

MASTER 2 Fundamental and Clinical Neurosciences

Internship proposal 2025-2026

(internship from January to June 2026)

Host laboratory:

Centre de Recherche en Neurosciences de Lyon

Inserm U1028 - CNRS UMR5292 – UCBL

Centre Hospitalier Le Vinatier - Bâtiment 462 - Neurocampus Michel Juvet 95 boulevard Pinel, 69500 Bron

&

Service de médecine du sommeil et des maladies respiratoires

Hôpital de la Croix-Rousse

103 Grande Rue de la Croix Rousse, 69004 Lyon

Host team :

PAM team (Perception, Attention, Memory) <https://pam-lyon.cnrs.fr/>

Internship supervisors :

Karine Spiegel, INSERM researcher, karine.spiegel@inserm.fr

Laure Peter-Derex, University professor - hospital practitioner (PUPH), laure.peter-derex@chu-lyon.fr

Please reach out to K. Spiegel as the primary point of contact.

Project title : Deciphering the interactions between food intake, sleepiness, and nighttime sleep quality in patients with type 1 narcolepsy, idiopathic hypersomnia and healthy individuals: the NARCOFOOD study

Project summary :

The mechanisms of regulation of vigilance states and food intake are closely linked ¹. The NARCOFOOD study aims to understand **the link between central disorders of hypersomnolence, food intake, especially high glycemic foods, and obesity**. To achieve this goal, thanks to the extensive expertise of the team in the field of central disorders of hypersomnolence ²⁻⁵, we will compare 20 patients with narcolepsy type 1, 20 patients with idiopathic hypersomnia and 20 healthy controls. Each patient/control subject will be studied at home for 4 consecutive days and in the lab for half a day in standardized conditions. The Master 2 student will contribute to data collection and analysis that include : 1. overall eating behaviors assessed from pictures of consumed food and drinks taken by the participants with a touch pad and from carbohydrate consumption (interstitial glucose; FreeStyle Libre Pro iQ); 2. the sleep-wake rhythm measured subjectively (sleep diary) and objectively with actigraphy; 3. quality and quantity of nocturnal sleep (Somfit device); 4. Subjective (validated scale) and objective (EEG analysis; Somfit device) sleepiness before and after eating. Overall, this project will allow a better understanding of the complex mechanisms linking food intake and sleepiness. This new field of research is expected to help patients with sleep disorders and the countless sleep-deprived individuals in modern societies better manage sleepiness through dietary approaches.

3-5 recent publications :

1. Spiegel K, Copinschi G. Fonction endocrino-métabolique et sommeil. In: Dauvilliers Y, ed. Les troubles du sommeil, 3 ed: Elsevier Masson, 2019: 325-339.

2. Peter-Derex L, Fort E, Putois B, et al. Effort/reward imbalance and comorbidities burden in academic and professional careers of patients with narcolepsy type 1. *J Clin Sleep Med* 2025.
3. Peter-Derex L, Fort E, Putois B, et al. Determinants of substance use patterns in patients with narcolepsy type 1: A multi-center comparative cross-sectional study. *Sleep medicine* 2025;129:148-166.
4. Mombelli S, Ricordeau F, Gillard L, et al. Psychobehavioural profile in narcolepsy type 1 with and without REM sleep behaviour disorder. *Journal of sleep research* 2024;33:e13925.
5. Peter-Derex L, Micoulaud-Franchi JA, Lopez R, Barateau L. Evaluation of hypersomnolence: From symptoms to diagnosis, a multidimensional approach. *Revue neurologique* 2023;179:715-726.