

## These 4 new techniques are spearheading future of fertility treatments

Here are four of the new reproductive treatments that scientists say could be just a few years away from the clinic.

### 1. Lab-grown eggs and sperm

Scientists are making significant advances in the ability to grow eggs and sperm in the laboratory. The ultimate goal is to take adult skin cells, transform them into “induced pluripotent stem cells” that have the ability to turn into other cell types and then, using a cocktail of chemicals, coax these cells along the developmental pathway to becoming either eggs or sperm cells.

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### 2. Human genome editing

Genome editing is a method for making specific changes to the DNA of a cell or organism. Gene therapy, where new genes are added or faulty genes disabled in specific cells, is already used in medicine to treat genetic diseases.

Changing the DNA of an embryo goes a step further because the genetic changes would occur in every cell in the body, meaning the edits would be passed on to subsequent generations.

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### 3. Three-person baby IVF

The last big amendment to UK fertility law came in 2015 when [MPs voted](#) for an amendment to allow a technique called mitochondrial transfer, designed to eliminate certain incurable genetic diseases. The technique involves swapping the egg’s mitochondrial DNA (a tiny fraction of the total DNA, which sits outside the egg’s nucleus) with that of a healthy donor.

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### 4. Synthetic embryos

UK fertility laws regulate the use of embryos in research, and place a 14-day limit on how far into development embryos can be cultivated in the lab. However, the HFEA has no remit over so-called synthetic embryos.

[This month, two teams](#) of scientists report creating these embryo-like structures, featuring a beating heart

and primitive brain, from mouse cells.

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