



Impact of Medical Genetics in Healthcare and its Limitations

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Received date: 11 March, 2023, Manuscript No. JGGT-23-95834;

Editor assigned date: 13 March, 2023, PreQC No. JGGT-23-95834 (PQ);

Reviewed date: 27 March, 2023, QC No. JGGT-23-95834;

Revised date: 03 April, 2023, Manuscript No. JGGT-23-95834 (R);

Published date: 13 April, 2023, DOI: 10.4172/Jggt.1000143.

Description

Medical genetics is a specialized field of medicine that focuses on the study of genetic disorders and inherited diseases. It involves the identification and analysis of genetic factors that cause diseases, and the development of techniques for prevention, diagnosis, and treatment. Medical genetics is a rapidly developing field that is transforming healthcare in many different ways. Genetic disorders are caused by changes in the DNA sequence of genes. These changes can occur spontaneously or be inherited from one or both parents. Genetic disorders can affect any part of the body, and their symptoms can range from mild to severe. Some genetic disorders are more common in certain populations, while others occur randomly. Medical genetics focuses on identifying the genetic basis of these disorders, understanding how they are inherited and developing techniques to prevent and treat them.

One of the most significant impacts of medical genetics on healthcare is in the field of personalized medicine. Personalized medicine refers to the use of genetic information to modify medical treatments to individual patients. By analyzing a patient's DNA, doctors can identify genetic variations that may affect how the patient

responds to certain medications. This allows doctors to prescribe medications that are more probability to be effective and avoid products which may cause an allergic reaction. Another area in which medical genetics has advanced significantly is the diagnosis of genetic disorders. A combination of developments in genetic testing technology, it is now possible to efficiently and precisely determine the genetic basis of many diseases. Genetic testing can also be used to examine for genetic disorders in newborns, allowing for early detection and treatment.

Medical genetics has also played an essential role in the development of new therapies for genetic disorders. For example, gene therapy involves the implementation of new genes into the body to replace or repair faulty genes that cause disease. This technique has demonstrated effective results in treating a wide range of genetic disorders, including cystic fibrosis, muscular dystrophy, and sickle cell anemia. However, medical genetics has some limitations. One of the main difficulties is the complexity of genetic disorders. Many genetic disorders are caused by multiple genes, making it difficult to identify and target the specific genetic variations causing the problem. Additionally, genetic testing can be expensive, and it is not protected by the majority of insurance strategies. As a result, obtain the benefit of genetic testing and personalized medicine is frequently limited. Significance is the ethical implications of genetic testing. For example, genetic testing can identify information about a patient's risk for certain diseases, which can have implications for insurance coverage and employment. There are also the possibilities about the potential for discrimination based on genetic information.

However of all of these difficulties, the impact of medical genetics on healthcare is undeniable. The capacity of humans to prevent, diagnose, and treat genetic disorders will improve the comprehension of the genetic basis of disease increases. Advances in genetic testing and personalized medicine are currently transforming the methods for healthcare, and it is an assumption that development will continue in the future.

Citation: Strovel B (2023) Impact of Medical Genetics in Healthcare and its Limitations. *J Genetic Gene Ther* 7:1.