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Dawn-to-sunset fasting suggests potential new treatment for obesity-related conditions

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Fasting from dawn to sunset for 30 days increased levels of proteins that play a crucial role in improving insulin resistance and protecting against the risks from a high-fat, high-sugar diet, according to research presented at Digestive Disease Week (DDW) 2019. The study, which was based on the fasting practices of Ramadan, a spiritual practice for Muslims, offers a potential new treatment approach for obesity-related conditions, including diabetes, metabolic syndrome and non-alcoholic fatty liver disease (NAFLD).

"According to World Health Organization data, obesity affects over 650 million people worldwide, placing them at risk for any number of health conditions," said Ayse Leyla Mindikoglu, MD, MPH, lead author of the study and associate professor of medicine and surgery at Baylor College of Medicine, Texas. "Feeding and fasting can significantly impact how the body makes and uses proteins that are critical to decreasing insulin resistance and maintaining a healthy body weight. Therefore, the timing of and duration between meals could be important factors to consider for people struggling with obesity-related conditions."

The pilot study included 14 healthy individuals who fasted (no food or drink) approximately 15 hours a day from dawn to sunset for 30 days during Ramadan. Researchers collected blood samples from the individuals before beginning the religious fast, again at the fourth week of fasting, and then one-week post-fasting. Resulting blood samples showed increased levels of tropomyosin (TPM) 1, 3 and 4, proteins that have a role in maintaining healthy cells and cell repairs important to the

body's response to insulin.

TPM3 plays a key role in increasing insulin sensitivity, which allows the cells of the body to use blood glucose more effectively, reducing blood sugar. Findings from the study showed a significant increase in TPM3 gene protein products between the initiation of the fast and the test one week afterwards. Similar results over that period were found for TPM1 and TPM4 gene protein products.

"We are in the process of expanding our research to include individuals with metabolic syndrome and NAFLD to determine whether results are consistent with those of the healthy individuals," said Dr. Mindikoglu. "Based on our initial research, we believe that dawn-to-sunset fasting may provide a cost-effective intervention for those struggling with obesity-related conditions."

More information: Dr. Mindikoglu will present data from the study, "Dawn to sunset fasting for 30 days induces tropomyosin 1, 3 and 4 genes in healthy volunteers: its clinical implications in metabolic syndrome and non-alcoholic fatty liver disease," abstract 951b, on Tuesday, May 21, at 10:15 a.m. PDT.

Provided by Digestive Disease Week