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THE ARTIFICIAL ORGANS: PROBLEMS AND FUTURE PROSPECTS

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Many diseases are associated with organ dysfunctions (for example, renal failure, heart failure, diabetes mellitus, etc.). These disorders can be corrected using traditional pharmacological or surgical methods.

However, in case of a serious injury the function of the organ can be restored by growing organs artificially both in the human body and outside the body. Sometimes it is possible to grow an organ from the cells of the person to whom they are going to be transplanted. A number of methods of growing biological organs have been developed, for example, using special devices operating on the principle of a 3D printer. This technology involves a possibility of growing organs (with further replacement of a damaged organ of a person with a preserved brain), an independently developing organism, and a clone – "plants" (with disabled ability to think). Organ cultivation is the most natural way for the body to recover from major injuries.

Our purpose is to study this method in more detail and identify the problems associated with it and development prospects.

The first "Organ Manufacturing" centre was set up in Tsinghua University in 2003, accompanied by the creation of several series of automatic and half-automatic bioartificial organ manufacturing technologies.

According to the scientists, the development and implementation of techniques for growing complex organs in the coming decades will be worked out so much that growing complex organs will be widely used in medicine, displacing the most common method of transplantation from donors.

However, there are some problems: a high cost, a lack of a sufficient number of qualified specialists and equipment, a big risk when introducing a new body, creating a body takes a lot of the time. Obviously, there are advantages: improving the quality of peoples life, saving a large number of patients lives.

To sum up, we found out that there are problems in the field of creating artificial organs. Unfortunately, there has been developed no single production or technology in this area which could be commonly accepted so far. Nevertheless, it is a promising field of research.

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