PhD Position in Psychology

Sleep and psycho-affective trajectories in normal aging and in individuals at risk for Alzheimer's Disease

Duration: 3 years (full-time)

Location: Inserm UA20, GIP Cyceron, Caen (Normandy), France

Doctoral School: ED 556 HSRT – Hommes, Sociétés, Risques, Territoires

Host Institution: Inserm Unit UA20 Neuropresage (https://neuropresage.fr)

Supervision: Co-supervised by Dr. Claire André (Postdoctoral Researcher) and Dr. Géraldine Rauchs (Inserm Research Director)

Salary: According to Inserm doctoral contract standards (funding already secured through the ANR JCJC SENPSY project)

Start date: September 2026.

Project Description

Sleep plays a fundamental role in emotional regulation and the maintenance of psycho-affective health. Aging is associated with changes in both sleep macrostructure (e.g., increased fragmentation, reduced slow-wave sleep) and microstructure (e.g., alterations in slow oscillations, sleep spindles, and REM sleep microstructure). These changes may weaken emotional regulatory mechanisms and thereby contribute to the emergence or progressive worsening of psycho-affective symptoms in older adults. This vulnerability may be particularly pronounced in individuals at increased risk of Alzheimer's disease, such as amyloid-positive individuals or those with Mild Cognitive Impairment (MCI). Indeed, early Alzheimer's disease pathophysiological processes (i.e., amyloid and tau accumulation) affect brain regions involved in both sleep regulation and emotional processing at a very early stage of the disease. The main objective of this PhD project is to identify macro- and microstructural sleep alterations that predict longitudinal changes in psycho-affective symptoms (anxiety, depression, rumination) in older adults. The project aims to elucidate the underlying brain mechanisms, and to identify individuals who may be particularly vulnerable to poor sleep quality (e.g., individuals with Alzheimer's disease risk factors, sex-specific effects).

The project will rely on the analysis of cross-sectional and longitudinal data from several French and Canadian cohorts of cognitively healthy older adults and patients with MCI. These cohorts include polysomnographic sleep recordings, Alzheimer's disease biomarkers measured using neuroimaging and/or plasma assays, cognitive and behavioural assessments, and longitudinal follow-up of psycho-affective symptoms over 2 to 5 years. This PhD project adopts an integrative approach combining sleep neurophysiology, behavioural neuropsychology, and biomarkers of neurodegeneration to better understand early mechanisms linking sleep, psycho-affective vulnerability, and Alzheimer's disease risk. Ultimately, identifying sleep signatures associated with psycho-affective decline may contribute to the development of early prognostic markers of pathological aging, and pave the way for sleep-targeted preventive interventions to promote healthy aging.

The Neuropresage team is hosted within the Cyceron neuroimaging platform (https://www.cyceron.fr/index.php/fr/) in Caen, France. This research infrastructure provides a highly stimulating working environment, bringing together several research teams and state-

of-the-art facilities dedicated to research, including a cyclotron, a 7T MRI scanner, PET and PET-MRI systems for animal studies, as well as a 3T MRI scanner and a PET camera for human studies. The laboratory is located in the charming historic city of Caen in Normandy, just two hours by train from Paris and fifteen minutes from the English Channel coast.

The successful candidate will participate in ongoing clinical research protocols and collaborate with research teams in Lyon (France) and Montreal (Canada), offering a unique opportunity to build a strong national and international research network and to undertake research stays abroad.

Profile and Required Skills

- Hold a Master's degree (MSc) in Neuroscience, Cognitive Science, Psychology, or a related field (or currently completing a Master's degree).
- Demonstrate a strong interest in the study of sleep, and normal and pathological aging.
- Fluency in French is mandatory, as the candidate will be required to collect data from participants.
- Strong written and oral communication skills in English.
- Solid statistical skills and proficiency in R are required.
- Good organizational skills, ability to work effectively in a team, autonomy, rigor, and scientific curiosity.

Application Procedure

Interested candidates are invited to send their application by email to: Dr Claire André (claire.andre@inserm.fr) and Dr Géraldine Rauchs (rauchs@cyceron.fr).

The application must include:

- A detailed CV
- A cover letter (2 pages maximum)
- Academic transcripts and class rankings (a translation into French or English is required if the original documents are issued in another language).
- A copy of the Master thesis or previous internships reports.
- Contact details and a letter of recommendation from one or two academic referees.

Application deadline: May 15, 2026.

Shortlisted candidates will be invited to an online interview.