Personalized Vaccines: Advances in the development of personalized vaccines

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Abstract

This overview discusses the ever-evolving discipline of medicine with an emphasis on recent advancements, barriers, and moral guandaries. It explores the science of vaccines, various types of vaccines, the significance of public health, precision medicine, immunotherapy, gene editing, telemedicine, and the impact of nanotechnology on patient care, diagnosis, and treatment. Tissue engineering, molecular targeting of inflammatory chemicals, and modulating microbial signaling systems represent some of the innovative approaches employed in periodontal disease research worldwide. It is imperative to integrate omics-based approaches with traditional therapies. Relevant targets include vaccines, gene therapy, proteomics, and nanotechnology, which may be utilized to address periodontal disorders. An autonomous healthcare system that incorporates patient health interdependencies into consideration is the ultimate objective of Healthcare 5.0. The comprehensive customized healthcare services (CPHS) within the framework of the healthcare Internet of Things (HIoT) are the focus of this article's study of personalized healthcare services. Integrating both artificial intelligence (AI) and non-AI techniques, it evaluates the three-layer architecture for IoT-based healthcare systems. The primary requirements for CPHS as well as its positive and negative aspects in terms of tailored healthcare services are covered in the article. The creation of vaccines and cutting-edge cancer treatment approaches are the main topics of this study, which investigates the effects of AI on healthcare. It demonstrates how AI holds the potential to completely transform patient care by influencing future medical practices and drastically transforming the way healthcare is delivered.

Keywords: Autonomous Healthcare, Point-Of-Care, Personalized Medicine, Ioht, Iomt, Autoimmune Reactions, Cancer Immunotherapy

I. Introduction

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