

The dyslexia oscillome: Development of auditory and visual neural processing in children from age 3 at risk for dyslexia

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Company: KU Leuven

Location: Leuven

Category: other-general

The DYSCO research collaboration of the KU Leuven, University of Leuven, Belgium, is looking for candidates with

A strong interest in dyslexia, children learning disorders, and developmental disorders

a degree (or will obtain degree in July or September 2024) in audiology, speech sciences, experimental cognitive psychology, physics, or similar

a strong interest in interdisciplinary work.

an interest in auditory perception

an inquisitive mind, good problem solving skills

very good English proficiency

knowledge of Dutch language is highly recommendable

knowledge of EEG, human neurophysiology, psychoacoustics and psychology of hearing is a benefit

Dyslexia is one of the most prevalent developmental disorders, estimated to affect up to 7% of the population. To date, dyslexia is usually diagnosed in second grade or later, when reading and/or spelling difficulties demonstrate to be severe and persistent. Despite remedial interventions provided after diagnosis, literacy problems often continue into

adulthood, resulting in a life-long experience with reading failure. To allow for preventive as well as more effective interventions, an earlier identification of children at risk for dyslexia is needed. Therefore, several decades of research have strived to identify the causal factors underlying dyslexia.

The aim of this project is to investigate the novel hypothesis that neural oscillatory mechanisms in auditory and visual modalities play a foundational role in oral and written language development. In both modalities, theoretical frameworks have described two neural timescales, i.e., delta-theta and beta-gamma oscillations, sustaining the temporal encoding of phonological and orthographical information. There is accumulating evidence supporting this hypothesis in experienced readers, at least with regard to the auditory modality, but information is lacking on whether and how auditory and/or visual oscillatory mechanisms influence early language acquisition. By longitudinally investigating behavioral and neural measures in a unique sample of pre-reading children, this project will shed new light on the cause(s) of dyslexia.

Experimental Oto-rino-laryngology (ExpORL) is one of the research groups of the Department of Neurosciences, and focuses on research about normal and pathological human communication and about ORL-related aspects, audiology and speech-language pathology.

Exciting auditory research

A PhD title after 4 years of research

A thorough scientific education, the possibility to become a world-class researcher

Membership of a world-renowned lab and dyslexia collaboration DYSCO, as part of a motivated interdisciplinary team

Membership of KU Leuven, one of the largest research universities of Europe

The possibility to take part in international conferences and collaborations

A competitive salary

Join our team! And help us detect early and reduce the impact of dyslexia on reading children

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