

Giacomo Valli



PhD

Creator of *openhdemg*. Postdoc at UNIBS (IT). Currently Investigating the electrophysiological modifications happening during disuse, disease and aging and linking this information to the molecular alterations of the muscle. #coding #python #hdemg #neurophysiology



Contact

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Coding

Python ★★★★★
MATLAB ★★★★★
Git/GitHub ★★★★★

Languages

English ★★★★★
Italian ★★★★★

Education

	PhD
October 2020 – October 2023	Neuromuscular Physiology. University of Padova – Italy
	Course
April 2023 – April 2023	Skeletal Muscle Performance in Basic and Applied Exercise Studies. University of Copenhagen – Denmark
	Research Scholarship
September 2018 – September 2019	Molecular Biology of Exercise. University of Urbino – Italy
	Summer School
July 2018 – July 2018	Research Methods in Sports Science. University of Urbino – Italy
	Master Degree
October 2016 July 2019	Sports Science. 110/110 cum laude
	Erasmus
September 2018 – December 2018	Study and research. University College Dublin – Ireland
	Bachelor Degree
2016	Sports science. 110/110 cum laude



Work experience

2023 -
Current *Postdoc position:* Developing methods to assess how the utilization of exoskeletons influences motor strategies and motor learning.
Location: University of Brescia UNIBS (IT).
Supervisor: Prof. Francesco Negro.



Software development

2023 -
Current *openhdemg*: a free and open-source framework for the automated analysis of motor unit properties.
Role: creator and maintainer of the project and developer of the library.
Website: <https://www.giacomovalli.com/openhdemg/>



Featured publications

- 2023 - Tutorial: Analysis of central and peripheral motor unit properties from decomposed High-Density surface EMG signals with openhdemg.
Valli G, Ritsche P, Casolo, A, Negro F, De Vito G.
Doi: 10.1016/j.jelekin.2023.102850
- 2023 - Lower limb suspension induces threshold-specific alterations of motor units' properties that are reversed by active recovery.
Valli G, Sarto F, Casolo, A, Del Vecchio A, Franchi M, Narici M, De Vito G.
Doi: 10.1016/j.jshs.2023.06.004.
- 2022 - Altered muscle mitochondrial, inflammatory and trophic markers, and reduced exercise training adaptations in type 1 diabetes.
Minnock D, Annibalini G, Valli G, Saltarelli R, Krause M, Barbieri E, De Vito G.
Doi: 10.1113/JP282433.s
- 2021 - Delayed effect of different exercise modalities on glycaemic control in type 1 diabetes mellitus: A systematic review and meta-analysis.
Valli G, Minnock D, Tarantino G, Neville RD.
Doi: 10.1016/j.numecd.2020.12.006.



Awards & Grants

- 2022 - Award: 500 € - Young Investigators Award
Awarded from the European College of Sports Science (ECSS)
Presentation: *Ten days of unilateral lower limb suspension induce threshold-specific alterations of motor units' properties that are restored by 21-days active recovery*
- 2020 - Award: 14.000 € - Support for research
Awarded from Fondazione CARIPARO to the best PhD applications (University of Padova - UNIPD)



Published research

All my published work is available on:

- [Google Scholar](#)
- [ResearchGate](#)
- [ORCID](#)

Journal articles

- 2023 [Valli G](#), Ritsche P, Casolo, et al. Tutorial: Analysis of central and peripheral motor unit properties from decomposed High-Density surface EMG signals with *openhdemg*. J Electromyogr Kinesiol. 2023. doi: 10.1016/j.jelekin.2023.102850.
[Valli G](#), Sarto F, Casolo A, et al. Lower limb suspension induces threshold-specific alterations of motor units' properties that are reversed by active recovery. J Sport Heal Sci. 2023.doi:10.1016/j.jshs.2023.06.004
- 2022 de Marco Castro E, Valli G, Buffière C, et al. Peripheral Amino Acid Appearance Is Lower Following Plant Protein Fibre Products, Compared to Whey Protein and Fibre Ingestion, in Healthy Older Adults despite Optimised Amino Acid Profile. Nutrients. 2023. doi:10.3390/nu15010035
Sarto F, Valli G, Monti E. Motor unit alterations with muscle disuse: what's new? J Physiol. 2022. doi:10.1113/JP283868
Sarto F, Stashuk DW, Franchi M V., et al. Effects of short-term unloading and active recovery on human motor unit properties, neuromuscular junction transmission and transcriptomic profile. J Physiol. 2022. doi:10.1113/JP283381
Minnock D, Annibalini G, Valli G, et al. Altered muscle mitochondrial, inflammatory and trophic markers, and reduced exercise training adaptations in type 1 diabetes. J Physiol. 2022. doi:10.1113/JP282433
- 2021 Gervasi M, Barbieri E, Capparucci I, et al. Treatment of achilles tendinopathy in recreational runners with peritendinous hyaluronic acid injections: A viscoelastometric, functional, and biochemical pilot study. J Clin Med. 2021. doi:10.3390/jcm10071397
[Valli G](#), Minnock D, Tarantino G, Neville RD. Delayed effect of different exercise modalities on glycaemic control in type 1 diabetes mellitus: A systematic review and meta-analysis. Nutr Metab Cardiovasc Dis. 2021. doi:10.1016/j.numecd.2020.12.006
Natalucci V, Virgili E, Calcagnoli F, et al. Cancer related anemia: An integrated multitarget approach and lifestyle interventions. Nutrients. 2021. doi:10.3390/nu13020482
- 2020 Minnock D, Annibalini G, Le Roux CW, et al. Effects of acute aerobic, resistance and combined exercises on 24-h glucose variability and skeletal muscle signalling responses in type 1 diabetics. Eur J Appl Physiol. 2020. doi:10.1007/s00421-020-04491-6



Contribution at conferences

Symposium:

- 2022 ISEK, International Society of Electrophysiology and Kinesiology. Is Type 1 diabetes really causing a sort of accelerated neuromuscular aging?

Oral:

- 2023 PDM, Padua Days on Muscle and Mobility Medicine. Motor unit conduction velocity is reduced after 10 days of unilateral limb suspension.
- 2022 ECSS, European College of Sport Science. Degeneration of neuromuscular control in humans is detectable after 10 days of limb suspension and is completely recovered after a 21 days training intervention.
- 2021 SISMES, Società Italiana delle Scienze Motorie e Sportive. Alterations in the control of motor units studied with high-density EMG after 10 days of unilateral suspension of the lower limb in humans.

Poster:

- 2021 IIM: Interuniversity Institute of Myology. Impact of type 1 diabetes and exercise intervention on molecular markers of skeletal muscle remodelling.