



Curriculum Vitae Europass

Personal information

Surname / First name

Zampogna Alessandro

Nationality

E-mail

ORCID

Title

MD, PhD

Occupational
field

**Experimental and Clinical Neuroscience, Neurodegenerative Diseases,
Movement Disorders, Wearable Technologies**

Work Experience (Clinical and Research Activity)

Dates
Position held

01/09/2024 – 30/09/2024

Visiting fellow, Department of Neurobiology, Care Sciences and Society, Karolinska Institutet, Stockholm, Sweden and Department of Clinical Neuroscience, Karolinska University Hospital.

Dates
Position held

Mar 2024 – Present

Medical Researcher at IRCCS Neuromed Institute, Pozzilli (IS), Italy.

Dates
Position held

Jul 2022 – Nov 2025

"Site sub-investigator" (Phase III clinical trials for Alzheimer's disease, including: Embark 221AD304, Sponsor: Biogen; BAN2401-G00-301, Sponsor: Eisai; Alector AL002-2, Sponsor: Alector; Post-Graduate WN42171, Sponsor: F. Hoffmann La Roche; Envision 221AD305, Sponsor: Biogen; CELIA, Sponsor: Biogen; Alector-AL002-LTE, Sponsor: Alector; Gabriella, Sponsor: Roche; PRIMUS-AD, Sponsor: PRInnovation GmbH; AR1001-ADP3-US01, Sponsor: AriBio USA, INC; COGNIKET-MCI, Sponsor: Nestlé Health Science). Center for Cognitive Impairment and Dementia, Department of Human Neurosciences, Policlinico Umberto I, Rome, Italy. PI: Prof. Giuseppe Bruno.

Dates
Position held

Jan 2022 – Present

Freelance neurology consultant, Rome, Italy.

Dates
Position held

05/2021-07/2021

Clinical and Research fellow, Movement Disorders Unit, Centre Hospitalier Universitaire Grenoble Alpes, Grenoble, France.

Dates
Position held

2020 – 2021

	“Site sub-investigator” at Phase 3 Multicenter Study of TD-9855 in Treating Symptomatic Neurogenic Orthostatic Hypotension in Subjects with Primary Autonomic Failure - Theravance Biopharma. PI: Prof. Giovanni Fabbrini.
Dates	2019 – 2021
Position held	Resident doctors' affairs representative, Department of Human Neurosciences, Sapienza University of Rome, Italy.
Dates	29/12/2017 – 29/12/2021
Position held	Residency in Neurology, Department of Human Neurosciences, Sapienza University of Rome, Italy.
Dates	Jun 2017 – Dec 2017
Position held	Primary care physician (i.e., locum doctor) at Vibo Valentia local health district, Italy.
Education	
Dates	27/01/2025
Title of qualification awarded	PhD in Clinical and Experimental Neurosciences and Psychiatry, Department of Human Neurosciences, Sapienza University of Rome, Italy. Title of Dissertation: “Advanced Technologies for Axial Impairment in Parkinson's Disease: from Early Detection to Outcome Prediction”. Final mark: Excellent with honors. Supervisor: Prof. Antonio Suppa.
Dates	17-18 November 2023
	8th Advanced Parkinson's Disease (APD) Summit. Prague (PRG), Czech Republic.
Dates	18-21 November 2022
	10th Advanced Course On Diagnosis and Treatment of Movement Disorders (Faculty: Prof A. Espay, Prof. A. Fasano, Prof. F. Morgante), Naples (Na), Italy.
Dates	02-08 April 2022
	"XX Basic Course in EMG and Evoked Potentials", Italian Society of Clinical Neurophysiology, Sorrento (NA), Italy.
Dates	03-04 March 2022
	"Course on directional systems programming", Boston Scientific, Milan, Italy.
Dates	Nov 2021 – Jan 2025
Position held	PhD fellow in Clinical and Experimental Neurosciences and Psychiatry, Department of Human Neurosciences, Sapienza University of Rome, Italy. Supervisor: Prof. Antonio Suppa.
Principal subjects/occupational skills covered	Clinical and instrumental assessment of axial motor symptoms in Parkinson's disease using advanced technologies and computational methods.
Dates	30-31/10/2021
	“Advanced Applied Statistics and Research Methodology for Medical and Social Sciences”. Neocortex ETS, Rome, Italy.
Dates	17-18/09/2021 and 08-09/10/2021
	“High School of Movement Disorders”, Academy for the study of Parkinson's disease and movement disorders (LIMPE-DISMOV), Salerno and Turin, Italy.
Dates	06/2021
	“Applied Statistics and Research Methodology for Medical and Social Sciences” course, Neocortex ETS, Rome, Italy.
Dates	11/2020
	MDS-ES Virtual School for Young Neurologists. International Parkinson and Movement Disorder Society (MDS).

