

RECRUITING AND TRAINING PHYSICIANS-SCIENTISTS TO EMPOWER TRANSLATIONAL RESEARCH
A MULTILEVEL TRANSDISCIPLINARY APPROACH FOCUSED ON METHODOLOGY, ETHICS AND INTEGRITY IN
BIOMEDICAL RESEARCH - 2018-2023



FONDAZIONE
MONDINO
Istituto Neurologico Nazionale
di Ricerca Scientifica IIRCCS

RESEARCH TRAINING PROGRAM

I. General Information

Title of the research project:

Early Biomarkers for Neurodegenerative Risk in REM Sleep Behavior Disorder

Name and address of the department:

Sleep Disorders Unit - Special Neurology Area - IRCCS Mondino Foundation

Student's supervisor:

Prof. Michele Terzaghi

michele.terzaghi@mondino.it

II. Description of the project

(max 1500 characters, spaces included)

Background

REM Sleep Behavior Disorder (RBD) is recognized as one of the strongest prodromal markers of Parkinson's disease (PD) and related parkinsonian disorders. A significant proportion of individuals with idiopathic RBD will develop neurodegenerative synucleinopathies over time. However, a major knowledge gap remains in the ability to stratify individual risk and to predict personalized trajectories of disease evolution, limiting early intervention and targeted preventive strategies.

What is the aim of the project?

To recruit patients with RBD and collect clinical and biological data in order to identify biomarkers associated with early neurodegenerative risk. The project aims to define clinical and molecular profiles that enable risk staging, prognostic stratification, and personalized prediction of progression toward PD or parkinsonism.

What techniques and methods are used?

Clinical examination of patients, blood sample collection, patients' clinical data collection, data entry into electronic database.

When did the department start working on this project? (year)

2026

Type of research project:

Basic science

Clinical research without lab work

Clinical research with lab work

III. Student's involvement

The student will mainly observe

YES NO

The student will observe the experiments but will be involved in data analysis

YES NO

The student will take active part in experiments ("lab work")

YES NO

The student will take active part in clinical examination (clinical research)

YES NO

The student will be allowed to work with patients

YES NO

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What are the tasks expected to be accomplished by the student?

(max 500 characters, spaces included)

The student will be involved in clinical practice focused on patients with idiopathic REM Sleep Behavior Disorder (iRBD). S/he will participate in clinical assessments, with particular attention to extrapyramidal signs and symptoms, sleep staging, and the evaluation of sleep disorders, contributing to the collection of clinical and polysomnographic data. The student will learn to recognize and interpret clinical signs, analyze data, and contribute to the preparation of scientific reports.

What is expected from/what will be the general outcome of the student?

To prepare a poster / presentation / scientific report / abstract

The student's name will be mentioned in a future publication

Opportunity to present together with the supervisor the results on a conference

No specific outcome is expected

IV. Requirements

What skills are required from the student?

(max 500 characters, spaces included)

Ability to work in team, collaboration and communication skills, knowledge of Scientific English

Is there any special knowledge or a certain level of studies needed?

Subjects passed:

_____ Neurology exam (preferential) _____

Previous experience with:

_____ Outpatients _____

Certificate of:

_____ // _____

None

Are there any legal limitatons in the student's involvement in the project?

YES NO

If yes, what are the limitations?

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For the use of students considering participating in the project, further information can be found from the following references:

(please add specific references, max 3)

1. De Francesco E, Terzaghi M, Storelli E, Magistrelli L, Comi C, Legnaro M, Mauri M, Marino F, Versino M, Cosentino M. CD4+ T-cell Transcription Factors in Idiopathic REM Sleep Behavior Disorder and Parkinson's Disease. *Mov Disord.* 2021 Jan;36(1):225-229. doi: 10.1002/mds.28137. Epub 2020 Jul 10. PMID: 32649001.
2. Pinoli M, Terzaghi M, Marino F, Comi C, Versino M, Cosentino M. CD4+ T-cell transcription factors as early predictors of phenoconversion in idiopathic rapid eye movement sleep behaviour disorder. *F1000Res.* 2025 Oct 6;14:683. doi: 10.12688/f1000research.163212.2. PMID: 41169873; PMCID: PMC12569504.

V. Schedule

Duration of the project:

1 month 2 months 3 months

There are approximately 4 *hours of work per day.*

Available months:

January February March April May June
 July August September October November December

How many students can you accept to the project at the same time? 2

Special remarks:

students should bring a white coat

NOTE: a scientific report is required at the end of the program