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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	1. Introduction to Circadian Rhythms, Clocks and its Genes -- 2. Oxidative Stress and its Role in the Synchronization of Circadian Rhythms in Crustaceans, an Ecological Perspective -- 3. Control of Rest: Activity Behavior by the Central Clock in Drosophila -- 4. Biological Rhythmicity in Subterranean Animals, a Function Risking Extinction? -- 5. Avian Circadian Organization -- 6. Functional Organization of Circadian Timing System of Diurnal Primate (Marmoset) -- 7. Intracellular Calcium as a Clock Output from Suprachiasmatic Nuclei Neurons -- 8. GABAA Receptor-Mediated Neurotransmission in the Suprachiasmatic Nucleus -- 9. Network Properties in the SCN Function -- 10. Behavioral, Physiological and Neuroendocrine Circadian Rhythms during Lactation -- 11. A Time to Wake, a Time to Sleep -- 12. Chronostasis: The Timing of Physiological Systems -- 13. Circadian rhythm and Food/Nutrition -- 14. Physiopathology of Circadian Rhythms: Understanding the Biochemical Mechanisms of Obesity and

Cancer -- 15. Effects of Circadian Disruption on Physiology and Pathology: from Bench to Clinic (and Back) -- 16. Circadian Dysfunction in Huntington's Disease -- 17. Is it Possible to Modify Clock Genes to Improve Health?.

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## Sommario/riassunto

Well known experts in the field of Chronobiology from around the world, provide an integrative view of the state of the art of circadian biology. At present, genetic and epigenetic interaction of regulatory pathways among circadian oscillators, metabolic networks, cellular differentiation and neuronal communication are subject of intense scrutiny. The book is organized in three sections: The first includes selected examples of the circadian systems of crustaceans, insects, fish, birds and mammals. The second is a detailed view of the physiological mechanisms underlying the circadian clocks in mammals. Finally, in the third section some examples of the relevance of circadian biology and circadian misalignment to health and disease are provided including nutrition and metabolism, obesity, cancer, cardiovascular and pulmonary diseases, Huntington and affective diseases. This section concludes with a brief review on gene therapy and its potential use as a therapeutic tool to correct "clock genes" pathologies. This book is aimed at all those interested in contemporary aspects of physiology, biochemistry and molecular biology applied to the study and characterization of timing systems.. It could be used as an initial approach to this field, but it also provides updated information for those already familiar with the fascinating field of Chronobiology.

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