

Ethics of Designer Babies [1]

By: Ly, Sarah Keywords: [Reproductive rights](#) [2] [Genetic engineering](#) [3] [Eugenics](#) [4]

A designer baby is a baby genetically engineered *in vitro* [5] for specially selected traits, which can vary from lowered disease-risk to gender selection. Before the advent of genetic engineering and *in vitro* [5] fertilization [6] (IVF), designer babies were primarily a science fiction concept. However, the rapid advancement of technology before and after the turn of the twenty-first century makes designer babies an increasingly real possibility. As a result, designer babies have become an important topic in bioethical debates, and in 2004 the term “designer baby” even became an official entry in the *Oxford English Dictionary*. Designer babies represent an area within [embryology](#) [7] that has not yet become a practical reality, but nonetheless draws out ethical concerns about whether or not it will become necessary to implement limitations regarding designer babies in the future.

The prospect of engineering a child with specific traits is not far-fetched. IVF has become an increasingly common procedure to help couples with [infertility](#) [8] problems conceive children, and the practice of IVF confers the ability to pre-select embryos before [implantation](#) [9]. For example, [preimplantation genetic diagnosis](#) [10] (PGD) allows [viable](#) [11] embryos to be screened for various genetic traits, such as sex-linked diseases, before implanting them in the mother. Through PGD, physicians can select embryos that are not predisposed to certain genetic conditions. For this reason, PGD is commonly used in medicine when parents carry [genes](#) [12] that place their children at risk for serious diseases such as [cystic fibrosis](#) [13] or sickle cell [anemia](#) [14]. Present technological capabilities point to PGD as the likely method for selecting traits, since scientists have not established a reliable means of *in vivo* [15] embryonic gene selection.

An early and well-known case of gender selection took place in 1996 when Monique and Scott Collins saw doctors at the Genetics & IVF Institute in Fairfax, Virginia, for *in vitro* [5] fertilization [6]. The Collins' intended to conceive a girl, as their first two children were boys and the couple wanted a daughter in the family. This was one of the first highly publicized instances of PGD in which the selection of the embryo was not performed to address a specific medical condition, but to fulfill the parents' desire to create a more balanced family. The Collins' decision to have a “designer baby” by choosing the sex of their child entered the public vernacular when they were featured in *Time Magazine*'s 1999 article “Designer Babies”. Though the Collins' case only involved choice of gender, it raised the issues of selection for other traits such as eye color, hair color, athleticism, or height that are not generally related to the health of the child.

Prior to the Collins' decision to choose the sex of their child, The Council on Ethical and Judicial Affairs released a statement in 1994 in support of using genetic selection as a means to prevent, cure or specific diseases, but that selection based on benign characteristics was not ethical. Some ethical concerns held by opponents of designer babies are related to the social implications of creating children with preferred traits. The social argument against designer babies is that if this technology becomes a realistic and accessible medical practice, then it would create a division between those that can afford the service and those that cannot. Therefore, the wealthy would be able to afford the selection of desirable traits in their offspring, while those of lower socioeconomic standing would not be able to access the same options. As a result, economic divisions may grow into genetic divisions, with social distinctions delineating enhanced individuals from unenhanced individuals. For example, the science-fiction film *Gattaca* explores this issue by depicting a world in which only genetically-modified individuals can engage in the upper echelon of society.

Other bioethicists have argued that parents have a right to prenatal autonomy, which grants them the right to decide the fate of their children. George Annas, chair of the Department of Health Law, Bioethics, and Human Rights at [Harvard University](#) [16] has offered support for the idea of PGD, and the designer babies that result, as a consumer product that should be open to the forces of market [regulation](#) [17]. Additionally, other arguments in favor of designer baby technologies suggest that parents already possess a high degree of control over the outcome of their children's lives in the form of environmental choices, and that this should absolve some of the ethical concerns facing genetic selection. For example, parents keen on establishing musical appreciation in their children may sign them up for music classes or take them to concerts on a regular basis. These choices affect the way a child matures, much like the decision to select certain [genes](#) [12] predisposes a child to develop in ways that the parents have predetermined are desirable.

The increased ability to control and manipulate embryos presents many possibilities for improving the health of children through [prenatal diagnosis](#) [18], but these possibilities are coupled with potential social repercussions that could have negative consequences in the future. Ultimately, designer babies represent great potential in the field of medicine and scientific research, but there remain many ethical questions that need to be addressed.

Sources

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Subject

[Reproduction](#)^[23]

Topic

[Ethics](#)^[24] [Reproduction](#)^[25]

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[Articles](#)^[26]

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- [1] <https://embryo.asu.edu/pages/ethics-designer-babies>
- [2] <https://embryo.asu.edu/keywords/reproductive-rights>
- [3] <https://embryo.asu.edu/keywords/genetic-engineering>
- [4] <https://embryo.asu.edu/keywords/eugenics>
- [5] <https://embryo.asu.edu/search?text=in%20vitro>
- [6] <https://embryo.asu.edu/search?text=fertilization>
- [7] <https://embryo.asu.edu/search?text=embryology>
- [8] <https://embryo.asu.edu/search?text=infertility>
- [9] <https://embryo.asu.edu/search?text=implantation>
- [10] <https://embryo.asu.edu/search?text=preimplantation%20genetic%20diagnosis>
- [11] <https://embryo.asu.edu/search?text=viable>
- [12] <https://embryo.asu.edu/search?text=genes>
- [13] <https://embryo.asu.edu/search?text=cystic%20fibrosis>
- [14] <https://embryo.asu.edu/search?text=anemia>
- [15] <https://embryo.asu.edu/search?text=in%20vivo>
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- [17] <https://embryo.asu.edu/search?text=regulation>
- [18] <https://embryo.asu.edu/search?text=prenatal%20diagnosis>
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- [25] <https://embryo.asu.edu/topics/reproduction>
- [26] <https://embryo.asu.edu/formats/articles>