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Nota di contenuto	Chapter 1. BioIron: Origin, Chemical Properties and Biological Functions -- Chapter 2. Cellular Iron Homeostasis -- Chapter 3. Systemic Iron Metabolism -- Chapter 4. The Labile Side of Iron in Health and Disease: a Narrative Review -- Chapter 5. Iron and Cell Death -- Chapter 6. Dietary Iron Absorption: Biochemical and Nutritional Aspects -- Chapter 7. Hepcidin and Tissue-Specific Iron Regulatory Networks -- Chapter 8. Control of Systemic Iron Homeostasis – Insights Gained from Studying Mouse Models -- Chapter 9. Diagnosis and Treatment of HFE282Y-Linked Hemochromatosis -- Chapter 10. Diagnosis and Management of Non-HFE Hemochromatosis, Ferroportin Disease and

Rare Hereditary Iron Loading Disorders -- Chapter 11. Iron-Loading Anemias -- Chapter 12. Iron Deficiency Anemia -- Chapter 13. Anemia of Inflammation -- Chapter 14. Iron, Heparin, and Immunity -- Chapter 15. Iron Metabolism in Cardiovascular Disease -- Chapter 16. Iron and Liver Disease -- Chapter 17. The Impact of Iron Homeostasis in Insulin-Sensitive Tissues and Gut Microbiome on Obesity-Driven Metabolic Disorders -- Chapter 18. Iron and Cancer -- Chapter 19. Neurodegeneration with Brain Iron Accumulation -- Chapter 20. Iron and Bone Pathophysiology -- Chapter 21. Iron and Pregnancy -- Chapter 22. Iron and the Intestinal Microbiome -- Chapter 23. Iron Chelation Therapy -- Chapter 24. Oral and Intravenous Iron Therapy -- Chapter 25. Diagnostics: Markers of Body Iron Status -- Chapter 26. Current Landscape of Heparin Therapeutics.

Sommario/riassunto

This book provides a state-of-the-art overview on the role of bioiron in health and disease. Iron is an essential constituent of simple and complex organisms and has played a critical role in the origin of life. Cells utilize iron for energy metabolism, oxygen transport, and several biochemical reactions due to its flexible coordination chemistry and its unique ability to serve both as electron donor and acceptor. The term "bioiron" was coined to emphasize the importance of iron in biology and medicine. Even though iron is an abundant metal, its bioavailability is limiting. This often leads to iron-deficient states, which manifest in anemia and other co-morbidities. In fact, iron deficiency is the most common medical condition worldwide. On the other hand, excess iron is potentially toxic due to its redox reactivity. Iron toxicity is illustrated in pathologies of iron overload disorders, such as hereditary hemochromatosis or iron-loading anemias. Deregulation of iron metabolism is also observed in prevalent metabolic, cardiovascular, or neurological disorders. Our knowledge of iron metabolism has dramatically increased during the last 30-40 years with the discovery of elegant iron homeostatic networks that operate at the cellular and systemic levels. These include the IRE/IRP regulatory system and the hepcidin/ferroportin axis. The iron hormone hepcidin has emerged as a master regulator of systemic iron traffic and as a pharmacological target for iron-related disorders. The book offers a comprehensive overview of the rapidly growing bioiron field and aims to attract the attention of students, basic scientists, and clinicians.
