

第47回量子生命セミナー（スピニン生命フロンティア後援）

日時：2026年3月11日（水） 10時～10時50分

会場：量子科学技術研究開発機構 量子生命科学研究所 量子生命棟セミナー室



講演タイトル：

Quantitative MRI Approaches to Cerebral Microvascular Function

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A methods-based look at how quantitative MRI and pharmacokinetic modelling can be used to develop imaging biomarkers of microvascular function, including perfusion, blood-brain barrier permeability, mean transit time, and capillary transit time heterogeneity. Applications to clinical disease cohorts illustrate how these methods can reveal subtle vascular dysfunction beyond conventional structural MRI.

RESEARCH OUTPUTS

2025 (In preparation, 1st Author) **Reduced cerebral oxygen metabolism in persistent post-concussion syndrome after mild traumatic brain injury**, *In preparation for Journal of Cerebral Blood Flow and Metabolism*, Rigshospitalet & University of Copenhagen, Copenhagen, Denmark

2025 (In preparation, 1st Author) **p-Brain: Automated Multimodal MRI Pipeline for Cerebral Perfusion, Diffusion, Capillary Transit Time Heterogeneity and Blood-Brain Barrier Permeability**, *In preparation for eLife*, Rigshospitalet & University of Copenhagen, Copenhagen, Denmark

2025 (Submitted, 1st Author) **Constraining Heavy Neutral Leptons Coupled to the Tau-Neutrino Flavor at the Large Hadron Collider**, *Submitted to Physical Review D* ([arXiv:2510.12248](https://arxiv.org/abs/2510.12248)), Niels Bohr Institute, Copenhagen, Denmark

2025 (Submitted, 3rd Author) **Quantifying Capillary Transit Time Distribution: A Novel Tracer Kinetic Model Accounting for Leakiness, Backdiffusion, and Perfusion in MRI and PET Imaging (“The Outflow Model”)**, *Submitted to European Journal of Nuclear Medicine and Molecular Imaging*, Rigshospitalet & University of Copenhagen, Copenhagen, Denmark

2025 (In preparation, 5th Author) **The Rehabilitation in persistent Post-Concussion Symptoms trial (The REPCon-trial): Study protocol for an assessor blinded, parallel-group, randomised controlled trial of tailored sub-symptomatic aerobic exercise in adult patients with persistent post-concussion symptoms (PPCS)**, *In preparation for Journal of Magnetic Resonance Imaging*, Rigshospitalet & University of Copenhagen, Copenhagen, Denmark

問い合わせ先：

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