

Declining polyamine levels tied to longer circadian period

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(HealthDay)—A group of metabolites whose levels decline as people age appear to have an effect on the circadian clock, according to a study published online Oct. 8 in *Cell Metabolism*.

Ziv Zwihaft, from the Weizmann Institute of Science in Israel, and colleagues used mouse models and cell cultures to assess polyamines. Circadian locomotor activity was assessed by monitoring wheel running activity. RNA transcription was assessed with real-time [polymerase chain reaction](#).

The researchers found that polyamine levels oscillate daily. The daily accumulation of key enzymes in polyamine biosynthesis is regulated by both clock- and feeding-dependent mechanisms, such as the rhythmic binding of BMAL1:CLOCK to conserved DNA elements. In cultured

cells and animals, polyamines control the circadian period by regulating the interaction between the core clock repressors PER2 and CRY1. The longer circadian period associated with the decline in polyamine levels with age in mice can be reversed with polyamine supplementation.

"Our findings suggest a crosstalk between circadian clocks and polyamine biosynthesis and open new possibilities for nutritional interventions against the decay in clock's function with age," conclude the authors.

More information: [Abstract](#)
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