

## Ethical Implications Involved in Designing Offspring's Using Genetic Engineering

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### DESCRIPTION

The field of genetic engineering has opened up new frontiers, including the controversial prospect of designing offspring with desired traits. Genetic engineering technologies, such as Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR)-Cas9, provide the means to modify the genetic makeup of individuals, potentially allowing for the selection and alteration of specific traits in future generations. The concept of genetic engineering in designing offspring presents both remarkable possibilities and complex ethical challenges. While it holds potential for preventing genetic disorders and enhancing desired traits, we must approach this field with careful consideration of the ethical implications and societal consequences. Through responsible regulation, open dialogue, and a commitment to upholding core values and principles, we can navigate this emerging field and ensure that genetic engineering is harnessed in a manner that benefits humanity while respecting individual autonomy and preserving human diversity.

### Genetic engineering techniques

Genetic engineering techniques enable precise manipulation of the DNA within cells. Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR)-Cas9, for instance, allows scientists to edit specific genes, either by introducing new genetic material or by modifying existing sequences. This powerful tool has the potential to influence a wide range of traits, from physical characteristics to susceptibility to certain diseases.

### Possibilities and benefits

Proponents argue that genetic engineering in designing offspring offers several potential benefits. Firstly, it holds the promise of preventing and eradicating genetic disorders by identifying and correcting disease-causing mutations. This could spare individuals from lifelong suffering and improve the overall public health. Secondly, the ability to select or modify specific

traits could enhance the quality of life for individuals and their future generations also. For example, reducing the risk of inherited diseases or enhancing cognitive abilities might offer new opportunities and advantages.

### Ethical considerations

The ethical implications surrounding genetic engineering in designing offspring are profound and multifaceted. One of the primary concerns is the potential for creating a society divided along genetic lines, exacerbating existing inequalities and perpetuating discrimination based on genetic advantages. Furthermore, there are concerns regarding the potential long-term effects on human diversity and the overall gene pool. Altering the genetic makeup of future generations may lead to unforeseen consequences, affecting genetic resilience and adaptability. The issue of consent is another critical consideration. Offspring cannot provide informed consent for genetic modifications, raising questions about autonomy, individual rights, and parental responsibility. The decisions made on behalf of children must balance potential risks and benefits against the ethical concerns surrounding the manipulation of human biology and the long-term impact on their lives.

### Regulatory and societal framework

The ethical considerations associated with genetic engineering in designing offspring necessitate robust regulatory frameworks and societal engagement. International collaboration, involving scientists, ethicists, policymakers, and the public, is essential to develop comprehensive guidelines and regulations that ensure responsible and ethical use of this technology. Stricter oversight and regulations should be in place to prevent the misuse of genetic engineering for non-medical purposes or for creating "designer offspring" based on superficial traits. Transparent decision-making processes, access to genetic counseling, and informed consent must be central to any genetic engineering practices involving human reproduction.

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