



MASTER 2 Fundamental and Clinical Neurosciences

Internship proposal 2022-2023

(internship from January to June 2023)

Host laboratory: *Centre de Recherche en Neurosciences de Lyon, CH Le Vinatier - Bâtiment 462 - Neurocampus, 95 Bd Pinel, 69500 Bron*

Host team : *EDUWELL team (<https://www.crn.fr/fr/equipe/eduwell>)*

Internship supervisors :

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Neurofunctional processing of object category perception, saccades and calculation in children with and without Developmental Coordination Disorder: an fMRI and DTI study.

Dyspraxia, or developmental coordination disorder, affects 5% of children. Dyspraxic children have difficulty coordinating their movements. These difficulties have an impact on handwriting, which greatly hinders them at school. Difficulties in mathematics have also been described. Finally, the eye movements of these children are disturbed. Existing functional magnetic resonance imaging (fMRI) studies in dyspraxic children are still lacking (See our review Gomez & Sirigu, 2015). We recruited 15 neurotypical children and 15 children with dyspraxia aged 8 to 10 years to perform a functional MRI study using calculation tasks, tasks involving eye movements (tracking task) and visual category tasks (houses, faces, numbers..). Diffusion tensor imaging data were also recorded. The objective of the internship is to analyze functional and diffusion MRI data by comparing the results of the group of dyspraxic children to those of control children.

3-5 recent publications :

1. Gomez, A., & Huron, C. (2020). Subitizing and counting impairments in children with developmental coordination disorder. *Research in Developmental Disabilities, 104*, 103717.
2. Sumner, E., Hutton, S. B., Kuhn, G., & Hill, E. L. (2018). Oculomotor atypicalities in developmental coordination disorder. *Developmental science, 21*(1), e12501.
3. Huron, C. (2020). Developmental coordination disorder. *La Revue du praticien, 70*(6), 683-686.
4. Gomez, A., & Sirigu, A. (2015). Developmental coordination disorder: core sensori-motor deficits, neurobiology and etiology. *Neuropsychologia, 79*, 272-287.
5. Vaivre-Douret, L., Mazeau, M., Jolly, C., Huron, C., Arnaud, C., Gonzalez-Monge, S., & Assaiante, C. (2021). L'expertise collective de l'Inserm sur le trouble développemental de la coordination ou dyspraxie: état des principaux travaux et recommandations. *Neuropsychiatrie de l'Enfance et de l'Adolescence, 69*(6), 311-330.

Please send your proposal to marion.richard@univ-lyon1.fr for publication on the Master of Neuroscience website.