

# Overweight? New research explains how proper sleep is important for healthy weight

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If you're counting calories to lose weight, that may be only part of the weight loss equation says a new research report published online in *The FASEB Journal*. In the report, French scientists show that impairments to a gene known to be responsible for our internal body clocks, called "Rev-Erb alpha," leads to excessive weight gain and related health problems. This provides new insights into the importance of proper alignment between the body's internal timing and natural environmental light cycles to prevent or limit excessive weight gain and the problems this weight gain causes.

According to Etienne Challet, Ph.D., a researcher involved in the work from the Department of Neurobiology of Rhythms at the Institute of Cellular and Integrative Neurosciences at the University of Strasbourg in Pascal, France, "It is now clear that impairment of daily rhythms such as shift-work, exposure to [artificial lighting](#), or jet-lag has multiple adverse effects on human health, every effort should be made to maintain or restore normal temporal organization and to avoid potentially disruptive behaviors such as nocturnal meals or [light exposure](#) at night."

To make this discovery, Challet and colleagues studied two groups of mice. One group was normal and the other group lacked the Rev-Erb alpha gene. In the mice lacking the Rev-Erb alpha gene, it was determined that they became obese and hyperglycaemic even if they ate the same quantity of food at the same time as normal mice. Further scientific investigation showed that when the Rev-Erb alpha-deficient mice were compared to the normal mice, there was a major difference in the way Rev-Erb alpha-deficient mice metabolized the food they ate. The Rev-Erb alpha deficient mice created much more fat than the normal mice, and this occurred specifically during the feeding period. Additionally, the Rev-Erb-alpha deficient mice relied less on carbohydrate stores when at rest.

"The phrase 'sick and tired' could never be more

true," said Gerald Weissmann, M.D., Editor-in-Chief of *The FASEB Journal*. "This research shows that we evolved to live in synch with the natural light and dark cycles of our planet. Strasbourg has long taught us the finer aspects of cuisine; its scientists now explain how night and day can influence whether we are fat or lean."

**More information:** Julien Delezie, Stéphanie Dumont, Hugues Dardente, Hugues Oudart, Aline Gréchez-Cassiau, Paul Klosen, Michèle Teboul, Franck Delaunay, Paul Pévet, and Etienne Challet. The nuclear receptor REV-ERB $\alpha$  is required for the daily balance of carbohydrate and lipid metabolism. *FASEB J.* [doi:10.1096/fj.12-208751](https://doi.org/10.1096/fj.12-208751)

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