

Press release

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Basic information

Name: Signe Kirk Fruekilde Email: skf@cfm.au.dk Phone: 28253176

Department of: Clinical Medicine

Main supervisor: Kim Ryun Drasbek

Title of dissertation: Longitudinal imaging of cerebrovascular dynamics in awake mice using optical techniques

Date for defence: 18th of august 2021 at (time of day): 16:00 Place: Samfundsmedicinsk auditorium

Press release (Danish)

Hjernens kar og systemisk inflammation

Neuroner er ekstremt følsomme overfor manglende næring. For at bevare en sund og velfungerende hjerne, er det derfor vigtigt, at blodcirkulationen konstant sørger for at tilføre nærings og ilt og at fjerne affaldsstoffer.

Dette forsvar vil beskrive udviklingsprocessen af en eksperimentel procedure og analyse protokol, som gør det muligt at undersøge hjernens blodkar i mus. Her viser vi, hvordan en svær inflammatorisk tilstand forstyrrer hjernens kar og skaber sporadiske blokeringer af blodgennemstrømningen i de mindste kapillærer. Eftersom ilt og næring under sådanne omstændigheder kan være en mangelvare, diskuteres resultaterne som en potentiel trussel af hjernens sundhed.

Den udviklede eksperimentelle procedure og analyse protokol viser potentiale til anvendelse i yderligere undersøgelser af sammenspillet mellem hjernens aktivitet og blodtilførsel, både alene eller i kombination med andre teknikker, for at opnå et mere fuldkomment helhedsbillede af hjernens sundhed.

Dette nye ph.d.-projekt fra Aarhus Universitet, Health. Projektet er gennemført af Signe Kirk Fruekilde, der forsvare det d. 18/08.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 18/08 kl. 16:00 i Samfundsmedicinsk auditorium, Aarhus Universitet, Bartholins Allé bygning 1262, Aarhus. Titlen på projektet er "Longitudinal imaging of cerebrovascular dynamics in awake mice using optical techniques".

Yderligere oplysninger: Ph.d.-studerende Signe Kirk Fruekilde, e-mail: skf@cfm.au.dk, tlf. +45 28253176.

Bedømmelsesudvalg:

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Associate professor Andy Shih

Center for Developmental Biology and Regenerative Medicine, Seattle Children's Research Institute & University of Washington

Professor, Senior Consultant Kirsten Møller

Department of Neurointensive Care and Neuroanaesthesiology, Neuroscience Centre, University Hospital Rigshospitalet & Department of Clinical Medicine, Faculty of Health Sciences, University of Copenhagen

Press release (English)

The neurovascular system and general inflammation

Neurons are extremely vulnerable to starvation. Therefore, a well-functioning vascular system that provides nutrients and oxygen, and removes waste, is crucial for maintaining a healthy cerebral environment.

This defence will describe the process of designing an experimental setup and analysis protocol, which allowed for a longitudinal investigation of the cerebral vascular system in mice. Overall, we revealed how a severe systemic inflammation caused a disturbance in the normal flow of blood within the capillary network. These findings are discussed as a potential danger to neuronal health, since demands of oxygen and nutrition may not be met by the vascular system during inflammation.

The potential of the developed protocols extends beyond inflammation to many questions related to the health and resilience of the cerebrovascular system.

The project was carried out by Signe Kirk Fruekilde, who is defending her dissertation on 18/08.

The defence is public and takes place on 18/08 at 16:00 in Samfundsmedicinsk auditorium, Aarhus University, Bartholins Allé building 1262, Aarhus. The title of the project is "Longitudinal imaging of cerebrovascular dynamics in awake mice using optical techniques". For more information, please contact PhD student Signe Kirk Fruekilde, email: skf@cfm.au.dk, Phone +45 28253176.

Assessment committee:

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Associate professor Andy Shih

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