

Shine Brighter Première

FlashFile 16 Better babies?

Document 2, Vidéo p.141 – Extrait de *Interesting Engineering*, 2022.

Voiceover: Have you ever wanted to change the color of your eyes from brown to blue or green? That may not just be a dream anymore! Because science has almost caught up with our imagination. According to research on genome editing, it may be possible to customize human DNA. Genome editing has come a long way. But there are many discussions around the scientific society on whether it is ethical or a possible disaster. Scientists are arguing about where we should draw the line. In the science-fiction movie *Gattaca*, genetic engineering was at such an advanced level that babies were designed long before they were born. As a result, there was a two-tier society - known as In-Valids - who were born by traditional pregnancy methods and Valids, who had their genetic composition perfected by their parents when they were only an embryo. And today, in real life, this kind of scenario is just around the corner. Employing the gene-editing technique on human embryos may make it feasible to make babies resistant to certain hereditary diseases and disorders long before they are born. However, it generates far too many moral and ethical discussions. This may be an ideal opportunity for families who have watched their children suffer from dreadful genetic disorders. As suggested in a 2019 study, the hazards connected with genetic design have decreased to the point where people now demand genetic enhancement of newborns at the embryonic stage. Dr Kevin Smith – the study's author and a bioethicist – believes that genome editing will

eventually gain moral acceptance. According to proponents of gene editing, manipulating the embryo's DNA is the only way to prevent genetic disorders. Families who have a history of cancer, dementia or cardiovascular disease might use this method to protect their children before they are born.

Is editing the DNA of an unborn child ethical or unethical?, *Interesting Engineering*,
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Document 3, Vidéo p. 141 – Extrait de *Open to Debate*, 2022.

Voiceover: Picture this: a genetic disease runs in your family. Your doctor warns you that if you try to have a child, that child is likely to inherit the disease. But new gene editing technology could change your child's fate. Critics say this technology will exacerbate inequality: pressure everyone into editing their children to stay competitive and will meddle with the most basic aspect of our humanity – our DNA. Others say with safeguards against abuse this technology could benefit us in a host of ways. Should we use gene editing to make better babies?

John Donvan: Thanks everybody for joining us and today we are examining the science and the ethics of a new reality: the fact that we humans now have the capability, and perhaps we should call it the power, to change our DNA. All because of stunning and stunningly fast developments in the field of gene editing. Yes, there are rules and regulations being written about this all of the time to try to catch up to where this science keeps going – and different countries are doing that in different ways – but the core issue surrounding the possibilities presented by gene editing comes down to this: just because we can, does that mean we should? That is the debate we're launching right now. Thanks very much George Church. Our next speaker will be speaking against the resolution. Here is Marcy Darnovsky. Marcy, the screen is yours.

Marcy Darnovsky: Thank you and thanks to Intelligence Square for organising this important conversation. So, to be clear, I'm going to be talking about reproductive or heritable gene editing which I think is what most people understand when you're talking about making better babies and which is what the policy debate that's been going on is really about. So, my strong belief is that using gene editing this way in an

attempt to make so-called better babies would be both wrong and dangerous. It would be wildly unsafe for those babies certainly; that's true now and probably always. And it would have the terrible effect of exacerbating our already horrendous social and economic inequalities. In fact, it would throw open the doors to new kinds of social injustice. And on top of that, heritable or reproductive gene editing isn't needed for any medical reason. That's the justification that's typically given but it's weak at best. Let's take a look at that: say that you have a harmful gene variant and you want to make sure your children don't have the disease that it causes. Here's the thing: you can already do that and you don't have to muck around in your future children's DNA to accomplish it. In fact, everyone with a disease-causing gene can have children unaffected by it by using donated eggs or sperm. And very nearly everyone in that situation can have unaffected children who are also genetically fully related to both members of a heterosexual couple by using a safe and established embryo screening and selection technique. Now it's important to say that embryo selection isn't itself ethics-free. It does raise thorny questions about what kind of people we'll welcome into our world? But using gene editing to create future children and future generations would amplify these concerns many times over. And would carry additional grave social risks and safety risks.

Should We Use Gene Editing to Make Better Babies?, *Open to Debate*, 2022.