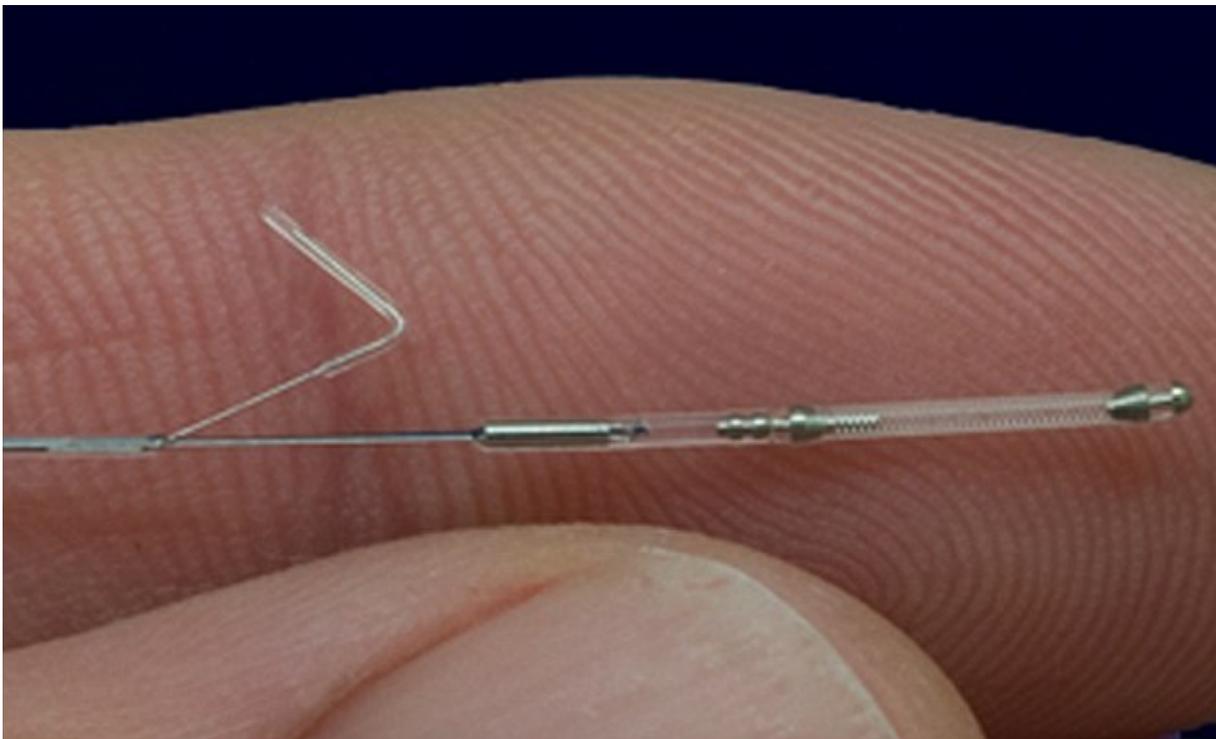
Leading fertility experts say it offers women an important psychological benefit as it gives them greater biological involvement in the creation of their children. Doctors believe it may also boost IVF success rates and the long-term health of the children.

The technique, which has been used successfully in some European clinics, was formally approved by the fertility regulator, the Human Fertilisation and Embryology Authority (HFEA), in September.

It will be available at the Complete Fertility clinic, based at University Hospital Southampton NHS Foundation Trust, from the New Year and will cost a few hundred pounds more than the £3,800 cost of standard IVF. Clinic director Nicholas Macklon, a professor of obstetrics and gynaecology at the University of Southampton, said: 'The advantage is that the early embryo is being exposed to the same natural chemical environment of a spontaneous pregnancy.'

'We know IVF babies are slightly different – the birth weight is slightly lower. Although that's not significant for early survival, we know it's linked to long-term health.'

'There's increasing evidence this is to do with the culture medium we use in the laboratory – so if we can keep them for as long as possible inside the uterus, not only do we expose them to all the goodies only mum can provide but we save them from being exposed to a synthetic environment at a very sensitive stage of early development.'



More natural: Experts say the new method will give women greater biological involvement in the creation of their children

During IVF, an egg is removed from the woman's ovaries and fertilised with sperm in a laboratory. The fertilised embryo is then returned to the woman's womb after six days to grow and develop.

IVF involves six main stages: first the menstrual cycle is suppressed with medication, then other drugs are used to encourage the ovaries to produce more eggs than usual. Ultrasound scans check the development of the eggs, and further medication is used to help them mature.

To 'harvest' the eggs, a needle is inserted into the ovaries, via the vagina. Traditionally, the eggs are then mixed with the sperm for a few days 'in vitro' – in a lab dish – to allow them to be fertilised before one or two are placed into the womb.

The new process involves mixing the sperm and eggs and placing them instead in the Anecova AneVivo device, which is about 1cm long and 1mm wide. This is inserted painlessly without an anaesthetic. Couples return home from the clinic while fertilisation takes place.

One of the first patients to use the device in Europe, Leila Rampino, 39, said she had found it 'frustrating' to have to leave her embryos in the laboratory. So when standard IVF failed, she agreed to try the Anecova device at the Clinique des Grangettes in Geneva. She gave birth to daughter Yasmine in 2010.

She said: 'I instinctively knew this was the right solution. As a mother, to go home with my embryos allowed me to play an active role in those important early moments.'

'My husband, when we arrived home, put his hand on my belly and said, 'This time they are not in the laboratory – they are in you.' It was a wonderful feeling and we are very happy to finally have a baby.'

The HFEA agreed at a meeting last month that there was no evidence the technique was unsafe. However, it cautioned that there was also no evidence so far it was more effective than standard IVF and might 'add an unnecessary cost to patients'.