Dates	07-08/2020																														
	"Virtual Aspen Course in Movement Disorders, A Comprehensive Review of Movement Disorders for the Clinical Practitioner". International Parkinson and Movement Disorder Society (MDS).																														
Dates	29/12/2017 – 11/01/2022																														
Position held	Residency and Specialization in Neurology, Department of Human Neurosciences, Sapienza University of Rome, Italy. Title of Dissertation: "Axial Impairment in Parkinson's Disease: Multimodal Assessment of Gait and Balance". Final mark: 70/70 cum laude. Supervisor: Prof. Alfredo Berardelli. Co-Supervisor: Prof. Antonio Suppa.																														
Dates	03/2017																														
Title of qualification	Professional Qualification as Medical Doctor (OMCEOVV 1488).																														
Dates	2010 - 2016																														
Title of qualification	Master Degree in Medicine and Surgery (summa cum laude), Faculty of Medicine and Surgery, Sapienza University of Rome, Italy. Title of Dissertation: "Kinematic study of Freezing of Gait in Parkinson's Disease by means of Magnetic-Inertial Sensors". Supervisor: Prof. Alfredo Berardelli; Co-Supervisor: Prof. Antonio Suppa.																														
Dates	2014 – 2016																														
Title of qualification	"Excellence Path" student, Sapienza University of Rome, Italy (i.e. an extracurricular academic programme for worthy students to be involved in research activities).																														
Dates	2005 - 2010																														
Title of qualification	Upper secondary education diploma (specialization: Classical Lyceum; final mark 100/100), Liceo Classico M. Morelli, Vibo Valentia, Italy.																														
Personal skills and competencies																															
Mother tongue(s)	Italian																														
Other language(s)	English																														
Self-assessment																															
European level (*)																															
English	<table><tr><th colspan="4">Understanding</th><th colspan="4">Speaking</th><th colspan="2">Writing</th></tr><tr><th colspan="2">Listening</th><th colspan="2">Reading</th><th colspan="2">Spoken interaction</th><th colspan="2">Spoken production</th><th colspan="2"></th></tr><tr><td>B 2</td><td>Upper-Intermediate</td><td>C 1</td><td>Advanced</td><td>B 2</td><td>Upper-Intermediate</td><td>B 2</td><td>Upper-Intermediate</td><td>C 1</td><td>Advanced</td></tr></table>	Understanding				Speaking				Writing		Listening		Reading		Spoken interaction		Spoken production				B 2	Upper-Intermediate	C 1	Advanced	B 2	Upper-Intermediate	B 2	Upper-Intermediate	C 1	Advanced
Understanding				Speaking				Writing																							
Listening		Reading		Spoken interaction		Spoken production																									
B 2	Upper-Intermediate	C 1	Advanced	B 2	Upper-Intermediate	B 2	Upper-Intermediate	C 1	Advanced																						
Grants, Awards and Honours																															
Dates	Nov 2025 – present																														
	Editorial Board Member of Advanced Technology in Neuroscience, Open Access Journal from Wolters Kluwer (ISSN: 3050-6824).																														
Dates	07/2025																														
	Winner of the "youth project" grant from the Italian Neurology Society, 55th national congress, Padova, 24-28th Oct 2025.																														
Dates	13/03/2025 – present																														
	Associate Editor of JMIR Neurotechnology, Open Access Journal from JMIR Publications (ISSN: 1438-8871).																														
Dates	30/10/2024																														
	Lecturer at the residential event "Parkinson's Disease: Experience in a Specialist Clinic" on the topic "Advanced Stage Therapy". Department of Human Neurosciences, Sapienza University of Rome, Italy																														

