

Press release

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Basic information

Name: Marianne Kjær Poulsen
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Department of: Clinical Medicine

Main supervisor: Søren Nielsen

Title of dissertation: Very Low-density Lipoprotein Triglyceride Kinetics and Metabolism
Impact of nonalcoholic fatty liver disease and long-term, high-dose resveratrol

Date for defence: 12-12-2019 at (time of day): 13:00 Place: Bartholins Allé 3, 8000 Aarhus C

Press release (Danish)

Ny viden om nonalkoholisk fedtleversygdom og effekten af langtidsbehandling med kosttilskuddet Resveratrol

Nonalkoholisk fedtleversygdom er tæt forbundet med overvægt og deraf hjertekarsygdom med øget dødelighed til følge. Personer med nonalkoholisk fedtleversygdom har nedsat triglycerid omsætning såkaldt VLDL-TG, øget frie fede syrer sekretion fra underhudens fedtdepoter og nedsat glukose omsætning under faste. Insulin hæmmer VLDL-TG sekretionen fra leveren. Vi har undersøgt forskellen på VLDL-TG, frie fede syrer og glukose omsætningen under faste og under øget insulin tilførsel med stabil glukose niveau hos overvægtige mænd med og uden nonalkoholisk fedtleversygdom. Kosttilskuddet Resveratrol har vist positive effekter på insulin følsomheden med bedring af nonalkoholisk fedtleversygdom og bedring af flere risikofaktorer relateret til overvægt. Flere korttidsstudier på mennesker med overvægt, insulin resistens og diabetes er gennemført men med inkonklusive resultater. Langtidseffekten af kosttilskuddet Resveratrol blev herefter undersøgt i et dobbeltblindet placebokontrolleret klinisk forsøg. Vores to studier har vist at mænd med nonalkoholisk fedtleversygdom ligner diabetes patienter metabolisk med manglende insulin hæmning af VLDL-TG sekretion, manglende insulin hæmning af frie fede syrer sekretion fra fedtdepoterne og manglende glukose optagelse i musklerne efter insulin stimulering. Derimod viste langtidsbehandling med Resveratrol ingen positive metaboliske effekter eller en bedring af nonalkoholisk fedtleversygdom. Resultaterne er fremkommet under et nyt ph.d.-projekt fra Aarhus Universitet, Health. Projektet er gennemført af Marianne Kjær Poulsen, der forsvare det d. 12/12/2019.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 12/12/2019 kl. 13:00 i Auditorium Eduard Biermann, Aarhus Universitet, Bartholins Allé 3, 8000 Århus C. Titlen på projektet er "Very Low-density Lipoprotein Triglyceride Kinetics and Metabolism Impact of nonalcoholic fatty liver disease and long-term, high-dose Resveratrol". Yderligere oplysninger: Ph.d.-studerende Marianne Kjær Poulsen, e-mail: marianne.kjaer.poulsen@rsyd.dk, tlf. 28721903.

Bedømmelsesudvalg:

Bedømmelsesformand, Professor, PhD, Jens Meldgaard Bruun, Steno Diabetes Center Århus (SDCA), Århus Universitetshospital, Danmark.

Professor, DMSc, Kurt Højlund, Steno Diabetes Center Odense (SDCO), Odense Universitetshospital, Danmark.

Professor, PhD, FRCP, FRCPATH, Christopher D. Byrne, Akademisk enhed for menneskelig udvikling og sundhed, Det medicinske fakultet, Institut for Udviklingsvidenskab (IDS), South Hampton Universitet, England.

Press release (English)

New knowledge regarding nonalcoholic fatty liver disease and the effect of long-term treatment with the diet supplementation Resveratrol

Nonalcoholic fatty liver disease is closely related to obesity and consequently cardiovascular disease resulting in increased mortality. People with nonalcoholic fatty liver disease have decreased triglyceride turnover called VLDL-TG, increased free fatty acids secretion from the subcutaneous fat depots and decreased glucose turnover during fasting. Insulin inhibits the VLDL-TG secretion from the liver. We have investigated the difference between VLDL-TG, free fatty acids and glucose turnover during fasting and with increased insulin supply with stable glucose levels in obese men with and without nonalcoholic fatty liver disease. The dietary supplement Resveratrol has shown positive effects on insulin sensitivity with improvement of nonalcoholic fatty liver disease and improvement of several risk factors related to obesity. Several short-term studies on people with obesity, insulin resistance and diabetes have been completed but with inconclusive results. The long-term effects of the dietary supplement Resveratrol were then investigated in a double-blinded, placebo-controlled clinical trial. Our two studies have shown that men with nonalcoholic fatty liver disease are similar to diabetes patients metabolically with lack of insulin inhibition of VLDL-TG secretion, lack of insulin inhibition of free fatty acids secretion from fat depots, and lack of glucose uptake into muscle after insulin stimulation. In contrast, long-term treatment with Resveratrol showed no positive metabolic effects or improvement of nonalcoholic fatty liver disease. The results came from a new PhD project from Aarhus University, Health. The project was carried out by Marianne Kjaer Poulsen, who is defending her dissertation on 12/12-2019.

The defence is public and takes place on 12/12-2019 at 1 pm in Auditorium Eduard Biermann, Aarhus University, Bartholins Allé 3, 8000 Aarhus C. The title of the project is "Very Low-density Lipoprotein Triglyceride Kinetics and Metabolism

Impact of Nonalcoholic Fatty Liver Disease and Long-term, High-dose Resveratrol". For more information, please contact PhD student Marianne Kjaer Poulsen, email: marianne.kjaer.poulsen@rsyd.dk, Phone +45 28721903.

Assessment committee:

Chairman of the committee, Professor, PhD, Jens Meldgaard Bruun, Steno Diabetes Center Aarhus (SDCA), Aarhus University Hospital, Denmark

Professor, DMSc, Kurt Højlund, Steno Diabetes Center Odense (SDCO), Odense University Hospital, Denmark

Professor, PhD, FRCP, FRCPATH, Christopher D. Byrne, Human Development and Health Academic Unit, Faculty of Medicine, Institute of Developmental Sciences (IDS), University of South Hampton, England.

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