

## Press release

Please fill in this form and return it to [graduateschoolhealth@au.dk](mailto:graduateschoolhealth@au.dk) in Word format no later than three weeks prior to your defence.

### Basic information

Name: Kasper Faarkrog Høyer

Email: [kfaa@clin.au.dk](mailto:kfaa@clin.au.dk) Phone: +45 91316624

Department of: Clinical Medicine

Main supervisor: Niels Jessen, Professor, Head Of Research, Steno Diabetes Center Aarhus

Title of dissertation: Exploring the role of NAD salvage systems in the liver for substrate utilization using hyperpolarized magnetic resonance scanning

Date for defence: 22/3/2019 at (time of day): 13.00 Place: Aarhus Universitet, Søauditorierne - Eduard Biermann Auditoriet (Bygning 1252, lok. 204). Bartholins Allé 3, 8000 Aarhus C

Press release (Danish)

Exploring the role of NAD salvage systems in the liver for substrate utilization using hyperpolarized magnetic resonance scanning

Forekomsten af nonalkoholisk fedtlever er stigende på verdensplan. Ophobningen af fedt i leveren begynder som steatose, men kan udvikle sig til nonalkoholisk steatohepatitis, cirrose og hepatocellulær carcinom. Dyremodeller med nonalkoholisk fedtlever viser reduceret niveau af nikotinamid adenin dinukleotid. Tilskud af nikotinamid ribosid øger nikotinamid adenin dinukleotid indholdet i leveren og derved nedsætter udviklingen af steatose og insulinresistens hos mus og rotter. Nikotinamid adenin dinukleotid kan dannes ud fra nikotinamid af enzymet nikotinamid phosphoribosyltransferase. På nuværende tidspunkt er det uklart om nedsatte niveauer af nikotinamid adenin dinukleotid har sammenhæng med udviklingen af nonalkoholisk fedtlever og insulinresistens i mennesker.

Formål med dette ph.d.-projekt fra Aarhus Universitet, Health, har været at undersøge forholdet mellem nedsat nicotinamid phosphoribosyltransferase i leveren, pyruvat metabolisme og insulinresistens i en musmodel. Ph.d.-projektet er gennemført af Kasper Faarkrog Høyer, der forsvare hans afhandling d. 22/03/2019

Forsvaret af ph.d.-projektet er offentligt og finder sted den 22/03/2019 kl. 13.00 i Eduard Biermann Auditoriet, Aarhus Universitet, (Bygning 1252, lok. 204). Bartholins Allé 3, 8000 Aarhus C. Titlen på projektet er "Exploring the role of NAD salvage systems in the liver for substrate utilization using hyperpolarized magnetic resonance scanning". Yderligere oplysninger: Ph.d.-studerende Kasper Faarkrog Høyer, e-mail: [kfaa@clin.au.dk](mailto:kfaa@clin.au.dk), tlf. +45 91316624.

Bedømmelsesudvalg:

Associate professor Agnete Larsen - chairman of the committee and moderator of the defence  
Department of Biomedicine, AU, Denmark

Professor Erik Richter

Department of Nutrition, Exercise and Sports, University of Copenhagen, Denmark

Associate Professor Julio E. Ayala

Vanderbilt University, School of Medicine, USA

Press release (English)

Exploring the role of NAD salvage systems in the liver for substrate utilization using hyperpolarized magnetic resonance scanning

The prevalence of non-alcoholic fatty liver is increasing worldwide. Lipid accumulation begins as hepatic steatosis, but can progress to non-alcoholic steatohepatitis, cirrhosis, and hepatocellular carcinoma. Rodent models for non-alcoholic fatty liver show reduced hepatic nicotinamide adenine dinucleotide levels. In rodent models, supplementation with the nicotinamide adenine dinucleotide precursor nicotinamide riboside has eased steatosis formation and insulin resistance. Nicotinamide adenine dinucleotide is synthesized from nicotinamide through the action of nicotinamide phosphoribosyltransferase. At present, it is not known if decreased hepatic nicotinamide adenine dinucleotide levels are a causal factor in the development of non-alcoholic fatty liver disease and insulin resistance.

The aim of the project was to define the relationship between impaired nicotinamide phosphoribosyltransferase-mediated nicotinamide adenine dinucleotide synthesis, pyruvate metabolism, and insulin resistance in a mouse model. The project was carried out by Kasper Faarkrog Høyer, who is defending his dissertation on 22/03/2019.

The defence is public and takes place on 22/03/2019 at 13.00 in Eduard Biermann Auditoriet, Aarhus Universitet, (Bygning 1252, lok. 204). Bartholins Allé 3, 8000 Aarhus C. The title of the project is "Exploring the role of NAD salvage systems in the liver for substrate utilization using hyperpolarized magnetic resonance scanning". For more information, please contact PhD student Kasper Faarkrog Høyer, email: kfaa@clin.au.dk, Phone +45 91316624.

Assessment committee:

Associate professor Agnete Larsen - chairman of the committee and moderator of the defence  
Departement of Biomedicine, AU, Denmark

Professor Erik Richter

Department of Nutrition, Exercise and Sports, University of Copenhagen, Denmark

Associate Professor Julio E. Ayala

Vanderbilt University, School of Medicine, USA

## **Permission**

By sending in this form:

- I hereby grant permission to publish the above Danish and English press releases.
- I confirm that I have been informed that any applicable inventions shall be treated confidentially and shall under no circumstances whatsoever be published, presented or mentioned prior to submission of a patent application, and that I have an obligation to inform my head of department and the university's Patents Committee if I believe I have made an invention in connection with my work. I also confirm that I am not aware that publication violates any other possible holders of a copyright.