

PERSONAL INFORMATION



VALENTINA MUOLLO



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RESEARCH WORK EXPERIENCE

Jan 2023-May 2023

Postdoc at the Department of Sport Science at the University of Vienna – Ref. B. Wessner. Submission of a grant proposal for the FWF Austrian Science Fund called “ESPRIT” project titled: “Biomarkers for Sarcopenic Obesity: microRNAs, Exercise and Aging”.

1st Oct 2019-30th Sept 2022

Phd student at the Department of Medicine (October 1, 2019 – September 30, 2022) (University of Verona) – Ref. M. Zamboni and A. Rossi. Our research is focused on **ageing and obese population**, by investigating different strategies to prevent and **counteract sarcopenia/sarcopenic-obesity** in physical function, body composition and *in-vivo* muscles’ function and quality:

- First project – Characterisation of knee extensor and knee flexor muscles with **isokinetic dynamometer** in elderly subjects: a comparison for sex and obesity
- Second project MAYBE Sarco-Ob study (longitudinal study) – **Combined interventions of amino acids integration, diet and exercise** in older patients with sarcopenic obesity: effects on physical activity frailty syndrome – collaboration with B. Trento Hospital, section of Geriatrics, Department of Medicine (Verona). Aim activity: strength training programme, data, and analysis collection on muscle strength test (i.e., Cybex test, 1-RM test on isotonic machines, handgrip), physical function (SPPB) and body composition (DEXA).

2016-2019

Assistant in data collection in the project “Synergistic interventions for the treatment of mitochondrial dysfunction and complications in women with type 2 diabetes” – Ref. S. Pogliaghi and E. Calabria. Aim activity: data and analysis collection in cardiopulmonary tests, handgrip, 1-RM Leg press, intervention (HIIT training program for 8 weeks)

Post graduated scholarship holder to Centre of Research of Sport Mountain and Health (CeRiSM) – Department of Neuroscience, Biomedicine and Movement Sciences (University of Verona) – Ref. F. Schena

- June – September 2018: Assistant in data collection in thesis project “Confronto della risposta muscolare degli arti superiori e del tronco tra attività di Nordic Walking e esercizi di rinforzo muscolare specifici” at CeRiSM. Aim activity: data collection
- 2016 – 2019: Functional tests for severe obesity patients – collaboration with Solatrix Hospital (Rovereto). Aim activity: data collection.
- 2016 – 2018: Research project WAVE study – Walking and Aging in VERona” – collaboration with B. Trento Hospital, section of Geriatrics, Department of Medicine (University of Verona). Aim activity: recruitment subjects, supervised walking and Nordic Walking training, data and analysis collection.

International experiences and collaboration

- 2016 – 2017: Corroborate a new “Functional and disabilities Questionnaire in obese population” (based on International Classification on Functioning, Disability and Health) – collaboration with B. Trento Hospital, section of Geriatrics, Department of Medicine (University of Verona). Aim activity: functional capacity tests, data collection.
- From Jan 2023 to May 2023: Research assistant at University of Vienna– Vienna (Austria). Detailed research experience: Writing a grant proposal and experience in molecular analysis – Ref. Barbara Wessner
- From April 2022 to November 2022: Visiting Phd student at University of Queensland– Brisbane (Australia). Detailed research experience: The role of exercise and cardiorespiratory fitness in obesity-related chronic disease – Ref. Shelley Keating
- From 1st Oct 2021 to 1st April 2022: Visiting Phd student at Southern University of Denmark – Odense (Denmark). Detailed research experience: Evaluation of energy expenditure, muscle function and body composition in older and very older adults – Ref. Paolo Caserotti
- August 2019: Visiting student (3 weeks) at “Victoria University” – Melbourne (Australia)

