

PhD Position

The thesis is funded by the region “*Pays de la Loire*” and the University of Nantes (France) – at the start of university year 2017-18

Duration of grants: 36 months (about 1374 Euros a month – tax free – 1500 US\$; Average rent for an apartment in Nantes: about 500€)

Other possible grants devoted to congress participation, computers purchase... up to 3000 Euros

Diagnostic and prognostic value of psychomotor retardation in depression

- ✓ Place : Faculty of Sport Sciences – University of Nantes (France)
- ✓ Laboratory: « [Movement, Interactions, Performance](#) » (E.A. 4334)
- ✓ Supervisors: Thibault DESCHAMPS (Associate Professor) – Anne SAUVAGET (MD psychiatrist – PhD) – Véronique THOMAS-OLLIVIER (Associate Professor)
- ✓ Collaboration: Addictology and Liaison Psychiatry Department, Nantes University Hospital Nantes

Application Process:

We are looking for good candidates for this position with a Master degree or equivalent (engineer). Students finishing their Master degree before July 2017 can apply. Applicants must hold a Master's degree preferentially in human movement science, neurosciences, (neuro)psychology or a related discipline.

Applications should consist of:

- a cover letter outlining the motivation for applying for this PhD position
- a detailed CV
- a summary of previous research works (1 page max.)
- copies of degree certificates and / or diplomas, including marks (and Master ranking)
- letters of recommendation would be appreciated.

Please send your entire dossier as a single *pdf* attachment to your email to thibault.deschamps@univ-nantes.fr

Deadline for application: **June 26th 2017** (17:00 PM)

Response to applicants for possible interview: **June 28th 2017**

Interviews (permitted videoconference) by the selection committee: **July 10th 2017**

Thesis project

Psychomotor retardation is an important symptom of major depression and is characterized by an adverse reduction in many behavioral components, such as speech, facial expression, ideation, and fine and gross motor skills. Although clinical rating scales are often included in the diagnostic process, they do not provide information about psychomotor functioning. Moreover, psychomotor retardation has been associated with alterations in the dorsolateral prefrontal cortex and abnormalities in the basal ganglia and dopaminergic pathways. Modulating dorsolateral prefrontal cortex activity with noninvasive brain stimulation may improve psychomotor retardation in depression.

Repetitive transcranial magnetic stimulation (rTMS) applied to the dorsolateral prefrontal cortex has been proposed as an alternative, effective, and safe therapeutic strategy for major depression. Although its positive neurostimulation related effects on changes in depressive symptomatology are well documented, currently very few studies have investigated whether rTMS changed psychomotor retardation in major depression. Some studies have suggested that rTMS significantly decreased psychomotor retardation, whereas others have found that rTMS did not influence this symptom. In these studies, psychomotor retardation was assessed either with one specific scale or with only one item of a specific depression scale, but no detailed information about psychomotor functioning was provided.

Accordingly, we hypothesized that an objective detailed assessment of psychomotor retardation was necessary to examine the effects of rTMS, applied to the dorsolateral prefrontal cortex, on this key symptom (Thomas-Ollivier et al. 2016, in press). In addition, recent findings contributed to a deeper understanding of the motor performance that characterizes objectively the depression-related psychomotor retardation (Deschamps et al. 2016). In fact, correlations between body posture and ERD scores (French Retardation Rating Scale for Depression; i.e. psychomotor retardation), and positive effects of rTMS treatment on postural instability in dual-task, psychomotor retardation and depression validated the view that the assessment of postural performance constitutes an objective marker of PMR in depressed patients. Thus the current project aims to confirm these pilot studies by designing a clinical trial protocol that will test the initial posture-cognitive dual-tasking performance, as a sound moderator predictive of positive outcomes in MDD patients after a neurostimulation intervention (e.g rTMS), such as significant improvements in psychomotor retardation and depression.

The aim is two-fold:

1/ Characterization of the neuropsychological mechanisms most affected by the psychomotor retardation

- Identification of “signatures” of psychomotor impairment in patients with major depressive disorder: Are profiles dependant on depressive symptoms (bipolar vs. unipolar depression)? The unity and diversity of psychomotor retardation?
- Relationships between depressive states, fluctuations of emotional states and psychomotor profiles?

2/ Validation of a comprehensive psychomotor assessment battery, as potential moderator of positive patient outcomes after neurostimulation (rTMS) intervention

Contact for applicants and/or further information:

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