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

Co-funded by the European Union

PhD Position 19 job vacancy

Reference:	**PP19**
Title:	**Effects of obesity on neuromuscular function: impact of mechanical overload and metabolic alterations**
Hiring institution:	**Université Clermont Auvergne (UCA)**
Location:	Clermont-Ferrand, France
Start date:	As from 1st September 2027
Duration:	36 months
Application deadline:	15th January 2027

Job description

Objective:	The recruited doctoral fellow (DF19) 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. 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).
Collaborations and co-supervisions:	N/A
Supervisors:	Prof. 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 rehabilitation sciences.

Skills/Experience:	The mastering of one or several of the following techniques is expected: dynamometry, electrical stimulation, magnetic stimulation, surface electromyography, ultrasound imaging. Previous experience with patients living with obesity, particularly children and adolescents, will be considered an asset. Previous experience with animal handling and experiments is not required. Specific training and certification can be provided in the context of the PhD program.
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 in possession of a master's degree** at the date of the call deadline. Applicants who have completed their cursus but not yet been awarded the formal master's degree by that date will not be considered eligible. - 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 **€2,393**, and to an estimated net monthly salary before income tax of **€1,922**. 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**: Pursuant to Decree 2022-633 of 22 April 2022, as amended, staff of the Ministry of National Education, Higher Education and Research are required to join the collective health insurance scheme taken out by their employer, i.e. MGEN. The doctoral fellow must enrol as soon as he/she joins the UCA. However, in certain cases, you may be able to apply for an exemption. Further information is available here : https://www.mgen.fr/psc-agents-en-esr-js/parcours-d-affiliation/ **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.