Published Journal Articles

- E. Calabria, **V. Muollo**, Cavedon V., Capovin T., Saccenti L., Passarotti F., Ghiotto L., Milanese C., Gelati M., Rudi D., Salvagno G.L., Lippi G., Tam E., Schena F., Pogliaghi S, “Increasing dysglycemia is associated to T2D and impaired PBMCs mitochondrial function”, *Biomedicines*, 11(1), 121
- L. Ghiotto, **V. Muollo**, T. Tatangelo, F. Schena, A.P. Rossi, “Exercise and physical performance in older adults with sarcopenic obesity: a systematic review”, 2022, *Frontiers in Endocrinology*, 13, 913953
- A.P. Rossi*, **V. Muollo***, Z. Dalla Valle, S. Urbani, M. Pellegrini, M. El Ghoch, (*first co-authors) “The role of body composition and nutrition in COVID-19 pandemia”, 2022, *Nutrients*, Volume 14 (17), 3493
- T. Tatangelo*, **V. Muollo***, L. Ghiotto, F. Schena, A.P. Rossi, “Exploring the association between handgrip, muscle strength of the lower limbs and physical performance in older adults: a narrative review” (*first co-authors), 2022, *Experimental Gerontology*, 111902
- **V. Muollo**, T. Tatangelo, L. Ghiotto, V. Cavedon., C. Milanese, M. Zamboni, F. Schena, A.P. Rossi “Is handgrip strength a marker of muscle and physical function of the lower limbs? Sex differences in elders with obesity”, 2022, *Nutrition, metabolism and Cardiovascular diseases*, Volume 31, Issue 4, Pages 1247-1256
- **V. Muollo**, A. Zignoli, L. Ghiotto, C. Milanese, M. Zamboni, F. Schena, A.P. Rossi “Knee flexor and extensor torque ratio in elderly men and women with and without obesity: a cross-sectional study”, 2022, *Aging Clinical and Experimental Research*, Volume 34, Issue 1, Pages 209-214
- **V. Muollo**, A.P. Rossi, C. Milanese, M. Zamboni, R. Rosa, F. Schena, B. Pellegrini, “Prolonged unsupervised Nordic walking and walking exercise following six months of supervision in adults with overweight and obesity: a randomized clinical trial”, 2021, *Nutrition, metabolism and Cardiovascular diseases*, Volume 31, Issue 4, Pages 1247-1256

- **V. Muollo**, A.P. Rossi, A. Zignoli, M. Teso, C. Milanese, V. Cavedon, M. Zamboni, F. Schena, C. Capelli, S. Pogliaghi “Full characterisation of knee extensors’ function in ageing: effect of sex and obesity”, 2021, International Journal of obesity, 45: 895-905
- A. P. Rossi, S. Urbani, S. Gattazzo, N. Nori, F. Fantin, E. Zoico, G. Mazzali, **V. Muollo**, M. El Ghoch, M. Zamboni “The Mini Sarcopenia Risk Assessment (MSRA) Questionnaire score as a predictor of skeletal muscle mass loss”, 2021, Aging Clinical and Experimental Research, 1-5
- A. Zignoli, A. Fornasiero, P. Rota, **V. Muollo**, L. Peyrè Tartaruga, D. A. Low, F. Y. Fontana, D. Besson, M. Püronger, S. Ring-Dimitriou, L. Mourot “Oxynet: a collective intelligence that detects ventilatory thresholds in cardiopulmonary exercise tests”, 2020, European Journal of Sport Science, 1-38
- A. P. Rossi, S. Urbani, F. Fantin, N. Nori, P. Brandimarte, A. Martini, E. Zoico, G. Mazzali, A. Babbanini, **V. Muollo**, M. Zamboni “Worsening disability and hospitalization risk in sarcopenic obese and dynapenic abdominal obese: a 5.5 years follow-up study in elderly men and women”, 2020, Frontiers in Endocrinology, 11:314
- A. P. Rossi, **V. Muollo**, F. Fantin, E. Masciocchi, S. Urbani, M. Taylor, B. Caruso, C. Milanese, C. Capelli, F. Schena, M. Zamboni “Effects of diet combined with Nordic walking or walking program on weight loss and arterial stiffness in postmenopausal overweight and obese women: the Walking and Aging Verona pilot study”, 2019, European Journal of Preventive Cardiology, 27(19), 2208-2211
- **V. Muollo**, A. P. Rossi, C. Milanese, E. Masciocchi, M. Taylor, M. Zamboni, R. Rosa, F. Schena, B. Pellegrini “The effects of exercise and diet program in overweight people - Nordic Walking versus walking”, 2019, Clinical Interventions in Aging, 14: 1555
- A. Monte, **V. Muollo**, F. Nardello, P. Zamparo “Sprint running: how changes in step frequency affect running mechanics and leg spring behavior at maximal speed”, 2016, Journal of Sport Sciences, 35(4), 339-345

