

## A Look in the Future: Parthenogenotes Men may have babies using skin cells

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A new experiment defies nature and might one day let two males have babies with each other. The new study overthrows the idea that it is only possible to produce children using an egg, and fertilising it with sperm. Instead, the research suggests that it might be possible to conceive children using skin cells.

In a new experiment, scientists have shown that it would be possible to conceive in mice using other kinds of cells. The study showed that it was possible to produce healthy offspring while bypassing the normal route of fertilising an egg with sperm. Thus, it would be possible to fuse sperm with ordinary cells like skin or other tissue, without using cloning, to produce babies.

As such, it could lead the way to human reproduction that completely cuts the female part of the process.

Scientists have called such a scenario "speculative and fanciful", but haven't ruled it out. If that happened, it would allow gay men to have children with each other. And it would allow a man to fertilise his own cells with his own sperm, producing offspring that would use only his genes and those inherited from his parents.

But the finding also suggests that women whose fertility has been wiped out by cancer drugs or other treatments can still have their own children, using another of their cells. At the moment, people in that situation can only have children of their own if their eggs were frozen before treatment.

And the same treatment could allow for the preservation of endangered species, since it allows scientists to get around the often complicated and difficult process of collecting eggs from those that they wish to help breed. Instead, they could just use sperm and somatic cells.

"Our work challenges the dogma, held since early embryologists first observed mammalian eggs around 1827 and observed fertilisation 50 years later, that only a egg cell fertilised with a sperm cell can result in live mammalian birth," said lead scientist Tony Perry, a molecular embryologist from the University of Bath, England.

But Perry also made it clear the tests on mice only prove that the technique would work in principle.

The experiment used "parthenogenote" mouse embryos—all-female embryos made without any sperm, created by tricking an egg into developing as if it was fertilised. Usually, those embryos die after a few days because they are not properly programmed. But in the new studies, scientists found

that they could inject them with sperm and transform them into normal embryos.

The study produced 30 mouse pups with a success rate of 24%.

That finding matters, because parthenogenotes are similar to other ordinary cells, like skin cells. Both are mitotic, and if an offspring can be produced from one then it should be possible to create them from the other.

"The practical applications of this as the technology stands at the moment are not very broad. These embryos are mitotic cells—mitotic cells are the type of cell that almost every dividing cell in our body is. And therefore potentially one day we might be able to extend what we've sown in these mitotic cells to other mitotic cells," Perry said.

(From *The Independent*).

### Top UK Botanist visits Nilgiris

A botanist at the Royal Botanic Garden at Edinburgh, Henry Noltie, who was on a visit to the Nilgiris, spoke of the tremendous threats faced by the forests in the Nilgiris and also of the destructive role played by invasive species, such as the omnipresent Eucalyptus trees that dot many parts of the landscape in the district.

Speaking to *The Hindu*, Mr. Noltie, who has been studying Indian plant species over the last 10 years, said that there needed to be better awareness among the forest departments in India about the importance of native species of plants and trees, and how their survival is linked to the well-being of the animals in the Nilgiris.

"Coincidentally, an Indian plant species, known as the Himalayan Balsam, has become an invasive species in many parts in UK," he said.

He added that in India too, afforestation practises should be geared towards the introduction of local plant species. "Eucalyptus was initially introduced for fuel as they were fast-growing. Afforestation in places where such trees are cut down should focus on reintroducing local shola trees," he said.

Mr. Noltie also said that botanical gardens in India needed to play a greater role in raising awareness among the public about the importance of native species as well.

"There needs to be more work to be done to make people aware of local plant species," he said.