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A Brief View on Advances in Biomedical Technology

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Biomedical techniques have wide clinical application in many fields of drug such as oncology, rheumatology, immunology, genomics, cardiology and diagnostics; among others. This has been made possible with the usage of genetic engineering and some of strategies like Immunohistochemistry (IHC), Fluorescent Microscopy, Cell Culture, Genetically Modified (GM) Cells, Monoclonal Antibodies (MAbs), Polymerase Chain Reaction (PCR) and Western blotting. The end of this literature review is to explore the foundations and bases of the generally used biomedical techniques, as well as their applications in biomedical research and clinical medicine in general.

This review also aims to shed some light on more recent advances in genetic engineering, especially in relation to genetically modified cells and use of monoclonal antibodies which have found more increasing use and relevance in genomics, oncology, rheumatology, immunology, cardiology as well as diagnostics, and have revolutionised patient care [1], while at the same time resulting in improved standard of health care. Unfortunately, some of these new ways are associated with unwanted side effects which may pose a risk to the people they're actually intended for. Therefore, there's need for strict regulations and guidelines to control the use and implementation of some of these novel techniques [2]. Biomedical technology is the application of technology and engineering to living organisms, which can involve a range of activities from designing medical equipment or conducting research. Keep reading to find out more about biomedical technology and about your educational options within this field.

Here are some of the breakthroughs that have occurred in biomedical engineering throughout its history that have had the biggest impact and changed lives.

X-ray machines

This century-old technology allows medical professionals to see broken bones, dental depressions, and other effects inside the human body that need attention [3]. X-ray machines inform many common scientific remedies and give data without being invasive. MRI and ultrasound technology are versions on X-ray machines, and brought together, have substantially superior the health care machine and made better patient care possible.

Electrocardiographs

Another century-old technology, EKG machines can tell doctors whether or not a patient's coronary heart is functioning typically or needs extra study or treatment [4]. EKGs don't always show signs of heart complaint, still. They can be done while a case is resting, during exercise, or with continuous monitoring to show how the heart reacts to daily activities.

Nanotechnology

Nanoparticles are tiny, often microscopic particles which might be an increasing number of used to come across and deal with various styles of most cancers at a nearly mobile stage. Nanomaterial's are used to hold dyes to very small regions as comparison sellers to come across tumour's and to carry remedy pills directly to most cancers instead of getting to treat a larger area (or the complete body).

Brain- Machine Interface

These devices assist people's brains communicate with prosthetic limbs, wheelchairs, and different assistive devices to make them move. When they had been first advanced in 2012, they price six figures, but with continued advancement, costs are coming down while effectiveness keeps improving.

Eko Core

This tool takes data amassed from a stethoscope and places it at the cloud, in which a health practitioner can download it onto a smartphone or a tablet [5]. This record is greater correct and definitive than a health practitioner's listening alone, and may be used to avoid professional care whilst it is not really needed.

Bluetooth Pulse Oxi meter

Monitoring a patient's blood oxygen level simply were given loads less complicated with the current preface of bias that use Bluetooth to deliver the information to a smartphone or pill the use of an app, allowing docs to more closely hold song of a patient's condition.

Genome editing

Technology termed CRISPR has been called the discovery of the century, with correspondents predicting that the scientists who developed it would get the 2015 Nobel Prize in Chemistry (they did not, but it was still a huge breakthrough). CRISPR allows genetic code to be modified so that diseases and pathogens can be eliminated, and with farther development, may revolutionize medicine in numerous ways.

Biomedical Informatics

Biomedical informatics pertains to the field of computer science and engineering which apply informatics' disciplines to the medical domain. This includes everything from information science, bioinformatics, statistical computing and computer network security to clinical decision-making, diagnostic applications and improved disease prevention and care. The medical domain offers a very wide array of complex issues that are tackled by biological informatics specialists. This field is growing at an exponential rate and therefore it is expected to create an enormous demand in the future. Due to the interplay of technology and industry, this field presents tremendous opportunities to those people in whom it has been experienced and those who wish to have a career in this field.

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Subfield – Clinical informatics

One of the subfields of biomedical informatics is clinical informatics. This involves the application of mathematical and computer principles to solve problems in clinical medicine. For instance, a mathematical algorithm is used to analyse clinical images to detect diseases using a large set of image processing algorithms. This can help a researcher to detect a possible disease earlier than if they would have manually conducted the same analysis.

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