Articles in preparation/under review

- **V. Muollo**, Viktoria Steinhauser, Vikram V Shanbhogue, Lars G Hvid, Daniela Caporossi, Ivan Dimauro, Marianne Andersen, Cristina Fantini, Elisa Grazioli, Elsa S. Strotmeyer, Paolo Caserotti, “Bone microarchitecture and bone strength following a 12-week high intensity progressive power training in mobility-limited older adults”, **In preparation**
- **V. Muollo**, A. P. Rossi, C. Milanese, V. Cavedon, F. Schena, M. Zamboni, E. Zoico (The list of the authors has yet to be established), “The efficacy of five months of hypocaloric diet combined with resistance training alone or amino acids supplementation in dynapenic or sarcopenic obese older adults: A randomized double blind controlled trial”, **In preparation**

Abstract and scientific conferences

Oral presentations (presenter):

- ECSS congress (2019), **V. Muollo**, C. Milanese, A. P Rossi, E. Masciocchi, M. Taylor, F. Schena, B. Pellegrini, “The long-term efficacy of Nordic walking versus Walking exercise for overweight treatment”
- SISMES X National Congress (2018), **V. Muollo**, F. Gilli, C. Milanese, A. P Rossi, E. Masciocchi, M. Taylor, D. Rudi, M. Zamboni, F. Schena, “Six months of Nordic Walking and Walking activity in obese middle aged population: the best way for an improvement in physical activity and body composition”

- SISMES IX National Congress (2017), **V. Muollo**, F. Gilli, C. Tarperi, E. Masciocchi, M. Taylor, A. P Rossi, F. Schena, "Healthy aging in obese: with or without pools? Preliminary results"
- SISMES VIII National Congress (2016), **V. Muollo**, F.Y. Fontana, G. Spigolon, S. Pogliaghi, "Effect of strength training on "excess" VO₂ in Older Adults"

Poster presentation:

- SISMES X National Congress (2022), L. Ghiotto, **V. Muollo**, T. Tatangelo, M. Zamboni, F. Schena, "Evaluation of oxygen and energy consumption with a telemedicine protocol: responses in healthy vs obese older population. Preliminary results"
- ACSM congress (June 2021), **V. Muollo**, L. Ghiotto, C. Milanese, E. Zoico, A. P. Rossi, F. Schena. "Effects of strength training alone or with amino acids in sarcopenic obese adults"
- EICO congress (September 2020), **V. Muollo**, Rossi A.P, Zignoli A., Milanese C., Zamboni M., Capelli C., Schena F. "Obesity combined with ageing impairs the functional abilities of the knee extensor muscles during isometric and concentric contractions in women"
- ECSS congress (October 2020), **V. Muollo**, Rossi A.P, Zignoli A., Milanese C., Zamboni M., Pogliaghi S., Capelli C., Schena F. "The effects of combined obesity and ageing on knee extensor muscles torque and power in men and women"

Oral presentation (co-author):

- SISMES X National Congress (2021), L. Ghiotto, **V. Muollo**, C. Chiara, E. Zoico, M. Zamboni, Rossi A.P., Schena F., "Physical performance in adults affected by sarcopenic obesity: the effects of strength training alone or combined with different dosages of amino acids supplementation. Preliminary results"
- SISMES X National Congress (2018), F. Gilli, A. Callovini, A. Fornasiero, S. Skafidas, **V. Muollo**, G. Boccia, F. Schena, B. Pellegrini, "A three-week exercise and nutritional intervention program improves post exercise cardiac autonomic recovery in obese adults"