Dates	01/2025 - present Review Editor of <i>Therapeutic Advances in Neurological Disorders</i> , Open Access Journal from SAGE Publishing (ISSN: 1756-2864).
Dates	09/2024 - present Review Editor of <i>Frontiers in Human Neuroscience - Motor Neuroscience</i> , Open Access Journal from Frontiers (ISSN: 1662-5161).
Dates	04/2024 Recipient of the ERASMUS+ "Short Mobility" Study Scholarship for the Academic Year 2024-2025.
Dates	02/2024 Winner of the "Youth and Research Project" award (participation grant), 10th national congress of the Academy for the study of Parkinson's disease and movement disorders (LIMPE-DISMOV). Title of the research: "Disentangling Bradykinesia and Rigidity in Parkinson's disease: Long-term Evidence from STN-DBS".
Dates	11/2023 Winner of the "Sapienza Ricerca - Bando Ateneo 2023" grant, Sapienza University of Rome, Italy. Title of the research: "Impact of L-Dopa/Carbidopa intestinal gel and deep brain stimulation on motor disorders in Parkinson's disease: study of body topography through a network of wearable sensors".
Dates	05/2023 Winner of the "young authors award", 67th national congress of the Italian Society of Clinical Neurophysiology (SINC) for the best oral communication. Title of the research: "Muscle synergies during gait in Parkinson's disease".
Dates	03/2023 Winner of the "Youth and Research Project" award (participation grant), 9th national congress of the Academy for the study of Parkinson's disease and movement disorders (LIMPE-DISMOV). Title of the research: "Muscle synergies during gait in Parkinson's disease".
Dates	10/2022 Winner of the "Sapienza Ricerca - Bando Ateneo 2022" grant, Sapienza University of Rome, Italy. Title of the research: "Boosting Telemedicine in Parkinson's disease: the innovative contribution of Wearable Sensors and Artificial Intelligence".
Dates	10/2022 Winner of the "Sapienza Ricerca - Bando Ateneo 2022" grant, Sapienza University of Rome, Italy. Title of the research: "Long-term monitoring of motor fluctuations in Parkinson's disease: an innovative approach with wearable sensors".
Dates	07/2022 Winner of the "Youth and Research Project" award (participation grant), 8th national congress of the Academy for the study of Parkinson's disease and movement disorders (LIMPE-DISMOV). Title of the research: "Axial impairment and falls in Parkinson's disease: 15 years of subthalamic deep brain stimulation".
Dates	10/2021 Scholarship winner for the XXXVII PhD cycle in "Clinical and Experimental Neurosciences and Psychiatry", Sapienza University of Rome, Italy.
Dates	09/2021 Winner of the "Youth and Research Project" award (participation grant), 7th National Congress of the Academy for the study of Parkinson's disease and movement disorders (LIMPE-DISMOV). Title of the research: "Spinal excitability and plasticity in hereditary spastic paraparesis: a neurophysiological study".
Dates	09/2021

	Winner of the “young authors award”, 65th national congress of the Italian Society of Clinical Neurophysiology (SINC). Title of the research: “Spinal excitability and plasticity in hereditary spastic paraparesis: a neurophysiological study”.
Dates	08/2021 – Present Reviewer Board Member of <i>Journal of Clinical Medicine</i> , Open Access Journals from MDPI (ISSN: 2077-0383).
Dates	12/2020 Winner of the “Clinical Fellowship Programme 2021” grant, European Academy of Neurology (EAN), Vienna, Austria.
Dates	10/2020 Winner of the “Sapienza Ricerca - Bando Ateneo 2020” grant, Sapienza University of Rome, Italy. Title of the research: “The pathophysiology of freezing of gait in Parkinson’s disease: an innovative study with wearable sensors and the analysis of muscle synergies”.
Dates	2020 – Present Resident and Research Member of the European Academy of Neurology (EAN).
Dates	2020 – Present Reviewer Board Member of <i>Sensors and Applied Sciences</i> , Open Access Journals from MDPI (ISSN 1424-8220 and 2076-3417, respectively).
Dates	2020 – Present Member of the Italian Academy for the Study of Parkinson’s Disease and Movement Disorders (LIMPE-DISMOV).
Dates	10/2019 Winner of the “Sapienza Ricerca - Bando Ateneo 2019” grant, Sapienza University of Rome, Italy. Title of the research: “Reactive postural strategies in patients with Parkinson’s Disease: a dynamic posturography with wearable sensors”.
Dates	07/2019 Winner of the “youth project” grant from the Italian Neurology Society, 50th national congress, Bologna, 12-15th Oct 2019.
Dates	06/2019 Winner of the “young authors award”, 64th national congress of the Italian Society of Clinical Neurophysiology (SINC) for the best Poster in the Movement Disorders Session. Title of the research: “Balance assessment by means of wearable sensors in Parkinson’s disease”.
Dates	2019 – Present Member of the Italian Society of Clinical Neurophysiology (SINC).
Dates	2018 – Present Member of the Italian Society of Neurology (SIN).
Dates	05/2017 “Excellent graduate”, Sapienza University of Rome, Italy (i.e., one of the most meritorious student of Sapienza University of Rome in the academic year 2015/2016).

