

ABSTRACT

The circadian system has evolved as an adaptation to periodically changing conditions on Earth. In mammals, and therefore in humans, the circadian system consists of the central and peripheral oscillators generating a circadian rhythm. One of the most significant process exhibiting circadian rhythm is the sleep-wake cycle. Sleep is regulated by cooperation of circadian and homeostatic process. There are changes in circadian regulation of sleep during ontogenesis in human. The changes mainly relate to chronotype, i.e., to the diurnal preferences of activity and sleep. In the first years of life, there is a typical morning chronotype. In the end of first decade of life, the circadian phase begins to delay and reaches its maximal eveningness during adolescence. In adulthood, the preference changes again toward morning chronotype and reaches extreme morningness in elderly. Changes in circadian regulation of sleep during ontogenesis depend not only on age, but also on sex.