Poster presentation (co-author):

- SISMES XI National Congress (2019), **V. Muollo**, C. Milanese, Rossi A. P, E. Masciocchi, M. Taylor, M. Zamboni, R. Rosa, F. Schena, B. Pellegrini, "Effects of six months supervised and six months unsupervised Nordic walking versus Walking exercise on weight and body composition parameters in overweight and obese adults"
- SISMES VII National Congress (2015), A. Monte, **V. Muollo**, F. Nardello, P. Zamparo, "Sprint running: how changes in stride frequencies affect leg and vertical stiffness at "maximal running speed"

ACADEMIC ACTIVITIES

Teaching experiences

- 2021-2022: To hold a lecture (3 hours) for “master’s in Overweight and obesity: pathophysiology, clinical and multidisciplinary treatment (Level I)” at University of Verona (Italy) ref. Mauro Zamboni
- 2021-2022: To hold a lecture (7 hours) for “” – during Master’s degree in Exercise as Medicine at Southern University of Denmark (Odense - Denmark)
- 2020-2021: Assistant for “Nordic walking technique and teaching” (12 hours) during: Master’s degree in Sport Science and Physical Performance and Master’s degree in Preventive and Adapted Exercise Science ref. Barbara Pellegrini
- 2020-2021: To hold a lecture (2 hours) for “master’s in Exercise programming for Exercise-sensitive Pathologies (Level II)” at University of Verona (Italy) – ref. Silvia Pogliaghi
- 2020-2021: To hold a lecture (6 hours) for “master’s in research in Movement Sciences (Level II)” at University of Verona (Italy) ref. Silvia Pogliaghi
- 2019-2020: Assistant for “Methodology of Sport training” – during: Master’s degree in Sport Science and Physical Performance and Master’s degree in Preventive and Adapted Exercise Science – ref. Federico Schena
- 2019-2020: Assistant for “Methodology of Sport training” – during: Master’s degree in Sport Science and Physical Performance and Master’s degree in Preventive and Adapted Exercise Science – ref. Federico Schena
- 2017-2018: Assistant for “Methodology of Sport training” – during master’s degree in Sport Science and Physical Performance – ref. Federico Schena
- 2015-2016: Assistant for “Training Techniques and Methodology – during Bachelor’s degree in sport and Exercise Sciences – ref. Federico Schena
- 2014-2015: Assistant for “Training Techniques and Methodology – during Bachelor’s degree in sport and Exercise Sciences – ref. Federico Schena

Experiences of supervising students

- Co-tutor for thesis in Master’s degree in Preventive and Adapted Exercise Science with title: Cambiamenti del profilo forza-velocita’ e potenza dopo un allenamento di forza in anziani con obesità sarcopenica – Verona, 2023
- Co-tutor for thesis in Master’s degree in Preventive and Adapted Exercise Science with title: Impatto sulla composizione corporea dell’allenamento di forza vs allenamento di forza e supplementazione aminoacidica in soggetti con obesità sarcopenica – Verona, 2022
- Co-tutor for thesis in Master’s degree in Preventive and Adapted Exercise Science with title: Relazione tra handgrip, performance fisica e forza muscolare degli arti inferiori in anziani affetti da obesità: potenziali indicatori nella gestione della sarcopenia? – Verona, 2022
- Co-tutor for thesis in Master’s degree in Preventive and Adapted Exercise Science with title: “Physical performance in adults affected by sarcopenic obesity: the effects of strength training alone or combined with different dosages of amino acids supplementation” – Verona, 2021
- Co-tutor for thesis in Master’s degree in Preventive and Adapted Exercise Science with title: “Il ruolo dell’allenamento di forza sulla performance muscolare nelle persone

