

News and Views

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NEWS

Fat cells exhibit a day-night circadian rhythm

Fat cells in the body have their own biological clocks and they exhibit circadian rhythms affecting various metabolic functions. Circadian rhythms are approximately 24 hour changes governed by the body's internal clock. Imbalance between the human clock and the environment is believed to be one of the major contributor of obesity. Jonathan et al conducted several experiments on human fat cells and analyzed the circadian rhythm of the fat cells and their gene expressions were studied.^[1] Researchers have identified 727 genes in the fat tissue that express their own circadian rhythm. A clear separation in gene rhythms was identified with approximately a third peaking in the morning and two thirds in the evening. Morning-peaking transcripts were associated with regulation of gene expression and nucleic acid biology while the evening –peaking transcripts were associated with redox activity and acid metabolism. These rhythms clearly show that genes within fat cells naturally complete their functions at different times during the day which could impact on their metabolic processes. Hence, fat cells don't just store the excess energy but they are active metabolic tissues, full of their own rhythms.^[1]

VIEWS

Craving for fatty foods are more during dieting

Craving for foods high in fat is an important part of obesity and binge eating. When trying to lose weight people often strive to avoid fatty foods, which ironically increases the motivation and craving for these foods and lead to overeating. The longer the someone abstains from fatty food, the greater will be the craving. A group of researchers from The University of Texas have performed an experiment on a group of rats and found that the rats that spent a month eating a low fat diet successfully inhibited the fatty food seeking behavior. Several behavioral studies have demonstrated that denying certain foods, like being on diet, causes increased craving and motivation for that food. Researchers have identified a new brain circuit that may act as a brake on binge eating and junk food craving. However, further research has to be carried out to study the exact brain mechanisms that lead to this type of overeating.

REFERENCE

1. Jonathan *et al*. Fat cells work different shifts throughout the day. ScienceDaily 2019: 02; 190-191.