СЕКЦІЯ ГУМАНІТАРНІ ДИСЦИПЛІНИ

ПІДСЕКЦІЯ ІНОЗЕМНА МОВА

BIONIC PROSTHETICS: CURRENT TENDENCIES, ACHIEVEMENTS AND PROSPECTS FOR DEVELOPMENT

Burlakov A.O., Assoc. Prof. Lysanets Yu.V.
ВДНЗУ "Українська медична стоматологічна академія"

Кафедра іноземних мов з латинською мовою та медичною термінологією

The term "bionics" was coined by Jack E. Steele in 1958 as a hybrid word derived from "biology" and "electronics". In medicine, bionics involves the replacement of organs or other body parts by implants which closely imitate or even surpass the original function. Bionics constitutes a revolutionary branch of modern science which can deal with previously incurable conditions, which renders the present research relevant. The aim of the paper is to consider the status of bionic prosthetics in modern medicine, delineate the prospective directions and possible challenges of this branch of research. The scientific novelty consists in the authors' critical analysis of available scholarly literature upon the subject under consideration.

Application of prosthetics has been mentioned since ancient times. The idea of prosthetics dates back to Egyptians, as evidenced by the wooden prosthetic toe found in the New Kingdom. Modern prosthetics has evolved to bionic engineering and artificial organs. Nowadays, bionic technologies challenge scientists with a range of issues, such as the methods for interaction between the prosthesis and the patient (integration of the prosthesis with the patient's body) and the like. The newsworthy achievements in bionics are implantable brain–computer interfaces (BCIs) which are being developed by Elon Musk's *Neuralink*. The project is intended for manufacturing devices (the so-called "neural laces") to treat serious brain diseases, eventually aiming at human enhancement, such as improving memory or allowing direct interfacing with computers.

Thus, bionic prosthetics and implantable brain–computer interfaces suggest a wide range of possibilities for researchers and patients, and their in-depth research allows us to gain a better understanding of this innovative sphere of medicine.

TREATMENT OF ADULTS WITH THE USE OF CRISPR TECHNOLOGY

Holinchenko O.V., Melaschenko M.P.
ВДНЗУ «Українська медична стоматологічна академія»

Кафедра іноземних мов з латинською мовою та медичною термінологією

The topicality of the research is the treatment of the diseases by DNA changing.

The scientific novelty of this research deals with a new method in treatment of the disease by the change of DNA.

The purpose of this research is to investigate the technology of CRISPR for treatment.

The technology of CRISPR is a biological system for changing DNA.

In 2012 CRISPR was opened by a molecular biologist, Professor Jennifer Dudnaya. When bacterium attacks a virus, it produces genetic material that corresponds to the genetic sequence of the attacker. This material in combination with the key protein can attach to the DNA of the virus, crack the genetic code and neutralize the virus. Now scientists can apply the same scheme to insert new elements into DNA, delete or correct its parts. This process is so accurate that scientists can go over the billions of chemical combinations that make up the DNA of the cell to make a specific key for the genetic code. It is assumed that with their help, we can treat Leber's amaurosis, a rare retinal disease that leads to blindness, as a result of mutation of genes. In the field of biotechnology, there are several newly established firms that hope to implement the application of CRISPR technology in hospitals.

They suggest that "crispers" can be used to enhance the functions of the body's T cells, which can improve the ability of the immune system to recognize and fight cancer cells. Another potential area of application of the technology is the treatment of blood diseases and the immune system.

So, the technology of CRISPR is a future of medicine. It helps in the treatment of the diseases, such as the cancer, HIV and many others.

INNOVATIVE TECHNOLOGIES OF DENTAL PROSTHETICS IN THE 21ST CENTURY

Gumeniuk K.I., Assoc. Prof. Lysanets Yu.V.
ВДНЗУ "Українська медична стоматологічна академія"

Кафедра іноземних мов з латинською мовою та медичною термінологією

Dental implants constitute an important achievement of modern dentistry. The in-depth research into their up-to-date types, advantages and challenges in application allows us to gain a better understanding of patients' needs and thus to improve the quality of life outcomes, which renders the present research relevant. The novelty of this work consists in the authors' consideration of the phenomenon of dental implants from different perspectives, critical analysis and synthesis of available scholarly literature, which contributes to the extension of scientific knowledge upon this issue. The aim of the research is to design a framework of dental prosthetic technologies, which are available nowadays, and to develop a diagnostic algorithm for patients to facilitate the process of prosthetics prescription and implementation.

Currently, the technologies of dental prosthetics are evolving every day. The newest possibilities of dental implants are quite impressive due to their patient-friendliness and usability. For instance, immediate load dental implants ("same day