PERSONAL INFORMATION

Elisa Pelosin

University of Genova, Department of Neuroscience

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Nationality Italian

WORK EXPERIENCE

2019 - ongoing

Associate Professor,

Department of Neuroscience (DINOGMI), School of Medicine, University of Genova, Italy

Research topics:

- Neurorehabilitation in movement disorders and elderly population.
- Neurophysiological basis of physiotherapy training induced-changes at the brain level
- Gait disturbances in patients with PD and elderly population

Responsibilities:

- Head of gait analysis lab
- Deputy director of the neurophysiology applied lab (director. prof. ssa Laura Avanzino)
- Coordinator of physiotherapy bachelor's degree (University of Genova)
- Coordinator of Master (1st level) in neuroscience and neurological rehabilitation
- Tutor of PhD students

2021 – ongoing

Master Director

"Neuroscience and Neurorehabilitation", DINOGMI, University of Genoa, Genova, Italy.

2021 – ongoing

B.Sc Coordinator

B.Sc degree in Physiotherapy, University of Genoa, Genova, Italy.

2019 – 2020

Adjunct Professor

Saint Camillus International University of Health Sciences, Rome, Italy

2016 – 2019

Assistant Professor

Department of Neuroscience (DINOGMI), School of Medicine, University of Genova, Italy

2011 – 2016

Lecture

Department of Neuroscience (DINOGMI), School of Medicine, University of Genova, Italy

2006 – 2011

Fellow

Department of Neuroscience (DINOGMI), School of Medicine, University of Genova, Italy

2006 – 2011

Research DPT position

Sensory Motor Performance Program (SMPP) North-western University, Rehabilitation Institute of Chicago (RIC), Illinois, USA

2006 – 2011

Physiotherapist

Elderly Clinic Unit, Genoa, Italy

EDUCATION AND TRAINING

2011 **PhD in Neuroscience,**
Department of Neuroscience (DINOGMI), School of Medicine, University of Genova, Italy

2007 **Master in Rehabilitation Science (LM/SNT2)**
School of Medicine, University of Genova, Italy

2004 **Fellowship at University of Genoa,**
Department of Neuroscience (DINOGMI), School of Medicine, University of Genova, Italy

2001 **B.Sc in Physiotherapy**
School of Medicine, University of Genova, Italy

ADDITIONAL INFORMATION

Publications

Author of 134 scientific publications (in international peer-reviewed journals).
- Sum of the Times Cited: 4.458
- H-index (scopus, update at may, 2025): 35
- https://orcid.org/0000-0002-9880-2241

- Authors of books' chapters: "Current Problems and Strategies in Motor Rehabilitation for Parkinson's Disease" in Advances in Alzheimer's and Parkinson's Disease" (Springer US 2008); (ii) Curator for the Italian edition of "Atlas surface palpation: Anatomy of the neck, trunk, upper and lower limb" S.Tixa (Elsevier, 2013), (iii) "Physiology in Dystonia" in Dystonia and Dystonic Syndromes, Springer (2015) DOI: 10.1007/978-3-7091-1516-9_2.; "Rehabilitation of Parkinson's Disease" in "Advanced Technologies for the Rehabilitation of Gait and Balance Disorders", Springer (2018), DOI: 10.1007/978-3-319-72736-3_10.
- Referee activity for: Movement Disorders, Neurorehabilitation and Neural Repair, Frontiers Journals (Human Neuroscience, Rehabilitation Sciences), Parkinsonism and Related Disorders, Archive Physical Medicine and Rehabilitation, Neuroimage, IEEE Journal, BMC Geriatrics.
- Associate Editors (section Neurology) of Archives of Physiotherapy Journal

Other CV Information

My research activities are focused on pathophysiology and treatment (physiotherapy) of gait disturbances and falls in patients with Parkinson's disease, in other Movement disorders and in the elderly using movement analysis systems and non-invasive neurophysiological techniques (TMS, TCS, hd EEG). Major interests of my research have are the following: (i) developing and investigating the neurophysiological bases of novel physiotherapy approaches for gait disturbances and falls prevention (e.g., Action Observation, Motor Imagery and Virtual Reality); (ii) investigating the influence of cognition and emotion on motor control in healthy and in patients affected by PD; (iii) understanding and identifying early signs of motor-cognitive decline or degeneration and designing and testing interventions to improve motor-cognitive function in older adults and those with neurodegenerative disorders. I'm the deputy director of the "Applied Neurophysiology laboratory for movement disorders" (Joint lab DIMES – DINOGMI, UniGE).

