

Picture a world, where cancer is cured with a packet of pills, where single injections treat heart diseases, Alzheimer's or Diabetes. This is a future that was imagined 12 years ago, when it was declared that the human genome had been sequenced. Scientists had cracked out genetic code and mapped billions of letters in DNA. They thought that this breakthrough would change everything in the mankind history. Can we really change the world by deciphering the human genome? What has changed after 2003? Can we really change the life of people, dying of incurable diseases? Well, these are the questions that need answers. I will try to make my assumptions, ideas, conclusions, what has changed after Human Genome Project? What are the negative and positive sides of this discovery?

The HGP has revealed that there are probably about 25,500-30 000(3 billion base pairs) human genes. The completed human sequence can now identify their locations. This ultimate product of the HGP has given the world a resource of detailed information about the structure, organization and function of the complete set of human genes. This information can be thought of as the basic set of inheritable "instructions" for the development and function of a human being.

Understanding human genome will have a huge impact on the ability to asses' risk factors posed to individuals by exposure to some toxic agents. Scientists do know that genetic differences make people more susceptible to some diseases and others more resistant to such agents. HGP technologies also can help to assess health damage and risks caused by radiation exposure. Furthermore, damage and risks caused by exposure to mutagenic chemicals and cancer-causing toxins also can be revealed. Consequently, the likelihood of heritable mutations can be reduced. One of the most interesting parts of HGP is Gene Therapy that can physically interfere into the genome and alter the damaged area, repair it, make people healthier and happier. Basically HGP made life easier at some point, made pharmacology more popular, producing different medications, but this point can also be discussed as a negative effect, because this causes more resistance.

Establish paternity and other family relationship tests, match organ donors with recipients in transplant programs, understanding disease vulnerabilities and revealing drug targets.

In the past few years, the project has been viewed in a more applied manner. Many scientists think that genetic sequences recorded by the project will aid in the identification of genetic links to human diseases." For now the genes responsible for cystic fibrosis, breast cancer, colon cancer and sickle cell anemia have been found, making genetic tests for carriers of the disease a reality. This testing also raises some serious ethical and social issues."<sup>1</sup> Genetic tests may also be beneficial to people that have mutations at certain loci that make them particularly susceptible to an environmentally induced disease. Thus, they could potentially avoid the disease by avoiding the environment that could cause the disorder.

I can just say that HGP has many benefits but we can also find some negative effects that exist. Mostly we are dealing with ethical and social issues. Such issue that has been investigated refers to the gene therapy that means replacing the faulty gene with the corrected one.

This creates a supreme, almighty human, who can change everything, even his/her genome that has been the most mysteries miracle in the mankind. Knowing the fact that human can interfere in the world, created by the god that will put the religion away from people. This has caused concern with many people because they feel that in a way mankind will be altering nature by eliminating the defective alleles from a population. This raises ethical concerns because some religious groups feel that mankind would be taking the role of the supreme creator if gene therapy becomes a reality. Another problem is discrimination based on a genotype. For example, employers may obtain genetic information prior to hiring them, and if there is some trait in the genome, they may be discriminated. To sum up, one thing that I think everyone will agree is that Human Genome Project will have profound effects on human lives. Looks like everyone will be touched by it in some way. I deeply believe that this is one of the most influential projects ever funded in the medical history; it opened the doors in many directions. I believe that with proper management this project can benefit the mankind in many ways. We just need to be very careful and attentive.

---