Martinica Garofalo

Project title: *Retrospective assessment of early motor repertoire and movement disorders-like features in school aged children with Developmental Coordination Disorder*

Duration	3 months
Short Bio	I am a MD-PhD candidate at the department of Paediatric Neurology at the University Medical Center Groningen (UMCG) in Groningen, the Netherlands. In my PhD project, I focus on paediatric coordination impairments, mainly Early-Onset Ataxia (EOA) and Developmental Coordination Disorder (DCD). These two disorders are etiologically different but present with overlapping phenotypes and are therefore difficult to discern from each other. However, their distinction is very important, because these disorders require a different therapeutic approach. My PhD project has two main aims: 1) to explore the underlying biological and pathogenetic mechanisms leading to EOA and DCD (through *in silico* anatomical, biological, tissue expression and temporal gene expression analyses), and 2) to improve the clinical distinction between these two disorders in patient cohorts.
Home Institution	University Medical Center Groningen (UMCG), Groningen, the Netherlands
Host institution	IRCCS Fondazione Stella Maris, Pisa, Italy
Project description	In this project, we aimed at exploring a possible relationship between early motor repertoire and the development of a neurodevelopmental condition known as Developmental Coordination Disorder (DCD). We retrospectively assessed different aspects of early motor repertoire through video-recordings at 0-4 year and neurological information from medical files. We compared children with DCD to typically developing children. The assessed aspects included the quality of general movements at writhing and fidgety age, the

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	longitudinal development of gross- and fine motor skills, the analysis of movement disorders-like features and the presence of comorbid neurodevelopmental features at older age (above 4 years). The analysed data will hopefully be published in the near future.
Personal statement	On a professional level, this fellowship has given me the chance to deepen my knowledge in my main research interests, which lie in the developmental neurology and movement disorders. The techniques and skills I learnt during this fellowship have a great clinical applicability and will allow me look with a more critical eye at the motor patterns and development of children at risk for neurodevelopmental- and movement disorders. This will help me make a quicker risk assessment of their condition, which is important for an effective follow-up and treatment. On a personal level, it was very nice for me to do research and experience the work life in my home country. The connections I have made during my fellowship will remain of great importance in my future career as well as they are now. I am very thankful to the ERN for having me awarded this great opportunity.

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