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Obesity gene linked to hormonal changes that favor energy surplus

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A new study from Uppsala University demonstrates that elderly humans carrying a common variant of the fat mass and obesity gene FTO also have a shifted endocrine balance. Low blood concentrations of the satiety hormone leptin and high blood concentrations of the hunger promoting hormone ghrelin makes carriers of the FTO gene put on weight. The findings are published in the journal *Diabetes*.

In the Prospective Investigation of the Vasculature in Uppsala Seniors, researchers from Uppsala University and the University of Umeå used data from 985 elderly participants (50% females) with an average age of 70 years to examine whether circulating levels of ghrelin and leptin, measured after an overnight fast, are linked to a common variant of FTO.

"We found that elderly carrying an obesity-susceptible variant of the FTO gene had plasma ghrelin levels that were approximately 9 percent higher than in non-carriers. In contrast, serum levels of the satiety enhancing hormone leptin were roughly 11 percent lower", says Christian Benedict, researcher at Uppsala University.

"The present findings suggest that this FTO variant may facilitate weight gain in humans by shifting the endocrine balance from the satiety hormone leptin toward the hunger promoting hormone ghrelin", says Christian Benedict.

More information: Benedict C et al. Brief communication: The fat

mass and obesity-associated gene (FTO) is linked to higher plasma levels of the hunger hormone ghrelin and lower serum levels of the satiety hormone leptin in older adults. *Diabetes* (in press)

Provided by Uppsala University