List of Publications

1. Gazzanti Pugliese di Cotrone MA, Akhtar NF, Patera M, Gallo S, Mosca U, Ghislieri M, Ferraris C, Suppa A, Artusi CA, **Zampogna A**, et al. Early Detection of Dysphagia Signs in Parkinson’s Disease: An Artificial Intelligence-Based Approach Using Non-Invasive Sensors. *Sensors*. 2025; 25(22):6834. <https://doi.org/10.3390/s25226834>
2. **Zampogna A**, Pietrosanti L, Saggio G, Patera M, Falletti M, Bellia V, Fattapposta F, Costantini G, Suppa A. L-Dopa Comparably Improves Gait and Limb Movements in Parkinson’s Disease: A Wearable Sensor Analysis. *Biomedicines*. 2025; 13(11):2727. <https://doi.org/10.3390/biomedicines13112727>

3. **Zampogna A**, Suppa A, Patera M, Cavallieri F, Bove F, Fraix V, Castrioto A, Schmitt E, Pelissier P, Chabardès S, Meoni S, Moro E. Resting and Action Tremor in Parkinson's Disease: Pathophysiological Insights from Long-Term STN-DBS. *NPJ Parkinson's Disease*. 2025; 11(1):284. doi: 10.1038/s41531-025-01130-9
4. Gazzanti Pugliese di Cotrone MA, Balsi M, Picozzi N, **Zampogna A**, Bouchelaghem S, Suppa A, Davi L, Fabeni D, Gumiero A, Ferri L, Della Torre L, Pulitano P, Irrera F. Single-channel wearable EEG using low-power Qvar sensor and machine learning for drowsiness detection. *IEEE Sensors Journal*, vol. 25, no. 21, pp. 40668-40679, 1 Nov.1, 2025, doi: 10.1109/JSEN.2025.3612476.
5. Falletti M, Di Flumeri F, **Zampogna A**, Patera M, Fabbrini G, Suppa A. Acute and reversible dyskinesias secondary to lithium toxicity: case report and literature review. *BMC Neurol*. 2025; 25(1):393. doi: 10.1186/s12883-025-04419-7
6. Castelli Gattinara Di Zubiena F, **Zampogna A**, Patera M, Cusolito G, Apa L, Mileti I, Cannuli A, Suppa A, Paoloni M, Del Prete Z, Palermo E. Uncovering the kinematic signature of freezing of gait in Parkinson's disease through wearable inertial sensors. *Sensors (Basel)*. 2025. 25(16):5054. doi: 10.3390/s25165054.
7. Cavallieri F, Bove F, **Zampogna A**, Castrioto A, Meoni S, Gessani A, Schmitt E, Pélissier P, Valzania F, Suppa A, Pinto S, Chabardès S, Fraix V, Moro E. Clinical predictors of speech changes after subthalamic neurostimulation in Parkinson's disease. *Neurol Sci* 2025. Online ahead of print. <https://doi.org/10.1007/s10072-025-08420-3>
8. Castelli Gattinara Di Zubiena F, **Zampogna A**, Patera M, Cusolito G, Apa L, Mileti I, Cannuli A, Suppa A, Paoloni M, Del Prete Z, Palermo E. Uncovering the Kinematic Signature of Freezing of Gait in Parkinson's Disease Through Wearable Inertial Sensors. *Sensors* 2025; 25(16), 5054. <https://doi.org/10.3390/s25165054>.
9. Soares C, Correia C, Nunes Rato R, Gonçalves-Pinho M, **Zampogna A**, Costa A. Comparing human versus artificial intelligence for health literacy among patients with neurological disorders (HANDs study). *J Neurol*. 2025;272:575. doi:10.1007/s00415-025-13305-8.
