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NEW MEDICAL TERMS

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Introduction. The convergence of CRISPR, CAR-T Cell Therapy, epigenetics, phenomics and gene editing has ushered in a new era of healthcare innovation. The primary goal of this research is to elucidate how these advancements are revolutionizing medical practices, offering personalized treatments.

Purpose: to understand the meaning of new words and terms.

Results and their discussion. The term "CRISPR" stands for "Clustered Regularly Interspaced Short Palindromic Repeats." It was discovered as part of a bacterial defense mechanism against viruses. CRISP emerged as a revolutionary gene-editing tool, enabling precise modifications to DNA sequences. CRISPR refers to a technology that allows scientists to edit genes with high accuracy, offering potential cures for genetic disorders.

The term "Gene Editing" combines "gene" (from the Greek "genos," meaning origin) and "editing" (from Latin "editus," meaning to publish or alter). Gene editing became prominent with the development of technologies like CRISPR-Cas9, enabling precise modifications to DNA. It refers to the process of making targeted changes to an organism's genetic material to correct defects or introduce new traits.

The term "CAR-T" stands for "Chimeric Antigen Receptor T-cell," derived from Greek "chimera" (mythical creature made of different parts) and Latin "receptor" (receiver).This therapy emerged as a breakthrough in cancer treatment, involving the genetic modification of a patient's T-cells to target cancer. CAR-T cell therapy is a form of immunotherapy that engineers immune cells to recognize and destroy cancer cells.

The term "Epigenetics" originates from Greek "epi" (above) and "genetics," studying gene expression changes without altering DNA. Epigenetic modifications occur through mechanisms such as DNA methylation, histone modifications, and non-coding RNA regulation. Epigenetics embodies the study of changes in gene activity and expression influenced by various environmental factors and lifestyle choices.

The term "Phenomics" combines "pheno-" from phenotype and "-omics" for comprehensive study. Utilizes advanced techniques to quantify and analyze phenotypic data. Study of how genes and environment influence observable traits.

Conclusion. The integration of CRISPR, CAR-T Cell Therapy, epigenetics, phenomics and gene editing is propelling healthcare into a future defined by personalized precision medicine.