I join national and international scientific societies, including The International Society of Posture and Gait Research (ISPGR), Movement Disorders Society, Accademia Limpe-Dismov, Italian Association of Physiotherapy (A.I.FI).

Since 2010, I am invited speaker in several National and International conferences. Since 2013 she has organized several teaching courses for Health professions (physiotherapist, neurologist) at national and international levels.

National and International collaborations

Prof. Jeffrey Hausdorff and Prof. Anat Mirelman, Tel Aviv Sourasky Medical Center, Tel Aviv, Isreael; Prof. Alice Nieuweboer, and Prof. Dante Mantini, Catholic University of Leuven, Leuven, Belgium; Prof Lynn Rochester, Newcastle University, Newcastle upon Tyne, UK; Prof. Bas Bloem, Radboud University, Nijmegen, the Netherlands; Prof. Paolo Bonato, Wyss Institute at Harvard University, Boston, US; Prof. Terry Ellis, Boston University, Bost US; Alessandro Vato, Senior Research Scientist, National Center for Adaptive Neurotechnologies (NCAN) Albany, US; Prof. Davide Martino, University of Calgary, Calgary, Canada; Prof. Jurgen Konczak, University of Minnesota, US; Prof. Cattaneo Davide; University of Milano, Milano, Italy; Giovanni Galeoto, researcher, Sapienza university, Roma Italy; Prof. Mirta Fiorio, University of Verona, Verona, Italy; Prof. Roberto Gatti, Humanitas University, Milano, Italy

Awards and Appointments

Member of writing group of the “European Physiotherapy Guideline for Parkinson's Disease” (2014)

Member of the Gait Advisory Committee, Michael J. Fox Foundation (2016-present)

Member of the Technical Scientific Committee of the Italian Physiotherapy Association (AIFI), (2019-2021)

Chair of Technical Scientific Committee of the Italian Physiotherapy Association (AIFI), (2021-)

- Member of the Technical Scientific Committee of the “Fondazione Limpe per il Parkinson” Onlus (2021-ongoing)

Grants and Research Supports (last 5 years)

- 2022-2025: Bando PRIN (MUR). Project title: “The effect of emotions on associative memory in Parkinson’s disease: from behavioral to computational approach”

- 2022 - : Bando PNRR. Project title: “MNESYS - A multiscale integrated approach to the study of the nervous system in health and disease”

- 2022 - : Bando PNRR. Project title: “RAISE (Robotics and AI for Socio-economic Empowerment)”

- 2024 - : Bando PNC. Project title: DHEAL-COM - Digital Health Solutions in Community Medicine

- 2021-2023: Bando 5 x 1000 (MOH; IRCCS San Martino Hospital). Project title: “Cognitive-emotional-sensorimotor integration in patients with Parkinson’s disease and major depression”.

- 2020 - 2024: “Fresco Institute Network Program including the Parkinson outcome project (POP) carried on by the Parkinson’s Foundation (USA)”.

- 2018-2020: M.J. Fox Fundation. Project titile: “Gait as biomarker for clinicians and researchers in patients with PD”

Teaching and Institutional Activities

Teaching activities at

Physiotherapy, Speech Therapy, Rehabilitation Science (LM/SNT2) academic degree

Thesis

I have been mentoring more than 30 thesis of undergraduate physiotherapy and rehabilitation science students

Master

2020-2021: Teaching activity in the I level Master in Neuroscience and Neurorehabilitation, DINOGMI, University of Genoa

PhD School

2012: Academic Board of the Ph.D. in Motor and Sport Science at University of Genoa

2013-ongoing: Academic Board of the Ph.D. in Neuroscience at University of Genoa

Mentor of 1 PhD thesis; at the present supervising 3 PhD students

Institutional Activity at Unige

2018-: member of executive committee for Department of Excellence project MUR) at DINOGMI

2021-: Coordinator of degree course in physiotherapy

Selected Publications

Pelosin E, Ponte C, Putzolu M, Lagravinese G, Hausdorff JM, Nieuwboer A, Ginis P, Rochester L, Alcock L, Bloem BR, Nieuwhof F, Cereatti A, Della Croce U, Mirelman A, Avanzino L. Motor-Cognitive Treadmill Training With Virtual Reality in Parkinson's Disease: The Effect of Training Duration. Front Aging Neurosci. 2022 Jan 5;13:753381. doi: 10.3389/fnagi.2021.753381. PMID: 35069171; PMCID: PMC8767105.

