# Human Genetic Manipulation

## By Svetlana Levanova, 512 AE

Genes are working portions of DNA and the biological units of heredity. Specific genes code for specific traits that are found in a given organism. For example, one gene may code for eye color while another one may code for shoe size. DNA is an extremely complicated biological system. Many, if not most diseases stem from a defect in one's genetic code. There are two ways for one to get a genetic defect or mutation. A mutation can be inherited from one or both parents, or a genetic mutation can be acquired.

Gene therapy is the process by which cells are supplied with healthy copies of missing, flawed, or desirable genes. Gene therapy can possibly be a cure for the genetic mutations that are constantly occurring in nature. There is a heated discussion in the society about both genetically modified food and human gene engineering and the possible repercussion from them, which we may be able to get only in a certain period of time.

Still this burning issue has arguments both in favor of and against gene technology. The success of genetic manipulation will result in a better quality of life for people. Nearly all diseases can potentially be cured. Cancer will be wiped out, as cancer causing genetic defects will no longer be a problem. As a result of genetic testing, risk prevention is also a benefit. If I find that I am genetically inclined to have a heart attack, I can reshape my habits around my genetic dispositions. Or, if I know that I have a recessive gene for a disease, I will know not to have a child by another person with that gene. Also we get more than just medical benefits. If it is found out that genes are responsible for the work of the mind, than who is to say that someday people won't be able to endow their children with certain qualities. Many see this as an advantage. Before my child is even conceived, I can give him brown hair, green eyes, 6 feet in height and an intellect to match! In a nutshell, the benefits are long lives, less disease and tailored children.

As for the arguments against gene technology, there are many ethical and religious reasons against gene manipulation. Many say that it will be an invasion of one's genetic privacy. Once the technology becomes widespread, genetic testing will be mandated, and genetic information will have to be disclosed. Many people don't want to know about their own genetic destiny, let alone allow others to know. The fact that genetic information may one day become easily accessible leads to the possibility of genetic discrimination and violation of genetic privacy. People can most certainly be judged and oppressed on the basis of genetic information as well as skin color. Why should I hire a man who has a genetic risk of developing heart disease? Why should I offer him insurance?

Many people feel that genetic technology will have organizational problems. For example, that the practice will be poorly regulated and that people can do as they please with developing genetic engineering. Also, it is feared that this new technology will be available only to the wealthy, for their own benefit and exploitation. People fear also the fact that genetically modified humans will decrease the diversity of the human species, which will make the human population susceptible to diseases. This is a far-fetched notion, but the possibility exists. Finally, it is feared that creating new types of people is undermining God's natural order. Just as above it was stated as a benefit, many also view having the power to "select" your child as a problem. They feel the humans should not have the power to create a child like it is some sort of machinery. Life should be held in higher regard than that.

Human curiosity and innovation will always manage to conjure up some sort of scientific breakthrough. Genetic manipulation is no exception. Like all new technologies, it has its pros and cons that must be weighed. The potential for reward and for disaster are both great in this issue. With sufficient regulation and responsibility, the benefits of genetic manipulation can far outweigh the drawbacks. It is a situation that must be handled delicately.