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Sommario/riassunto	<p>One of the major breakthroughs of the last decade in the understanding of energy homeostasis is the identification of a reciprocal control between circadian rhythmicity and cellular metabolism. Circadian rhythmicity is a fundamental endogenous process of almost every organism living on Earth. For instance, the alternation of hunger and satiety is not continuous over 24 h, but is instead structured in time along the light/dark cycle. In mammals, the temporal organization of metabolism, physiology and behavior around 24 h is controlled by a network of multiple cellular clocks, synchronized via neuronal and hormonal signals by a master clock located in the suprachiasmatic nuclei of the hypothalamus. This central circadian conductor in the brain is mainly reset by ambient light perceived by the retina, while secondary circadian clocks in other brain areas and peripheral organs can be reset by meal timing. Chronic disruption of circadian rhythms, as seen in human shift-workers (up to 20% of the active population), has been associated with the development of a number of adverse mental and metabolic conditions. Understanding of the functional links between circadian desynchronization and overall health in animal models and humans, however, is still scarce. Interactions between circadian clocks and metabolism can occur at different levels: the molecular clockwork, internal synchronization via neuro-hormonal signals, or external synchronization via photic or feeding cues. This Research Topic</p>

comprises a number of reviews as well as research and methods articles that feature recent advancements in the mechanisms linking circadian clocks with energy metabolism, and the pathophysiological implications of these interactions for metabolic health.

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