10. Bianchini E, Alborghetti M, Galli S, Hansen C, **Zampogna A**, Suppa A, Salvetti M, Pontieri FE, Rinaldi D, Vuillerme N. Minimal Clinically Important Difference of Average Daily Steps Measured Through a Consumer Smartwatch in People With Mild-to-Moderate Parkinson Disease: Cross-Sectional Study. *JMIR Mhealth Uhealth*. 2025 Jul 29;13:e64213. doi: 10.2196/64213
11. Cilia R, Colucci F, Cereda E, Elia AE, Leta V, Barca S, Zibetti M, Carecchio M, Bonvegna S, Calandra-Buonaura G, Ceroni R, De Micco R, Tamburin S, Magistrelli L, Lena F, Mascia MM, Picillo M, Cossu G, Marano M, **Zampogna A**, Pellicano C, Fioravanti V, Pilotto A, Zangaglia R, Avenali M, Sorbera C, Di Biasio F, Arienti F, Nicoletti A, Bagella C, Malaguti MC, Ranghetti A, Caputo E, Alimonti D, Torre E, Oggioni GD, Leuzzi C, Romito LM, Andreasi NG, Devigili G, Telesse R, Braccia A, Gaudiano G, Mazzetti S, Invernizzi F, Garavaglia B, Imbalzano G, Ledda C, Antenucci P, Gozzi A, Bonato G, Percetti M, Giannini G, Sambati L, Schirinzi T, D'Anna M, Rinaldi D, Cavallieri F, Liccari M, Priori A, Sessa M, Tamma F, Canesi M, Solla P, Zappia M, Di Fonzo A, Avanzino L, Quartarone A, Valente EM, Pacchetti C, Padovani A, Valzania F, Pontieri FE, Suppa A, Pellecchia MT, Modugno N, Comi C, Tinazzi M, Tessitore A, Stefani A, Cortelli P, Isaias IU, Antonini A, Sensi M, Lopiano L, Eleopra R. Effects of GBA1 Variants in Patients With Parkinson's Disease and Levodopa-Carbidopa Intestinal Gel: A Nation-Wide, Multicenter, Longitudinal, "Real-World" Study. *The EPIC Study. European Journal of Neurology* 2025;32(7):e70179. doi:10.1111/ene.70179
12. Asci F, Saurio G, Pinola G, Falletti M, **Zampogna A**, Patera M, Fattapposta F, Scardapane S, Suppa A. Micrographia in Parkinson's Disease: Automatic Recognition through Artificial Intelligence. *Movement Disorders Clinical Practice* 2025. doi:10.1002/mdc3.70208
13. Ferese R, Suppa A, Campopiano R, Scala S, Sammarone F, Di Pilla L, Di Pardo A, Chiaravalloti MA, Griguoli AM, Cannella M, D'Alessio C, Storto M, Fanelli M, **Zampogna A**, Patera M, Inghilleri M, Ceccanti M, Cambieri C, Buttari F, Peconi C, Giardina E, Zampatti S, Centonze D, Gambardella S. New variants and genotype-phenotype correlation in KIF5A mutation: the contribution of a large Italian cohort. *J Med Genet*. 2025 Jun 25:jmg-2025-110801. doi: 10.1136/jmg-2025-110801.
14. Piervincenzi C, Asci F, Gangemi E, Funcis A, **Zampogna A**, Falletti M, Silvestri G, Rossi S, Zanna GD, Celletti C, Camerota F, Gianni C, Petsas N, Maggi L, Pantano P, Suppa A. Structural brain changes contributing to motor signs in pure hereditary spastic paraplegia type 4. *J Neurol*. 2025 Jun 3;272:440. doi: 10.1007/s00415-025-13155-4

