Kalenik A.A., Laputski P.O. PROSTHETICS

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Prosthetics is the replacement of lost or damaged beyond retrieve parts of the body with artificial replacement - prostheses. Prosthetics is an important stage in the process of social and labor rehabilitation of a person, who has lost a limb, or suffers from diseases of the musculoskeletal system. Prosthetics is a discipline that is between medicine and technology, closely related to orthopedics, traumatology, reconstructive surgery, etc. Although prosthetics as a separate and independent discipline formed in the XIX century, information about prosthetics was found in ancient times - from the Greek historian Herodotus, the Roman historian Plinius and others.

There are several main types of prostheses:

- 1) exoprostheses or anatomical prostheses (manufacturing of artificial limbs, including teeth, eyes, nose, etc.)
 - 2) endoprostheses (implantation of artificial vessels, joints)
- 3) ectoprostheses (cosmetic prostheses that are fixed outside but do not fulfill their function: for example, prostheses of the auricles).

A separate type of prosthetics is the manufacture of hearing aids.

Anatomical prostheses are generally limb prostheses. Limb prostheses include cosmetic, functional traction prostheses and bionic (or bioelectric) prostheses.

Cosmetic prostheses are made of silicone and are as close as possible to the preserved limb.

A functional traction prosthesis is an active type of upper limb prosthesis that the user controls by means of traction using the strength of muscles, no electronics.

Bionic prostheses are myoelectric prostheses that offer significant benefits to people of all ages. Myoelectric prostheses are not controlled directly by the muscles, they are powered by electrical signals from the muscles.

Ectoprostheses (or cosmetic prostheses) are made of silicone of varying degrees of hardness, which allows you to achieve a feeling close to touching real skin, as well as from other synthetic materials for prosthetics.

Endoprostheses are implanted into (or instead of) the damaged or malfunctioning vessels, joints or heart valves as a method of treatment.

It can be assumed that the development of bionics in general and bioprosthetics in particular can help humanity achieve true immortality. Bionic organ prostheses are already allowing terminally ill people to extend their lives for years, limb prostheses are already replacing most of the functions of organic limbs and promise to surpass them soon. However, there are two significant problems: technological and ethical. If the level of technological development is only a matter of time, then the attitude of people, religion, society to this idea can block the path to immortality for humanity.