Symposium Title:
Freezing-of-gait rehabilitation: from pathophysiological perspectives to current and future treatment approaches

Organizer:
Dr. Jorik Nonnekes
Radboud University Medical Centre
Jorik.nonnnekes@radboudumc.nl

Symposium Description:
Freezing of gait (FOG) is a debilitating motor symptom commonly seen in persons with Parkinson's disease and atypical parkinsonism. During episodes of FOG, patients have the feeling that their feet are being glued to the floor. Management of FOG is complex, and requires a multifaceted approach, which is increasingly informed by knowledge on the pathophysiological substrate of FOG. The aim of this symposium is to inform the audience on the clinical presentation and detection of FOG, its presumed pathophysiological substrate, and how this is informing current and promising treatment approaches. We will first highlight that FOG is a heterogenous condition and elaborate on its latest definition and state-of-the-art methods to detect FOG episodes accurately. We subsequently present the latest insights into the pathophysiological mechanisms underlying FOG and how they are guiding pharmacological, surgical and non-pharmacological treatment approaches. We end our session by elaborating on promising future treatment approaches, with a focus on the integration of wearable technology into FOG rehabilitation. Our session will aid the audience's understanding of this complex phenomenon and assist in their clinical decision-making for FOG rehabilitation.

Rationale and relevance of Symposium:
FOG is reckoned among the most debilitating motor symptoms of Parkinson's disease. It puts affected individuals at risk for falls and fall-related injuries and leads to a decline in functional mobility and independence, negatively impacting quality of life. The management of FOG is challenging. A widely used treatment algorithm was proposed a decade ago. However, since then the general knowledge regarding the mechanisms underlying FOG, and methods to study FOG has advanced considerably. We here present the latest insights into the pathophysiological substrate and link this to practical recommendations for daily clinical practice. Moreover, the identified knowledge gaps and future treatment approaches will inspire researchers to set-up well-designed and evidence-based clinical trials for persons with FOG.

Learning Objectives:
1. The pathophysiology of FOG involves a dysfunction across multiple and variable neural circuits.
2. Optimal management of FOG should consist of at least the following components: a) reducing excessive inhibitory outflow of the basal ganglia; and b) facilitating gait via processing across compensatory networks.
3. Wearable technology holds promise for the detection of FOG, gait training, and on-demand use of compensation strategies.

Proposed Speakers & Presentations:
Provide a list of proposed speakers and the title of their presentations. If possible, include their academic affiliation and relevant expertise.

1. Speaker 1 Maaike Goris (MSc, Ku Leuven)
   Presentation Title: How to define [MG1]and assess freezing of gait in Parkinson's disease?

2. Speaker 2 Moran Gilat, (PhD, KU Leuven)
   Presentation Title: Pathophysiological mechanisms of freezing of gait in Parkinson's disease

3. Speaker 3 Jorik Nonnekes, MD PhD
   Presentation Title: Evidence-based recommendations for the treatment of freezing of gait

4. Speaker 4 Melvyn Roerdink (Title, Affiliation)
   Presentation Title: Promising avenues for freezing of gait treatment: can we go to virtually [MG2]no freezing?