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Commentary

Nutritional Healthcare in Genomics

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DESCRIPTION

Genomics is a branch of biology that studies the structure, function, evolution, mapping, and editing of genomes. A genome is an organism's whole set of DNA, containing all of its genes as well as its three-dimensional hierarchical structure. With the help of enzymes and messenger molecules, genes may direct the production of proteins.

Proteins are responsible for the formation of body structures such as organs and tissues, as well as the management of chemical reactions and the transmission of information between cells. Genome sequencing and analysis are also part of genomics.

Healthcare and genomics

People frequently inquire about how having their genetic blueprint can assist them and why they are more prone to ailments for which there are no remedies. There are many human disorders and diseases are caused by the interaction of the environment and their genes; nevertheless, we are still learning about the specific function genes play in common disorders and diseases. While news headlines may lead you to believe otherwise, most cancers are not inherited. As a result, it's likely that the recent rise in cancer rates around the world can be traced, at least in part, to the rise in the amount of synthetic and other harmful substances found in today's culture.

As a result, public health genomics, notably environmental health, will become a key aspect of future healthcare-related challenges in the near future. Through enhanced diagnostic procedures, early discovery of a predisposing genetic mutation, pharmacogenomics, and gene therapy, the potential benefits of unraveling the human genome will be focused more on identifying causes of disease and less on treating disease. The experience of discovering and understanding one's genetic make-up will be unique to each person. Some people will be able to seek out better medicines or therapies for a disease they already have due to familial genes in which their family has a strong history, and others will be able to seek out better medicines or therapies for a disease they already have due to familial genes in which their family has a strong history.

Others will uncover that they are more prone to an incurable sickness. Though this information may be uncomfortable, it will allow them to prevent or delay the onset of the condition by increasing their knowledge of the disease, adopting lifestyle changes, seeking preventive medicines, or detecting environmental triggers. To incorporate human genetics into the day-to-day practise of healthcare as research in the field progresses. Understanding one's own genetic code can give them the confidence to take charge of their own health. Genomics will give a better understanding of illness risk can aid in the verification of a family history tool for practitioners and the community at large.

In comparison to technology-intensive studies, validating cost-effective techniques can assist re-establish the value of basic medical practises (eg: family history).

Nutrition and health

Nutrition is crucial in defining numerous health conditions. The field of nutrigenomics is founded on the premise that everything a person consumes has an impact on their DNA. This can be accomplished *via* up regulating or down regulating the expression of specific genes, as well as a variety of other techniques. While the industry is still in its early stages, there are a number of businesses that market directly to the public and publicise the issue as a public health issue. Despite the fact that many of these businesses claim to be in the consumer's best interests, the tests they do are either irrelevant or result in common sense recommendations. Such businesses foster public scepticism of future medical testing that might test more appropriate and applicable agents.

The methylation process including Methylene Tetra Hydro Folate Reductase (MTHFR) is an example of nutrition's role. To overcome the effect of a variant SNP, an individual with the SNP may require higher vitamin B12 and folate supplements. The MTHFR C677T polymorphism has been linked to an increased risk of neural tube defects and excessive homo cysteine levels.

The discovery was made with the help of a "gene chip," which helps to track the complicated interactions of hundreds of proteins throughout an entire genome rather than just one at a

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time. The chemo protective effect of cruciferous vegetables was the first gene profiling examination of a cancer-preventing drug employing this approach (eg: broccoli, brussels sprouts). The results of the study, which were published in The Journal of Nutrition, outline the metabolism and mechanisms of action of cruciferous vegetable constituents, discuss human studies testing the effects of cruciferous vegetables on biotransformation systems.