Zhao M, Bonassi G, Guarnieri R, Pelosin E, Nieuwboer A, Avanzino L, Mantini D. A multi-step blind source separation approach for the attenuation of artifacts in mobile high-density electroencephalography data. J Neural Eng. 2021Dec 28;18(6). doi: 10.1088/1741-2552/ac4084. PMID: 34874319.

Bonassi G, Pelosin E, Lagravinese G, Bisio A, Grasselli G, Bove M, Avanzino L. Somatosensory inputs modulate the excitability of cerebellarcortical interaction. Clin Neurophysiol. 2021 Dec;132(12):3095-3103. doi: 10.1016/j.clinph.2021.08.026. Epub 2021 Oct 18. PMID: 34740041.

Droby A, Pelosin E, Putzolu M, Bommarito G, Marchese R, Mazzella L, Avanzino L, Inglese M. A Multimodal Imaging Approach Demonstrates Reduced Midbrain Functional Network Connectivity Is Associated With Freezing of Gait in Parkinson's Disease. Front Neurol. 2021 Apr 30;12:583593. doi: 10.3389/fneur.2021.583593. PMID: 33995237; PMCID: PMC8120105.

Mirelman A, Ben Or Frank M, Melamed M, Granovsky L, Nieuwboer A, Rochester L, Del Din S, Avanzino L, Pelosin E, Bloem BR, Della Croce U, Cereatti A, Bonato P, Camicioli R, Ellis T, Hamilton JL, Hass CJ, Almeida QJ, Inbal M, Thaler A, Shirvan J, Cedarbaum JM, Giladi N, Hausdorff JM. Detecting Sensitive Mobility Features for Parkinson's Disease Stages Via Machine Learning. Mov Disord. 2021 Sep;36(9):2144-2155. doi: 10.1002/mds.28631. Epub 2021 May 6. PMID: 33955603.

Bommarito G, Putzolu M, Avanzino L, Cosentino C, Botta A, Marchese R, Inglese M, Pelosin E. Functional Correlates of Action Observation of Gait in Patients with Parkinson's Disease. Neural Plast. 2020 Dec 29;2020:8869201. doi: 10.1155/2020/8869201. PMID: 33456457; PMCID: PMC7787806.

Semprini M, Bonassi G, Barban F, Pelosin E, Iandolo R, Chiappalone M, Mantini D, Avanzino L. Modulation of neural oscillations during working memory update, maintenance, and readout: An hdEEG study. Hum Brain Mapp. 2021 Mar;42(4):1153-1166. doi: 10.1002/hbm.25283. Epub1020 Nov 17. PMID: 33200500; PMCID: PMC7856639.

Bekkers EMJ, Mirelman A, Alcock L, Rochester L, Nieuwhof F, Bloem BR, Pelosin E, Avanzino L, Cereatti A, Della Croce U, Hausdorff JM, Nieuwboer A. Do Patients With Parkinson's Disease With Freezing of Gait Respond Differently Than Those Without to Treadmill Training Augmented by Virtual Reality?Neurorehabil Neural Repair. 2020 May;34(5):440-449. doi: 10.1177/1545968320912756. Epub 2020 Mar 23. PMID: 32202203.

Del Din S, Galna B, Lord S, Nieuwboer A, Bekkers EMJ, Pelosin E, Avanzino L, Bloem BR, Olde Rikkert MGM, Nieuwhof F, Cereatti A, Della Croce U, Mirelman A, Hausdorff JM, Rochester L. Falls Risk in Relation to Activity Exposure in High- Risk Older Adults. J Gerontol A Biol Sci Med Sci. 2020 May 22;75(6):1198-1205. doi: 10.1093/gerona/glaa007. PMID: 31942969; PMCID: PMC7243591.

Hillel I, Gazit E, Nieuwboer A, Avanzino L, Rochester L, Cereatti A, Croce UD, Rikkert MO, Bloem BR, Pelosin E, Del Din S, Ginis P, Giladi N, Mirelman A,Hausdorff JM. Is every-day walking in older adults more analogous to dual-task walking or to usual walking? Elucidating the gaps between gait performance in the lab and during 24/7 monitoring. Eur Rev Aging Phys Act. 2019 May 3;16:6. doi: 10.1186/s11556-019-0214-5. PMID: 31073340; PMCID: PMC6498572.