15. Falletti M, Asci F, **Zampogna A**, Patera M, Suppa A. Cogwheel rigidity in Parkinson's disease: Clinical, biomechanical and neurophysiological features. *Neurobiol Dis.* 2025 May 28;212:106980. doi: 10.1016/j.nbd.2025.106980
16. Cilia R, Colucci F, Suppa A, Valentino F, Terranova C, Leuzzi C, Cordasco J, Fusi G, Floridia S, De Giorgi F, Telese R, Braccia A, **Zampogna A**, Pinola G, Patera M, Belluscio G, Crivellari S, Antoniazzi E, Cascino S, Giaco A, Masaracchio A, Moreschi GC, Catotti M, Eleopra R. Integrated management of atypical parkinsonism: a home-based patient-centered healthcare delivery based on telenursing-the IMPACT study protocol. *Ther Adv Neurol Disord.* 2025;18:17562864241299347. doi: 10.1177/17562864241299347.
17. Patera M*, **Zampogna A***, Pietrosanti L*, Asci F, Falletti M, Pinola G, Bianchini E, Di Lazzaro G, Rosati V, Grillo P, Giannini F, Fattapposta F, Costantini G, Pisani A, Saggio G, Suppa A. Abnormal arm swing movements in Parkinson's disease: onset, progression and response to L-Dopa. *J Neuroeng Rehabil.* 2025;22:47. doi: 10.1186/s12984-025-01589-w. *co-authorship
18. **Zampogna A**, Patera M, Falletti M, Pinola G, Asci F, Suppa A. Technological Advances for Gait and Balance in Normal Pressure Hydrocephalus: A Systematic Review. *Bioengineering (Basel).* 2025; 12(2):135. doi: 10.3390/bioengineering12020135
19. Falletti M, Asci F, **Zampogna A**, Patera M, Pinola G, Centonze D, Hallett M, Rothwell J, Suppa A. Rigidity in Parkinson's Disease: The Objective Effect of Levodopa. *Mov Disord.* 2025; doi: 10.1002/mds.30114
20. Cuccarelli M*, **Zampogna A***, Suppa A. The broad spectrum of malignant syndromes. *Neurobiol Dis.* 2024, 12:106734. doi: 10.1016/j.nbd.2024.106734. *co-authorship
21. **Zampogna A**, Borzi L, Soares C, Demrozi F, eds. (2024). High-tech personalized healthcare in movement disorders. Lausanne: Frontiers Media SA. doi: 10.3389/978-2-8325-5159-2
22. **Zampogna A**, Borzi L, Soares C, Demrozi F. Editorial: High-Tech Personalized Healthcare in Movement Disorders. *Front. Neurol.* 2024; 15:1452612. doi: 10.3389/fneur.2024.1452612
23. **Zampogna A**, Suppa A, Bove F, Cavallieri F, Castrioto A, Meoni S, Pelissier P, Schmitt E, Chabardes S, Fraix V, Moro E. Disentangling Bradykinesia and Rigidity in Parkinson Disease: Evidence from Short- and Long-Term Subthalamic Nucleus Deep Brain Stimulation. *Ann Neurol.* 2024. doi: 10.1002/ana.26961
24. **Zampogna A**, Borzi L, Rinaldi D, Artusi CA, Imbalzano G, Patera M, Lopiano L, Pontieri F, Olmo G, Suppa A. Unveiling the Unpredictable in Parkinson's Disease: Sensor-Based Monitoring of Dyskinesias and Freezing of Gait in Daily Life. *Bioengineering.* 2024; 11(5):440. <https://doi.org/10.3390/bioengineering11050440>
25. Irrera F, Gumiero A, **Zampogna A**, Boscari F, Avogaro A, Gazzanti Pugliese di Cotrone M.A, Patera M, Della Torre L, Picozzi N, Suppa A. Multisensor Integrated Platform Based on MEMS Charge Variation Sensing Technology for Biopotential Acquisition. *Sensors* 2024, 24, 1554. <https://doi.org/10.3390/s24051554>
26. Ferese R, Scala S, Suppa A, Campopiano R, Asci F, **Zampogna A** et al., Cohort analysis of novel SPAST variants in SPG4 patients and implementation of in vitro and in vivo studies to identify the pathogenic mechanism caused by splicing mutations. *Front Neurol.* 2023; 14:1296924. doi: 10.3389/fneur.2023.1296924.
27. Bianchini E, Galli S, Alborghetti M, De Carolis L, **Zampogna A**, Hansen C, Vuillerme N, Suppa A, Pontieri FE. Four Days Are Enough to Provide a Reliable Daily Step Count in Mild to Moderate Parkinson's Disease through a Commercial Smartwatch. *Sensors (Basel).* 2023;23(21):8971. doi: 10.3390/s23218971.
28. Suppa A, Asci F, Costantini G, Bove F, Piano C, Pistoia F, Cerroni R, Brusa L, Cesarini V, Pietracupa S, Modugno N, **Zampogna A** et al., Effects of deep brain stimulation of the subthalamic nucleus on patients with Parkinson's disease: a machine-learning voice analysis. *Front Neurol.* 2023;14:1267360. doi: 10.3389/fneur.2023.1267360
29. Asci F, Di Stefano G, Di Santo A, Bianchini E, Leone C, La Cesa S, **Zampogna A**, Cruccu G, Suppa A. Pain-motor integration in chronic pain: A neurophysiological study. *Clin Neurophysiol.* 2023;154:107-115. doi: 10.1016/j.clinph.2023.07.010
30. Pietrosanti L, Calado A, Maria Verrelli C, Pisani A, Suppa A, Fattapposta F, **Zampogna A**, Patera M, Rosati V, Giannini F, Saggio G. Harmonic Distortion Aspects in Upper Limb Swings during Gait in Parkinson's Disease. *Electronics* 2023, 12(3), 625; <https://doi.org/10.3390/electronics12030625>
31. Asci F, Falletti M, **Zampogna A**, Patera M, Hallett M, Rothwell J, Suppa A. Rigidity in Parkinson's disease: Evidence from biomechanical and neurophysiological measures. *Brain.* 2023; 5:awad114. doi:10.1093/brain/awad114

