1. **THOUGHTFULLY PROVIDE NOTATION ON THIS ARTICLE TO SHOW EVIDENCE OF YOUR THINKING THROUGHOUT YOUR READING (text-to-self, text-to-text, text-to-world, and vocab strategies).**
2. **RESPOND TO THE “Food for Thought” SECTION BELOW THE ARTICLE.**

All sperm, no eggs: Motherless babies on the way, say scientists

[Sarah Knapton in London, The Telegraph](http://news.nationalpost.com/author/the-telegraph) | September 15, 2016 12:37 PM ET

Motherless babies created from skin cells could be on the horizon after scientists discovered a method of creating offspring without the need for a female egg.

The landmark experiment on mice by the University of Bath rewrites 200 years of biology teaching and could pave the way for a baby to be born from the DNA of two men.

It was always thought that only a female egg could prompt the changes in a sperm required to make a baby, because an egg forms from a special kind of cell division in which just half the number of chromosomes are carried over.

Sperm cells form in the same way, so that when a sperm and egg meet they form a full genetic quota, with half of the DNA coming from the mother and half from the father.

Scientists have shown embryos could be created from cells that carry all their chromosomes, which means that, in theory, any cell in the human body could be fertilized by a sperm.

Three generations of mice have already been created using the technique and are fit and healthy, and now researchers are planning to test the theory using skin cells.

Tony Perry, a molecular embryologist, and senior author of the study said: “Some people say, ‘start the day with an egg’, but what this paper says is that you don’t necessarily have to start development with one. It has been thought only an egg cell was capable of reprogramming sperm to allow embryonic development to take place.

“Our work challenges that dogma, held since early embryologists first observed mammalian eggs around 1827 and observed fertilization 50 years later, that only an egg cell fertilized with a sperm cell can result in a live mammalian birth. Imagine that you could take skin cells and make embryos from them. This would have all kinds of utility.”

The technique raises the possibility that gay men, for instance, could have a child whose DNA was half of each of the couple, although a woman would still need to act as a surrogate to carry the baby. A man could even fertilize his own cells to produce offspring containing a mixture of genes inherited from him and his parents.

More realistically, the technique could allow women whose fertility has been wiped out by cancer drugs or radiotherapy to have their own children. It may also help women to continue having children later in life. For the experiments, scientists “tricked” an egg into developing into an embryo using chemicals which make the egg think it has been fertilized.

Crucially the cells in an embryo copy themselves when they divide, and so mirror closely most other cells in the body, such as skin cells.

When scientists injected the embryos with sperm, they grew into mice which went on to produce their own litters. Although the researchers began with an egg cell, they do not believe it is required to start the same development. In theory, the technique should work with any cell in the body as long as half the chromosomes are removed first to allow them to fuse with the sperm’s chromosomes.

Prof Robin Lovell-Badge, of The Francis Crick Institute, said it was “a very interesting paper, and a technical tour de force.”

**FOOD FOR THOUGHT:**

1. **The article highlights some potential benefits of this technique. Please indicate some of them in the space below, AND ADD ANY OTHERS THAT YOU CAN THINK OF. (Analyzing/Evaluating)**
2. **Now, use the space below to note potential negative aspects of this technique. Is there potential to go wrong? Write any idea that comes to mind. (Analyzing/Evaluating)**
3. **For this final item, outweigh the merits of #1 over #2 – what do YOU think? Are you more in support or against the idea? Explain clearly, please, in your response. (Evaluating)**