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Time-restricted eating reshapes gene expression and helps fight cancer, diabetes: Study

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By **Manbeena Chawla** | January 5, 2023



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Numerous studies have shown health benefits of time-restricted eating including increase in life span in laboratory studies, making practices like intermittent fasting a hot topic in the wellness industry. However, exactly how it affects the body on the molecular level, and how those changes interact across multiple organ systems, has not been well understood.

Now, scientists at Salk Institute in the US show in mice how time-restricted eating influences gene expression across more than 22 regions of the body and brain. Gene expression is the process through which genes are activated and respond to their environment by creating proteins.

"We found that there is a system-wide, molecular impact of time-restricted eating in mice," says Professor Satchidananda Panda, senior author and holder of the Rita and Richard Atkinson Chair at Salk. "Our results open the door for looking more closely at how this nutritional intervention activates genes involved in specific diseases, such as cancer."

The researchers also found that time-restricted eating aligned the circadian rhythms of multiple organs of the body. These findings could open a new line of research to study how jobs with shiftwork, which disrupts our 24-hour biological clock (called the circadian rhythm) impact digestive diseases and cancers.

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