

Press release

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Basic information

Name: Jesper Guldsmid Madsen

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Department of: Clinical Medicine

Main supervisor: Michael Pedersen

Title of dissertation: Electrophysiological quantification of diabetic neuro- and retinopathy and oxygen treatment

Date for defence: 12/9/2019 at (time of day): 1:00 PM Place: Aarhus University Hospital

Press release (Danish)

Potentiale for iltbehandling af diabetisk neuro- og retinopati

Diabetes kan medføre adskillige alvorlige komplikationer. To af de mest udbredte, og potentielt skadelige, er diabetisk neuro- og retinopati. I et nyt ph.d.-projekt, der er gennemført på Aarhus Universitet, Health, er der blevet undersøgt, hvorvidt disse følgesygdomme er målbare i en diabetisk dyremodel, samt potentialet for at anvende iltbehandling mod disse sygdomme. Projektet er gennemført af Cand. Scient. Jesper Guldsmid Madsen, der forsvare det d. 12/9 kl. 13:00.

Diabetisk neuro- og retinopati er potentielt invaliderende komplikationer. Den ene kan medføre kroniske smerter og fejlregulering af flere organer, den anden nedsat syn og blindhed. Begge komplikationer har komplekse årsager, som ikke er veldefineret. Dog har nyere forskning etableret, at disse følgesygdomme kan være afstedkommet af reduceret iltlevering skabt af forringelse af de blodkar, som forsyner nerve og øjevævet med ilt via blodet. I dette ph.d.-projekt blev en elektrofysiologisk metode udviklet til at kvantificere omfanget af sygdommene i en diabetisk dyremodel. Denne metode blev så anvendt til at undersøge, hvorvidt behandling med øget ilttilgængelighed vil kunne afhjælpe de skader, som observeres ved sygdommene diabetisk neuro- og retinopati. Et offentligt forsvar af ph.d.-afhandlingen "Electrophysiological quantification of diabetic neuro- and retinopathy and oxygen treatment" vil finde sted d. 12. september kl. 13:00 i konferencerum på plan 4, indgang B3, Dansk Partikelcenter på Aarhus Universitetshospital Skejby, Palle-Juul-Jensens Blvd. 99, 8200 Aarhus N. Yderligere oplysninger: Ph.d.-studerende, Jesper Guldsmid Madsen, jesper.madsen@clin.au.dk, tlf. +4522782155.

Bedømmelsesudvalg:

Formand:

Professor Nanna Brix Finnerup, Institut for klinisk medicin, Aarhus Universitets Hospital

Øvrige medlemmer af bedømmelses udvalget:

Klinisk Professor Niels Ejsskær, Institut for klinisk medicin, Aalborg Universitets Hospital

Professor Jonathan Jarvis, Institut for sports og motionsvidenskab, John Moore Universitet, Liverpool

Hovedvejleder:

Professor Michael Pedersen, Comparative Medicine Lab, Aarhus Universitets Hospital

Press release (English)

Potential for oxygen treatment of diabetic neuro- and retinopathy

Diabetes is the cause of several severe complications. Two of the most prevalent, and potentially harmful, are diabetic neuro- and retinopathy. A new Ph.D.-project carried out at Aarhus University, Health, has examined whether these complications are measurable in a diabetic animal model and the

possibility of using increased oxygen for treatment of the complications. The project was carried out by MSc. Jesper Guldsmid Madsen who is defending his dissertation on 12 September at 1:00 PM.

Diabetic neuro- and retinopathy are two debilitating complications of diabetes. The former leads to chronic pain and dysregulation of several organs, the latter reduced vision and blindness. The origins of both complications are complex and not fully understood. However, recent research has established that reduced oxygen delivery in the nervous and eye tissue, caused by deterioration of the vasculature can be part of the cause. In this Ph.D.-project, an electrophysiological method for measuring the impact of the complications in an animal model was developed. This method was then used to examine whether treatment with increased oxygen availability could mitigate the damage which is observed in cases of diabetic neuro- and retinopathy. The defense is public and takes place on 12 September at 1:00 PM, in the auditorium at level 4, entry B3, Danish Particle Center, Aarhus University Hospital Skejby, Palle-Juul-Jensens Blvd. 99, 8200 Aarhus N. For more information please contact PhD student Jesper Guldsmid Madsen, jesper.madsen@clin.au.dk, phone +4522782155.

Assessment committee:

Chairman:

Professor Nanna Brix Finnerup, Institute of Clinical Medicine, Aarhus Universitets Hospital

Additional committee members:

Clinical Professor Niels Ejlskær, Institute of Clinical Medicine, Aalborg Universitets Hospital

Professor Jonathan Jarvis, Institute of Sports and Exercise Science, John Moore Universitet, Liverpool

Main Supervisor:

Professor Michael Pedersen, Comparative Medicine Lab, Aarhus Universitets Hospital

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