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Nota di contenuto	Chapter 1. The Epigenetic Landscape of Exercise in Human Health: an Overview -- Chapter 2. Long-term Health Benefits Induced by Exercise: a Role of Epigenetic Memory -- Chapter 3. Exercise Benefits for Mother and Offspring: Molecular Mechanisms and Advances -- Chapter 4. Epigenetic Modifications in Exercise-exerted Cardiovascular Protection -- Chapter 5. Exercise, Epigenetics, and Mental Health: Unveiling the Connection -- Chapter 6. Histone Acetylation/Deacetylation and Exercise: Epigenetic Mechanisms Underlying Skeletal Muscle Health and Aging -- Chapter 7. Exercise-Epigenetic Axis: Metabolic Alignment to Oxidative Stress and Redox Status -- Chapter 8. Exercise-induced Epigenetics Modulation of Metabolism -- Chapter 9. Exercise-Induced Metabolites Influence Health via Epigenetic Modifications -- Chapter 10. Epigenetic Modulation of Mitochondria by Exercise -- Chapter 11. Gut Microbiota and Exercise: Implications for Health Promotion and Athletic Performance -- Chapter 12. Extracellular Vesicles in Exercise-Induced Health Benefits -- Chapter 13. The Epigenetic Regulation of Exerkines -- Chapter 14. Exercise, Epigenetics, and Cell Death -- Chapter 15. Perspectives on Exercise, Epigenetics, and Human Health — Challenges, Opportunities, and the Road Ahead.

Sommario/riassunto

This book offers an in-depth exploration of the complex relationship between exercise, epigenetics and human health. Drawing on the latest scientific research and expert insights, it provides readers with a comprehensive understanding of how physical activity affects the epigenome - the molecular markers that alter gene expression without altering the DNA sequence. Regular physical activity has the potential to modify gene expression patterns, resulting in a wide range of long-term health benefits that can even be inherited by future generations. These benefits include a reduced risk of chronic diseases such as diabetes, cardiovascular disease and certain types of cancer. In addition, physical activity has been shown to improve cognitive function and mental well-being, contributing to better overall health. This book examines the mechanisms by which exercise benefits health through epigenetic modifications. It also explores how factors such as intensity, duration and frequency of exercise play a role in these modifications, shedding light on the importance of personalized exercise prescriptions. This new volume in the Epigenetics and Human Health book series serves as a valuable resource for those interested in the rapidly evolving field of epigenetics and its profound relationship to physical activity and health. Providing a comprehensive synthesis of current knowledge, it is aimed at researchers, educators and students in the fields of genetics, epigenetics, sport science and public health.