anziane con obesità sarcopenica” – Verona, 2021

- Co-tutor for thesis in Master’s degree in Preventive and Adapted Exercise Science with title: “Il ruolo del solo allenamento di forza o combinato alla supplementazione di amminoacidi in una popolazione anziana con obesità sarcopenica” – Verona, 2020
- Co-tutor for thesis in Master’s degree in Preventive and Adapted Exercise Science with title: “L’effetto dell’obesità sulla forza muscolare isometrica ed isocinetica degli arti inferiori: un confronto tra uomini e donne anziane” – Verona, 2020
- Co-tutor for thesis in Master’s degree in Preventive and Adapted Exercise Science with title: “Analisi dell’efficacia di un intervento prolungato di cammino e Nordic walking nella popolazione sovrappeso” – Verona, 2019
- Co-tutor for thesis in Master’s degree in Preventive and Adapted Exercise Science with title: “Nordic Walking e cammino: la sfida all’obesità. Analisi di efficacia di un intervento supervisionato” – Verona, 2018

Peer reviewer experiences

- Frontiers in Endocrinology
- PLOS ONE
- Frontiers in Physiology
- Scientific reports
- BMC Geriatrics
- International Journal of General Medicine
- Annals of Medicine
- Journal of Clinical medicine

GRANTS FOR RESEARCH FUNDING

- Participation for the 9th Edition of “Fondo Giancesini Emma” 2022 for financing a project abroad. Total amount for 9-12 months: euro 35000. **Not granted**
- Phd student short term mobility 2021 for sustaining the research period abroad at “University of Southern Denmark – Department Of Sports Science and Clinical Biomechanics” – Odense, Danimarca. **Total amount for 3 months: euro 1800**
- Phd student international mobility programme 2021/2022 for sustaining the research period abroad at “University of Queensland – Department Of School of Human and Nutrition Sciences” – Brisbane, Australia. **Total amount for 6 months: euro 4130**

EDUCATION

From 2019 to 2022

PhD in Biomedical, Clinical and Experimental Sciences, Department of Medicine, Graduate School of Life and Health Science
University of Verona, Verona (Italy)

Final grade: Excellent

Thesis: The impact of obesity on muscle function in older adults: from clinical evaluation to lifestyle management

Advisor: M. Zamboni and A. P. Rossi

From 2014 to 2016

Master's degree in Preventive and Adapted Exercise Science
University of Verona, Verona (Italy)

Final grade: 110/110 with honors

Thesis: Effect of strength training on VO2 "excess" in young and old adults

Advisor: S. Pogliaghi

From 2011 to 2014

Bachelor's degree in Sport and Exercise Science
University of Verona, Verona (Italy)

Final grade: 110/110 with honors

Thesis: Grasso buono e grasso cattivo: impatto dell'esercizio fisico e della restrizione calorica sul tessuto adiposo addominale

Advisor: A. Cevese

PERSONAL SKILLS

Mother tongue(s)

Italian

English

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
B2	B2	B2	B2	B2
Replace with name of language certificate. Enter level if known.				

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
Common European Framework of Reference for Languages

Job-related skills

General software:

- Microsoft Office (Word, Excel, Powerpoint)

Specific software:

- OriginLab graphing and analysis
- LabChart ADInstruments
- MATLAB (beginner)
- IBM SPSS Statistics (Software for statistical analysis): t-test, tests for normal distribution of data, Chi-square, correlation analysis, one-way ANOVA, two-way ANOVA, three-way ANOVA, ANCOVA, simple linear regression analysis, multi linear regression analysis
- SigmaPlot (Scientific Graphing and data analysis)
- Graphpad Prism 8 (Biostatistics and scientific graphing)
- Kinovea, Tracker Video Analysis and Modeling Tool
- MRI analysis (SliceOmatic 5.0 - TomoVision)

Measurements

- Isokinetic machine
- Metabolimeters (Quark CPET for laboratory tests and K5 for field tests)
- Optojump e photocells system (Microgate)
- Portapress e Near Infrared Spectroscopy (NIRS)
- Cell loads (for force's measure)
- Handgrip dynamometer

- Functional tests to screen/monitor sarcopenia

Verona, 17/10/2023

Signature

Valentina Muollo