Mirelman A, Bonato P, Camicioli R, Ellis TD, Giladi N, Hamilton JL, Hass CJ, Hausdorff JM, Pelosin E, Almeida QJ. Gait impairments in Parkinson's disease. Lancet Neurol. 2019 Jul;18(7):697-708. doi: 10.1016/S1474-4422(19)30044-4. Epub 2019 Apr 8. PMID: 30975519.

Pelosin E, Cerulli C, Ogliastro C, Lagravinese G, Mori L, Bonassi G, Mirelman A, Hausdorff JM, Abbruzzese G, Marchese R, Avanzino L. A Multimodal Training Modulates Short Afferent Inhibition and Improves Complex Walking in a Cohort of Faller Older Adults With an Increased Prevalence of Parkinson's Disease. J Gerontol A Biol Sci Med Sci. 2020 Mar 9;75(4):722-728. doi: 10.1093/gerona/glz072. PMID: 30874799.

Avanzino L, Lagravinese G, Abbruzzese G, Pelosin E. Relationships between gait and emotion in Parkinson's disease: A narrative review. Gait Posture. 2018 Sep;65:57-64. doi: 10.1016/j.gaitpost.2018.06.171. Epub 2018 Jun 28. PMID: 30558947.

Bertoli M, Cereatti A, Trojaniello D, Avanzino L, Pelosin E, Del Din S, Rochester L, Ginis P, Bekkers EMJ, Mirelman A, Hausdorff JM, Della Croce U. Estimation of spatio-temporal parameters of gait from magneto-inertial measurement units: multicenter validation among Parkinson, mildly cognitively impaired and healthy older adults. Biomed Eng Online. 2018 May 9;17(1):58. doi: 10.1186/s12938-018-0488-2. PMID: 29739456; PMCID: PMC5941594.

Hausdorff JM, Hillel I, Shustak S, Del Din S, Bekkers EMJ, Pelosin E, Nieuwhof F, Rochester L, Mirelman A. Everyday Stepping Quantity and Quality Among

Older Adult Fallers With and Without Mild Cognitive Impairment: Initial Evidence for New Motor Markers of Cognitive Deficits? J Gerontol A Biol Sci Med Sci. 2018 Jul 9;73(8):1078-1082. doi: 10.1093/gerona/glx187. PMID: 29394317.

Lagravinese G, Pelosin E, Bonassi G, Carbone F, Abbruzzese G, Avanzino L. Gait initiation is influenced by emotion processing in Parkinson's disease patients with freezing. Mov Disord. 2018 Apr;33(4):609-617. doi: 10.1002/mds.27312. Epub 2018 Feb 2. PMID: 29392774.

Del Din S, Galna B, Godfrey A, Bekkers EMJ, Pelosin E, Nieuwhof F, Mirelman A, Hausdorff JM, Rochester L. Analysis of Free-Living Gait in Older Adults With and Without Parkinson's Disease and With and Without a History of Falls: Identifying Generic and Disease-Specific Characteristics. J Gerontol A Biol Sci Med Sci. 2019 Mar 14;74(4):500-506. doi: 10.1093/gerona/glx254. PMID: 29300849; PMCID: PMC6417445.

Dockx K, Alcock L, Bekkers E, Ginis P, Reelick M, Pelosin E, Lagravinese G, Hausdorff JM, Mirelman A, Rochester L, Nieuwboer A. Fall-Prone Older People's Attitudes towards the Use of Virtual Reality Technology for Fall Prevention. Gerontology. 2017;63(6):590-598. doi: 10.1159/000479085. Epub 2017 Aug 18. PMID: 28817828.

Mirelman A, Rochester L, Maidan I, Del Din S, Alcock L, Nieuwhof F, Rikkert MO, Bloem BR, Pelosin E, Avanzino L, Abbruzzese G, Dockx K, Bekkers E, Giladi N, Nieuwboer A, Hausdorff JM. Addition of a non-immersive virtual reality component o treadmill training to reduce fall risk in older adults (V-TIME): a randomised controlled trial. Lancet. 2016 Sep 17;388(10050):1170-82. doi: 10.1016/S0140-6736(16)31325-3. Epub 2016 Aug 11. PMID: 27524393.

Abbruzzese G, Avanzino L, Marchese R, Pelosin E. Action Observation and Motor Imagery: Innovative Cognitive Tools in the Rehabilitation of Parkinson's Disease. Parkinsons Dis. 2015; 2015:124214. doi: 10.1155/2015/124214. Epub 2015 Oct 1. PMID: 26495150; PMCID: PMC4606219.