

# Unbelievable: UK Scientists Altering DNA of Human Embryos

Despite widespread objection, U.K. scientists have been given permission by The Human Fertilisation and Embryology Authority (HFEA) to genetically modify human embryos within the first week of life.

Earlier this year, Dr Kathy Niakan applied to the HFEA for **permission to conduct research** that, she claims, will dramatically improve in vitro fertilization (IVF) success rates.

Although genetic modification of human embryos, which involves manipulation of DNA, is legal in the U.K., scientists need a license to perform it.

The HFEA has granted permission for the research to take place for the first time in the U.K. at the Francis Crick Institute in London, with experiments beginning within the next few months.

Christian Concern has joined scientists and leading medical experts in speaking out against this type of experimentation, with concerns that this could eventually lead to 'designer babies'.

Due to its numerous ethical issues, this practice is banned in many countries. The experiments will take place in the first seven days of a human embryo's life.

## Single gene editing

The new technique, Crispr-Cas9 (CRISPR), is thought to be able to edit single genes, by making the 'faulty' gene inactive or replacing it with a healthy copy. This would alter the DNA of the embryo.

Scientists claim that CRISPR will help to explain causes of miscarriage and improve IVF success rates.

During the first seven days, a fertilised egg becomes a structure called a blastocyst, which contains 200-300 cells. At this very early stage, some cells have already been designed to perform specific tasks; for example, going on to form the placenta and the yolk sac.

The week-old human embryos, after being experimented on, would then be destroyed.

Although it will be illegal for scientists to implant the embryo into the woman, there are concerns that initial experimentation will lead to this in future.

In addition to the concern that this practice may open the door to 'designer babies', the consequences of permanently altering DNA, which would be passed down to future generations, are not known.

## **Sanctity of life**

Christian Concern's chief executive, Andrea Williams, said that this decision has crossed a "dangerous" ethical line, disregarding the preciousness of life.

*"To experiment on and then destroy human embryos – lives at their beginning – completely undermines the truth that life is sacred,"* she said.

*"The Bible reveals to us our value, as it shows us that we are known before we are formed, and that we are created with intentionality and purpose. This kind of experimentation, which involves not only the manipulation of human life but its destruction, disregards that beautiful truth."*

*"In making this decision, the HFEA has crossed a dangerous line, with no knowledge of the future consequences."*

## Claims that technique will improve IVF 'misleading'

Writing on the Christian Medical Fellowship (CMF) blog, Dr Peter Saunders has also **criticised the research**, calling into question the positive impact that Dr Niakan claims it will have.

Explaining why she wanted to experiment on human embryos, Dr Kathy Niakan said:

*"We would really like to understand the genes needed for a human embryo to develop successfully into a healthy baby.*

*"Miscarriages and infertility are extremely common, but they're not very well understood", she went on, arguing that the technique could "could really lead to improvements in infertility treatment".*

Dr Peter Saunders, however, said that this claim must not be taken at face value:

*"This claim, which has been propagated uncritically by the world's media, is highly misleading, and lacking virtually any evidence base."*

He explained that the research will not be effective in improving fertility, as the gene editing tool cannot alter the abnormalities that cause miscarriage or IVF failure.

*"The fact is that we already have quite a good understanding of what causes IVF failure and miscarriage and it has very little to do with anything that can fixed by Crispr-Cas9."*

He continued:

*"Only abnormalities in single genes can be readily fixed with gene editing of the sort that the Crick Institute is proposing. Gene editing tools like Crispr-Cas9 do not fix chromosomal abnormalities," he said.*

## **‘Satisfying scientific curiosity’**

The research, he concluded, “*seems to be more about satisfying scientific curiosity about how genes work in the normal development of the human embryo*”, pointing to the examples of three-parent embryos and animal-human hybrids as evidence that scientists have made “*rash*” promises to get approval for controversial treatment.

Read more about genetic modification and other human embryo research in **Christian Concern’s Bioethics booklet**.