

Phase of clock gene expression in human leukocytes correlates with habitual sleep timing

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The phase of clock gene expression in leukocytes, assessed in the absence of the masking effects of light-dark and sleep-wake cycles, correlates with habitual sleep timing, according to a study published in the May 1 issue of the journal *Sleep*.

The study, authored by Simon N. Archer, PhD, of the University of Surrey in Guildford, England, and colleagues, focused on 24 healthy subjects in a home environment and clinical research center setting. Blood sampling was provided every hour during an approximate 40-hour constant routine in the absence of a sleep-wake cycle. Actigraphy and sleep diaries were used to characterize sleep timing.

“We have very accurately measured the circadian oscillations in genetic markers of a peripheral circadian clock in human leukocytes,” said Dr. Archer. “We have done this in controlled, constant routine conditions in the absence of masking sleep/wake activity.

We have shown significant correlations between the oscillations of these clock genes and hormone rhythms and sleep/wake cycles within individuals. Moreover, we have compared individuals with differences in the clock gene PER3, and find that these individuals also show differences in these correlations.

This study is important because it shows for the first time that the timing of a human peripheral clock correlates with hormonal circadian markers and sleep/wake activity. It also shows that a polymorphism within a clock gene can affect these timing correlations.”

Source: American Academy of Sleep Medicine

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