MuSkLE
PhD programme
Building, maintaining and repairing the functional locomotor system

Co-funded by the European Union

PhD Position 15 job vacancy

Reference:	**PP15**
Title:	**Effects of obesity on neuromuscular function: impact of mechanical overload and metabolic alterations**
Hiring institution:	**UCA**
Location:	Université Clermont Auvergne, Clermont-Ferrand, France
Start date:	As from 01st January 2027
Duration:	36 months
Application deadline:	6th May 2026

Job description

Objective:	**The recruited doctoral fellow (DF15)** will develop a research project on the neuromuscular consequences of obesity. Obesity is a multifactorial and complex disease, with detrimental effects on human health. Currently, the cardiovascular and metabolic consequences are well described in the literature. Conversely, our knowledge on the effects of obesity on neuromuscular function is scarce, despite the fundamental role of neuromuscular properties in determining functional abilities. In adolescents, we have shown that obesity induces positive adaptations in both muscular (e.g., mass, architecture) and nervous factors contributing to strength production, the chronic mechanical overload acting as a natural strength-training stimulus (Garcia-Vicencio et al., 2015a). Nevertheless, as long as obesity develops, these positive adaptations may be partly offset by the negative effects of insulin resistance, fat infiltration, low-grade inflammation on neuromuscular function (Maffiuletti et al., 2013). These effects may be further exacerbated by aging, as suggested by clinical data. The higher force production capacity of patients with obesity seems nevertheless detrimental in terms of fatigability, at least in isometric exercise models (Garcia-Vicencio et al., 2015b). Whether the development of metabolic alterations further impairs neuromuscular function during a fatiguing exercise, especially in dynamic conditions, remains unknown. Moreover, skeletal muscle homeostasis depends on the interactions between myogenic and non-myogenic cells. However, the combined effects of obesity and aging on these processes remain poorly understood. The aim of this project is to evaluate the respective effects of mechanical overload and metabolic disorders associated with obesity on neuromuscular function across the lifespan. Using a translational approach (rodent and human models), the candidate will address these different research questions. The methodology will involve (i) the use of dynamometry, magnetic and/or electrical stimulation, electromyography as well as imaging techniques (ultrasound). The analysis of muscle tissue will be performed using histology and cell biology techniques.
Collaborations and co-supervisions:	The PhD project will be conducted in collaboration with Dr. Julien Gondin (Lyon 1 university, INMG lab, France) and Dr. Luis Penailillo (Andrés Bello University, Exercise and Rehabilitation Sciences Lab, Chile).

Supervisor:	Vincent Martin – vincent.martin@uca.fr
Place of work:	AME2P Lab, Université Clermont Auvergne, 3 rue de la Chébarde, 63170 AUBIERE, France
Required degree	Master's degree or equivalent in exercise physiology or physiology or rehabilitation sciences.
Skills/Experience:	The mastering of one or several of the following techniques will be appreciated: dynamometry, electrical stimulation, magnetic stimulation, electromyography, cell biology, histology.
Keywords	Obesity, neuromuscular function, force, fatigue

Mandatory requirements

Eligibility:	The doctoral fellow: - should not have resided or carried out his/her main activity (work, study) in the country where he/she is being recruited, i.e., France, **for more than 12 months in the 3 years before the application call deadline,** unless this time was part of a compulsory national service or a procedure for obtaining refugee status under the Geneva Convention. - must be **a doctoral candidate** (not already in possession of a doctoral degree at the date of the application call deadline).
Languages:	Oral and written skills must meet the standards of academic English used in international research.

Job details

Type of contract:	Full time position
Gross salary:	The monthly **living allowance, including employer and employees' social charges, is €3,500.** This amount corresponds to a gross monthly salary estimated to € 2,500.36, and to an estimated net monthly salary before income tax of € 2,008.53. On top of the monthly salary, the doctoral fellow will receive a **mobility allowance,** including employer and employees' social charges of €132 per month during 36 months which constitutes gross monthly allowance €94,3 and net monthly allowance of €75,75.
Other benefits:	**Social Protection**: The doctoral fellow will benefit from **full social security coverage**, including health insurance, unemployment insurance, and pension contributions. He/she will also have access to occupational health services (*médecine du travail*), as required by French labour law. **Additional Insurance**: The doctoral fellow may choose to subscribe to complementary health insurance plans (MGEN). Host institutions will provide 15 euros per month. **Paid Leave**: The doctoral fellow is entitled to up to **44 days of paid leave annually**, in accordance with national labour law, and will enjoy the same employment rights as other public-sector employees, including student union membership. **Transport**: The doctoral fellow benefits from significantly **reduced fares on public transport**, available in all partner cities. Additionally, the host institution will cover 75% of the monthly transportation costs.