

Is embryo gene editing a technology we can afford — ethically and morally? Hank Greely address the future in ‘CRISPR People’

[su_panel color="#3A3A3A" border="1px solid #3A3A3A" radius="2? text_align="left"]**The following is an excerpt from Hank Greely’s book [CRISPR People](#).**[/su_panel]

I see no inherent or unmanageable ethical barriers to human germline genome editing. On the other hand, I see very few good uses for it. That is mainly because other technologies can attain almost all the important hoped-for benefits of human germline genome editing, often with lower risk.

...

If a couple wants to avoid having a child with a nasty Mendelian genetic disease or condition, they could, in a decade or more, use CRISPR or other gene-editing tools to change an embryo’s variants into a safer form or, today, they could use [preimplantation genetic diagnosis] to find out which embryos carry, or do not carry, the dangerous variants.

...

Even for dominant conditions, if one looks at 10 embryos, the chance that all 10 will have the “bad” version is one in 1,024. If you have 20 embryos to examine, it becomes one in 1,048,576.

So, why take the new, riskier — and, to many people, disconcerting — path of gene editing rather than just selecting embryos?

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Right now, there is no non-Mendelian condition for which we are confident we know the exact set of genes involved. Neither do we know the negative and positive effects of different combinations of genetic variants. Until these uncertainties are adequately resolved, human germline genome editing, though in theory better than PGD, will not be safe or effective enough for use.

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