32. Castelli Gattinara Di Zubiena F, Menna G, Mileti I, **Zampogna A**, Asci F, Paoloni M, Suppa A, Del Prete Z, Palermo E. Machine Learning and Wearable Sensors for the Early Detection of Balance Disorders in Parkinson's Disease. *Sensors (Basel)*. 2022; 22:9903. doi: 10.3390/s22249903
33. **Zampogna A**, Cavallieri F, Bove F, Suppa A, Castrioto A, Meoni S, Pelissier P, Schmitt E, Bichon A, Lhomme E, Kistner A, Chabardes S, Seigneuret E, Fraix V, Moro E. Axial impairment and falls in Parkinson's disease: 15 years of subthalamic deep brain stimulation. *npj Parkinson's Disease* (2022) 8:121; <https://doi.org/10.1038/s41531-022-00383-y>
34. Ferese R, Scala S, Suppa A, Campopiano R, Asci F, Chiaravalloti MA, **Zampogna A**, D'Alessio C, Fittipaldi F, Buttari F, Di Pardo A, Giardina E, Zampatti S, Fornai F, Novelli G, Fanelli M, Zecca C, Logroscino G, Centonze D, Gambardella S. Decipher non-canonical SPAST splicing mutations with the help of functional assays in patients affected by spastic paraplegia 4 (SPG4). *Clin Genet*. 2022. doi: 10.1111/cge.14142
35. Asci F, Scardapane S, **Zampogna A**, D'Onofrio V, Testa L, Patera M, Falletti M, Marsili L, Suppa A. Handwriting Declines with Human Ageing: A Machine Learning Study. *Frontiers in Aging Neuroscience* 2022, 6;14:889930. doi: 10.3389/fnagi.2022.889930
36. Manoni A, Gumiero A, **Zampogna A**, Ciarlo C, Panetta L, Suppa A, Della Torre L, Irrera F. Long-Term Polygraphic Monitoring through MEMS and Charge Transfer for Low-Power Wearable Applications. *Sensors* 2022, 22, 2566. <https://doi.org/10.3390/s22072566>
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