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BIODEGRADABLE MATERIALS FOR MEDICAL APPLICATION
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In the last two decades significant advances have been made in the development of biodegradable and biocompatible materials for medical application. In the biomedical field, the goal is to create and describe artificial materials or, in other words, “spare parts” that can be introduced in the human body to restore and improve physical functions and enhance the quality of life.

The objective of this research is to analyze and systematize the data on the application of biodegradable materials in medicine and their impact on the human body.

Analysis of scientific articles, publications and internet resources was used.

Biomaterial is an inert synthetic substance designed to be introduced into biological systems for a medical purpose – either diagnostic or a therapeutic one. Biomaterials can restore functions of tissues and organs in the body, but the properties required of a material vary depending on the particular application. Biodegradation is a very important property for biomaterials used as temporary sutures, scaffolds, drug delivery vectors and implants. Biodegradable materials are suitable for a variety of applications, but their priority application is in drug delivery and tissue engineering. The main advantages of biodegradable implants are less invasive repair, possibility of tissue growth, temporary support during recovery of tissues and gradual dissolution by the human body afterwards. The absence of immunogenicity, toxicity, carcinogenicity and teratogenicity is essential for biodegradable materials.

The advantage consists in that biodegradable implantable materials for drug delivery and tissue engineering help to avoid both permanent and chronic immune response and a subsequent removal surgery as well. Furthermore, the variety of polymeric materials and specific biodegradable characteristics allow health care providers to control drug delivery, to develop resorbable structures and to improve cell integration.