Genetically modified humans? Here's why they already exist

It felt as if humanity had crossed an important line: In China, a scientist named He Jiankui announced on Monday [November 26] that twins had been born in November with a gene that he had edited when they were embryos.

... A few genetically modified people already walk among us.

In the mid-1990s, fertility doctors in New Jersey ... suspected that some women struggled to become pregnant because of defective material in their eggs.

To rejuvenate them, the doctors drew off some of the jellylike filling in eggs donated by healthy women and injected it into the eggs of their patients before performing in vitro fertilization.

... Only after their patients started having healthy children did they share the news that it seemed to work. ...

But other people reacted with shock rather than excitement. Our cells generate fuel in miniature factories called mitochondria. And each mitochondrion carries its own small set of genes. The New Jersey fertility doctors might have created children with the DNA of three people, not two.

It turned out that this was indeed the case. The doctors discovered that some of the children carried mitochondrial DNA from the donors in addition to their parents. In their 2001 report on this discovery, they called it "the first case of human germ-line genetic modification resulting in normal healthy children."

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