

Isabelle VIVODTZEV PhD

Born on February 4th, 1978, 3 children

Current position and affiliation

Chargée de Recherche CR1, Inserm, Institut Biologie Paris Seine, NeAR team, Neural adaptation and repair, Sorbonne Université, Paris

Education

2015: "Habilitation à diriger les recherches" (HDR), UGA Grenoble

2006: PhD Sport, Santé, Société, UGA Grenoble

2002: Master 2 / DEA, Physiologie intégrée en conditions extrêmes, Lyon-1

Research areas

As an integrative physiologist, my long-term research interests involve a comprehensive understanding of the key interactions between the respiratory and locomotor neuromuscular systems in various pathophysiological conditions, including chronic obstructive pulmonary disease, sleep apnea, obesity hypoventilation and cervical spinal cord injury (cSCI). My current scientific program focusses on inducible respiratory neuroplasticity in cSCI, aiming at developing therapies to restore spontaneous ventilation in those suffering from cSCI and all life mechanical ventilation reliance. This program is based on a translational and transversal approach, based on a previous experience in clinical setting (Spaulding rehabilitation hospital, Harvard Medical school, 2016-2020) and the elaboration of a pre-clinical model of cSCI (Paris, Unit 1158: 2020-2022). Current projects involve functional investigations of the respiratory function (plethysmography and diaphragm electromyography) and mechanistic investigations at the spinal and neuromuscular level (axonal regeneration, neuroinflammation, neuromuscular junction) after pharmacologically and/or neurostimulation approaches in established preclinical models of cervical spinal cord injury.

Appointments and Experience

Since 2024: CR Inserm: Institut Biologie Paris Seine, Inserm 1345, CNRS 8263, Sorbonne Université, Paris

Unité Dev2A; Equipe NeAR Team, "Neural Adaptation and Repair"

2020-2024: CR Inserm: Inserm UMR_S1158, Neurophysiologie respiratoire expérimentale et clinique, Sorbonne Université, Paris

2016-2020: Visiting Faculty at Harvard Medical School, Cambridge, USA

2009-2016: Associate Researcher, Junior (2009-14) and Senior (2014-16), Inserm U1300, Grenoble Alpes University

2006-2009: Postdoctorat : Université Laval, Québec, Canada.

Institut Université de Cardiologie et de Pneumologie de Québec, Université Laval, Canada

2002-2006: Doctorat, unité Inserm U1300 : Hypoxia-Physiopathologie HP2, Grenoble, Université Grenoble Alpes

Scientific metrics and current projects

<https://scholar.google.fr/citations?hl=fr&tzom=-60&user=bRSnN7IAAAJ>

ORCID: <https://orcid.org/0000-0002-5201-8603>

>51 peer reviewed publications, 3 book chapters

Patent software X22039 SL012210 MA00685: "Algorithm for respiratory muscles stimulation in mice". PI of the ALGOSTIM project: SATT Lutech Paris' supported project aiming at creating an algorithm of respiratory muscles stimulation based on a mathematical modelling of breathing and real respiratory measurements in human.

Clinical valuation of neuromuscular electrostimulation projects in patients with chronic respiratory disease. Between 2006 and 2016: published clinical trials have resulted in the establishment of a routine clinical practice at Université Grenoble Alpes.

FUNDINGS and awards

2024-2028: 628 k€ French ANR (RecovDIA Project)(PI & main coordinator)

2025-2026: 105 k€ BFT Lab - BPI France- Algostim Project (PI)

2024-2025: 248 k€ Satt Lutech: Algostim Project (PI)

2022-2025: 102 k€: Fondation du Souffle for a PhD student (PI)

2016-2018: k\$ 250 NIH R21 Grant: (NIV-Ex NCT02865343) (PI: Dr J.A. Taylor, co-PI)

2016-2019: k\$ 100: « Gordon foundation for the cure of paralysis» (NIV-Ex NCT02865343) (PI)

2016-2017: 30 k€ : FRM *Fondation de la recherche médicale* (NIV-Ex NCT02865343) (PI)

2013-2016: 160 k€: PHRC-IR: (STIMOB NCT02210585) (PI: Pr R. Tarnier, co-PI)

Awards/ Prize

since 2020: Bonus for scientific excellence (PEDR) - Inserm

2016: European commission: Marie Skłodowska-Curie Actions Seal of Excellence Award

2016, 2010, 2006: American Thoracic Society: (International travel award 2006 and best abstracts 2010,2016)

2014, 2013, 2009: European Respiratory Society (Young scientist sponsorship 2009 and Best abstract in "Chronic Care" 2013 and 2014)

Supervising activities and expertise

- 5 PhD students (PI and coPI); 2 post-doc fellows; > 20 Master students; 4 medical research assistants

- > 250h teaching in Physiology, physiopathology and pharmacology (France, Canada and USA).

- Member of jury of > 10 PhD & HDR (6 since 2020) & Master committees

- Reviewer for > 30 journals (in respiratory, critical care, sleep apnea, rehabilitation, neurology, sports medicine)

- College of Experts of the European Respiratory Society" since 2016

Membership / Network

- Société de Physiologie et Biologie Intégrative / International Spinal research Trust (ISRT, London)

- European Respiratory Society & American thoracic Society

- EXECUTIVE BOARD: Parisian Network on Spinal Cord Injury: REseau Parisien de REcherche en lésion médullaire (Réseau REPARE-LM: founder and main coordinator)