

GLP-1 secretion is reduced in overweight, pre-diabetes and type 2 diabetes

February 26 2015

GLP-1 is a hormone that regulates glucose levels in the body by stimulating the secretion of insulin, and GLP-1 also inhibits appetite.

"We have found that GLP-1 is reduced by up to 25% among people with pre-diabetes and up to 20% among obese people compared to normal weight people. This indicates that the reduction in GLP-1 is not a consequence of type 2 diabetes, but appears much earlier in the disease development and may predispose people to type 2 diabetes," says one of the lead investigators Kristine Faerch, Senior Research Fellow at the Steno Diabetes Center in Gentofte, Denmark.

"It is a novel finding," says the other leading investigator Signe Soerensen Torekov, Assistant Professor at the University of Copenhagen. "And what is surprising is that we have also found pronounced differences in GLP-1 secretion between men and women. We have observed a higher GLP-1 response among women than men, but when glucose tolerance worsens, the decline in GLP-1 secretion is more pronounced in women than in men."

The world's largest study

Almost 6,000 blood samples from 1,500 people participating in the Danish ADDITION-PRO study have been analysed by the world leading GLP-1 laboratory at the Section for Translational Metabolic Physiology at Copenhagen University:

"This is by far the largest study in the world analysing the GLP-1 secretion, and it puts an end to a long debate whether or not an impaired secretion contributes to [diabetes](#) development," says Scientific Director, Professor Jens Juul Holst at the Novo Nordisk Foundation Center for Basic Metabolic Research and Department of Biomedical Sciences, Copenhagen University.

Clinical implications

The new findings may have important clinical implications. "It is an encouraging finding suggesting that early intervention with GLP-1 analogues may postpone the onset of [type 2 diabetes](#). We should use the findings in prevention strategies for type 2 diabetes and I hope to see results from longitudinal studies in the future, where we can follow the development in GLP-1 [secretion](#) over time in people who develop diabetes," says Professor Marit Eika Joergensen, Principal Investigator, Clinical Epidemiology at Steno Diabetes Center and Medical Doctor in the Steno clinic.

Provided by University of Copenhagen

Citation: GLP-1 secretion is reduced in overweight, pre-diabetes and type 2 diabetes (2015, February 26) retrieved 7 May 2024 from <https://medicalxpress.com/news/2015-02-glp-secretion-overweight-pre-diabetes-diabetes.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.
