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OBESITY, APPETITE-REGULATION AND HOW TO MAINTAIN A HEALTHY WEIGHT LOSS - *THE BIOLOGICAL MECHANISMS BEHIND HEALTHY SUSTAINED WEIGHT LOSS IN HUMANS*

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Obesity affects one billion people and impairs all aspects of health. Success rates for maintaining long-term weight loss are very low, thus there is an acute need for more effective treatment strategies. The natural appetite inhibiting hormone glucagon-like-peptide-1 (GLP-1) is secreted from the intestine upon meal intake and reduces blood glucose and food intake. Obese people have low levels of GLP-1, but interestingly a sustained weight loss of 10 kg for one year induces a marked increase in GLP-1. Thus, high levels of GLP-1 seem to be part of successful weight loss maintenance. Treatment with GLP-1 analogues facilitates long term weight loss maintenance accompanied by substantial improvement in metabolic health, compared to similar weight loss obtained by conventional dietary-regimes. Furthermore, obese people can be grouped into high and low immuno-metabolic risk profiles by analyzing the full plasma proteomic profile, which opens up for more personalized treatment strategies. Finally, patients with the genetic heart disease Long QT Syndrome have exaggerated GLP-1 secretion and endocrine pancreatic dysfunction after sugar intake and thereby increased risk of serious hypoglycemia. Therefore, large amounts of sugar intake should be avoided. Conclusively, normalized GLP-1 levels are crucial for both body weight and glucose regulation in humans.

Biography

Signe Torekov is a human biologist with a strong background in clinical metabolic translational research combining basic metabolic genetics, physiology and treatment in humans. Her work has together with her research group already made seminal contributions to the understanding of human metabolism. Thus, the work has succeeded in showing the beneficial treatment potentials besides weight loss, for the appetite-inhibiting hormone GLP-1 in the alarming global epidemic of obesity. Furthermore, she has pinpointed the important link between Long QT Syndrome and risk of hypoglycemia thereby creating awareness of avoiding hypoglycemia by reducing sugar intake in these patients. Finally she has created a novel experimental approach for clinical translational metabolism in order to identify novel markers and predictors for human metabolic health. Signe Torekov´s research papers are currently being published in high-ranked international journals and she has obtained high-level funding for her research (more than €3.1 million during the last three years). In total, she has authored 44 peer-reviewed papers, much of this work has been published in high-ranking journals in the field (Cell Metabolism, Circulation, Diabetes, JCEM, Diabetologia, DOM, and Molecular Systems Biology with13 first and 16 last authorships), h-index of 16 and a total of 1022 citations (Web of Science, May 2017). Signe Torekov has received the prestigious Anders Jahre Young Medical Award of €26.000 as a personal award (also called "the young Nobel Prize in Medicine") in 2017. The prize was awarded "in recognition of Dr Torekovs´s outstanding scientific work. Besides that she has received several Young Investigator Awards and in 2016, she received the prestigious Novo Nordisk Foundation Excellence Fellowship of €673.000 given to excellent young researchers within endocrinology in the Nordic Countries. In 2015, she formed an international alliance in immuno-metabolism with top researchers at Oxford and Karolinska University. Together they received €5.4 million from the Novo Nordisk Foundation to identify new markers and treatment in immuno-metabolism

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