

Designer babies- has genetic engineering gone too far?



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The colloquial term “ designer baby” refers to a baby whose genetic makeup has been artificially selected by genetic engineering combined with in vitro fertilization to ensure the presence or absence of particular genes or characteristics. (1) The process of creating a “ designer baby” is often questioned mostly because of its lack of agreement by experts on a moral platform. Embryo screening involves a process called pre-implantation genetic diagnosis (PGD). Genetic engineering of babies can change possible traits such as gender, appearance, intelligence and disease. In-vitro fertilization is used to create embryos that are then grown to the eight-cell stage, when one or two cells are removed. Scientists then examine the DNA of these cells for defects, and only normal embryos are replaced in the womb (3). In this essay I will discuss and include points on whether or not scientists are interfering with nature, safety issues around creating designer babies, the superiority of designer versus non designer babies and whether the possible life saving benefits of designer babies outweigh these other issues. My opinion is that the negatives far outweigh the positives; however I will lay the foundation for both sides so that I may leave the reader to reach their own conclusions.

Adam Nash, born in 2000, was the world’s first known designer baby. This was hailed as not just a medical innovation, but one with a definitively life-saving purpose. If Adam had been created naturally he would have inherited his sister’s Fanconi’s anaemia. She was saved from the disease, as after his birth, blood cells from his umbilical cord were transplanted into her body. (2) Adam’s birth even though it seemed artificial without question had served a vital purpose. Though there are certainly some positives that can be

obtained from the use of genetic engineering used on unborn babies, it is now heavily debated whether parents have the "right" reasons to genetically modify their baby.

One of the main issues with genetic engineering is that scientists could be perceived as interfering with nature and in effect trying to play 'God', by cheating him out of his chance to decide whether, for example, we are blonde or dark haired or if we have blue or bright green eyes and ultimately whether indeed it is right to do so in the first place. If designer babies became prevalent, a potential social problem could be a new rivalry between designer and non-designer babies. This could create a hostile environment where genetically engineered children could somehow feel superior over non-designer children. This could become a new social problem akin to existing and troubling ongoing prevalent race issues within our society. Scientists do not yet know absolutely everything about the way that the human body functions works, therefore how can they possibly understand the ramifications of slight changes made at the smallest level? They may manage to wipe out one disease and without intent to harm introduce something even more dangerous?

My view is that it would seem unfair for the baby to be treated like a tool instead of a human, as this could potentially violate human rights. The experience of Adam Nash in saving his sister was relatively non-invasive experience as only the blood cells from his umbilical cord were used.

However in other cases where bone transplant is the only available option, the providing child will undergo painful invasive treatment. How can

someone as fragile as any human being be fairly treated in such a cruel

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manner? Genetic modification of the DNA in human embryos would not only affect the individual but their children and their children's children and so on down the generations. Advocates argue that it could not only halt the inheritance of genetic diseases that run in families, but it could also pass on unforeseen medical problems that the procedures may cause.

At first it may seem that the negatives of genetic engineering may outweigh the positives, but if one looks closely, a number of benefits that can be achieved by scientists wishing to study and advance this study. There is the potential to live longer because of the advances of modern medical science and genetic engineering. The main aim of technologies that are used as gene editing is the ability to precisely control changes to very specific areas of the genome giving such technologies a powerful ability. There are around 7.9 million children each year are born with a serious birth defect and the unlocking of gene editing could be for some the only way to fight genetic disease and be a life saving option. (4) One could suggest that if these errors could be safely corrected at the embryonic stage then maybe there would be hope to virtually remove this burden of disease. Embryos that would otherwise be destroyed could advance greatly through gene editing techniques.

For example the gene which causes children to develop normally for six months and then become progressively deaf, blind, unable to swallow, and paralytic, before dying at four (Tay-Sachs disease) (5) it could be argued that nothing would be lost by can be lost by editing this gene out of the human lineage. Similarly parents who have Huntington's disease carry a 50% chance of passing that gene down to their children (6) and, even if they do <https://assignbuster.com/designer-babies-has-genetic-engineering-gone-too-far/>

not, they are likely to be carriers of the disease. It would be very difficult to stop people from having children if they suffer from a disease like this, therefore genetic engineering can help to ensure that their children live long and healthy lives.

The modification and precise editing of human embryo can be seen by many Scientists taboo since they feel it crosses an ethical line . Some state that no matter what genes are targetted, the key risk in crossing the line would be unpredictable consequences, and any interference with our innate genome would be dangerous, chaotic and uncontrollable. Even the mere dipping our toes in the gene pool will cause large ripples and thus it would be better not to dip at all. But the capability is becoming ever more likely. Scientists at Sun Yat-sen University in China have recently developed a host of genome editing procedures used as a first study of its kind to modify the genes of a human embryo, (7). However even though these procedures on the face of it seem to be very exact, simple to use and powerful questions on how safe they are, how they should be used are just not clear enough.

In conclusion the impact on society is hard to predict, but several ethical questions certainly arise. The huge cost of the procedure means that few families probably will have access to the procedures, which could create a wide divide between the poor and the genetically altered wealthy. It is possible that genetic diversity also be greatly reduced, leaving the human race susceptible to certain diseases. While the basic intentions of the science behind designer babies are positive, the potential for ethical compromise is great. I would therefore argue that the human race in its pursuit for

intelligence and athletic aptitude could leave the genetic Pandora's Box open
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to unknown manipulation and therefore would be better placed not continuing such technologies. Using this technology to have better looking children or to have more desirable traits is an idea that may seem appealing, but in reality, is it actually something scientists should be doing? I would say no.