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Circadian Rhythms - Genetic Regulation and Clinical Disorders

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INTRODUCTION

Circadian rhythms are endogenously generated rhythms with a period length of about 24-hours. A biological clock in the hypothalamic suprachiasmatic nuclei is responsible for the generation of circadian rhythms. Notable examples of the circadian rhythms include the sleep-wake cycle and rhythms in hormone production. Abnormalities of the circadian system include biological clock lesions that result in arrhythmic behavior and irregular sleep patterns. Abnormalities of the circadian system also occur when there is desynchronization of environmental clock time with the phase of the "internal milieu" resulting in conditions such as "jet lag". Numerous aspects of human physiology are greatly influenced by the time of day, as is the pathogenesis of illness.

This review summarizes our current knowledge of the organization of the circadian system and the generation and regulation of biological clock function. The role the circadian system plays in human physiology along with the detection and treatment of biological clock disorders is also discussed.

Highlights In This Issue

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For The Editorial Board,
Robert M. Blizzard, MD
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