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

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PhD Position 06 job vacancy

Reference:	**PP06**
Title:	**Food Preferences, Gut Microbiota and Muscle Health after Bariatric Surgery: Understanding Inter-individual Variability in Weight Loss and Body Composition**
Hiring institution:	**Lyon1**
Location:	University Claude Bernard Lyon 1, Villeurbanne, France.
Start date:	As from 1st September 2027
Duration:	36 months
Application deadline:	15th January 2027

Job description

Objective

Background: Bariatric surgery (BS) is the most effective treatment to induce substantial weight loss but also inducing lean mass loss, highlighting the importance of preserving muscle mass and function to optimize body composition and functional outcomes, parallel to improved obesity-related cardiometabolic complications, but the magnitude and quality of weight loss vary considerably between individuals. BS profoundly modifies the gut-brain axis, affecting appetite regulation, eating behaviour, food preferences, sensory perception and food reward. The gut microbiota (GM) is a key mediator of these interactions.
BS is also associated with fat-free-mass loss, which may compromise functional capacity and long-term metabolic health. As changes in fat-free mass do not necessarily reflect changes in muscle strength, assessing both dimensions may provide a more complete picture of muscle health following surgery. Changes in appetite, food preferences and dietary intake may influence not only total energy intake, but also the ability to meet protein requirements and preserve lean tissue. The recruited fellow will therefore examine whether microbiota-related changes in appetite and food behaviour contribute to interindividual variability in weight loss and body composition, while exploring fat-free-mass preservation and muscle strength as complementary indicators of muscle health.
Objective: The recruited doctoral fellow will investigate the interplay between BS-induced changes in food preferences, eating behaviour and gut microbiota, and their contribution to postoperative weight-loss response and changes in body composition, muscle health.
Methods: The multi-partner French-state-funded BARIA-gut-TASTE trial is a prospective randomized two-arm, open-label intervention trial, with adult females with obesity, candidates for BS. 60 subjects will undergo the BS weight reduction program and will be randomized to one of the following two arms: 1) Usual dietary guidelines for post-surgery follow-up, 2) Specific post-surgery optimized dietary guidelines pro-GM diversity.
Each subject will undergo 3 investigations before and after BS during which food preferences / reward / behaviour / intake, meal structure, sensory profiles, metabolic and inflammation parameters, fasting and post-prandial gut hormones measurement, metabolomics, volatolomics and GM metagenomics will be assessed and compared prospectively. Body composition will be evaluated, providing estimates of fat mass, fat-free mass, muscle and bone mass, and possibly a functional indicator of muscle health will be added. These measurements will allow an exploratory assessment of muscle mass and strength. Exploratory and multivariate statistical analyses will be used to examine associations between gut microbiota, food preferences, eating behaviour and postoperative outcomes.
Perspectives: Being of major relevance for clinical practice, the knowledge developed in this PhD project will allow for adapting nutritional care of BS patients towards more individual approaches within the concept of precision medicine.

Collaborations and co-supervisions:	The PhD project will be co-supervised by Julie-Anne Nazare and Anestis Dougkas and implemented in collaboration with Université Laval (Canada), Sorbonne University (Paris),
Supervisors:	Julie-anne.nazare@univ-lyon1.fr adougkas@institutlyfe.com
Place of work:	CarMeN Laboratory, CRNH (Human Nutrition Research Center), CarMeN, Inserm U1060 - INRAE UMR1397 - Université Lyon1 - Hospices Civils de Lyon, DYNAMIC team
Required degree	Master's degree or equivalent in nutrition, metabolism or physiology or biostats
Skills/Experience:	Knowledge in nutrition and physiology, competences in statistics and omics analysis French-speaking, with sufficient proficiency to communicate with patients and administer French-language questionnaires (full bilingual proficiency is not required)
Keywords	Bariatric surgery – muscle mass – weight loss – appetite – food preferences – multi-omics

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 €2,440 and to an estimated net monthly salary before income tax of approximately €1,976. On top of the monthly salary, the doctoral fellow will receive a **mobility allowance,** including employer and employees' social charges of €4,752 over the 36 months of the working contract. This amount corresponds to a gross monthly allowance estimated to €92 and to an estimated net monthly allowance before income tax of approximately €74.
Other benefits:	**Social Protection**: The 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 fellow may choose to subscribe to complementary health insurance plans, at affordable rates (approximately €70 *per* month), of which 50% is paid by the employer. **Paid Leave**: The fellow is entitled to up to **33.5 days of paid leave annually** (for 35 hours worked per week), in accordance with national labour law, and will enjoy the same employment rights as other public-sector employees. **Transport**: The fellow benefits from significantly **reduced fares on public transport**, available in all partner cities. Additionally, the host institution will cover 50% of the monthly transportation costs. **Sports and culture:** The fellow will enjoy the cultural environment provided by the Lyon 1 campuses, where numerous exhibitions and activities open to the general public are organised throughout the year. The fellow may play his/her favourite sport in the largest University Sports Association in France, where over 30 activities are on offer year-round through the Sports & Physical Activity University Department. The fellow may also join one of the 70 student associations that unite the University.