CRISPR gene editing to correct harmful mutations could in rare cases wreak havoc on our chromosomes, study claims

[L]arge-scale damage was found in a study that analyzed human embryos that had been edited with CRISPR-Cas9. The study, from Columbia University Irving Medical Center, showed that applying CRISPR-Cas9 to repair a blindness-causing gene early in the development of a human embryo often eliminates an entire chromosome or a large section of it.
Details of this work appeared recently in the journal Cell, in an article titled, "Allele-Specific Chromosome Removal after Cas9 Cleavage in Human Embryos." The article describes how Columbia University scientists led by Dieter Egli, PhD, tested CRISPR-Cas9 genome editing's effects on early-stage human embryos carrying a mutation in a gene called EYS (eyes shut homolog), which causes hereditary blindness.

He Jiankui's "CRISPR babies" announcement occurred after a 2017 study that had reported the successful correction of a heart disease–causing mutation in normal human embryos using CRISPR. This study, however, may have been misinterpreted.

According to the new study by Egli and colleagues, the 2017 study may indicate that instead of being corrected, the chromosome carrying the heart disease–causing mutation may have been lost altogether.

"If our results had been known two years ago, I doubt that anyone would have gone ahead with an attempt to use CRISPR to edit a gene in a human embryo in the clinic," Egli asserted.

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