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Editorial

821 Obstructive Sleep Apnea Effects on the Right Ventricle and Beyond

Ajit Raisinghani, MD, Rachel Jen, MD, Joel Wilson, MD, and Atul Malhotra, MD

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On the Cover: Biological basis of circadian organ function. (Left) Schematic representation of the circadian hierarchical oscillator model. The suprachiasmatic nucleus in the hypothalamus synchronizes peripheral organ clocks, including the heart, to entrain to the 24-hour light-dark environment. (Right) The molecular clock mechanism keeps 24-hour time via transcription-translation feedback loops. The primary negative feedback loop consists of response element (RRE) driven systems: Circadian Locomotor Cycles Kaput (BMAL1:-CLOCK), which leads to Period (PER) and Cryptochrome (CRY) production, PER:CRY phosphorylation by Casein 1 δ/ϵ (CK1 δ/ϵ), and PER:CRY self-repression. BMAL1:CLOCK also drives Nuclear Receptor Subfamily 1, Group D, Member 1 (REV-ERB α) expression, which represses BMAL1. This mechanism regulates expression of clock-controlled genes (ccg) which regulate rhythmic biological processes. From the review article "Consequences of Circadian and Sleep Disturbances for the Cardiovascular System," by Alibhai et al., pages 860-872 of this issue.

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