

CURRICULUM VITAE

CHIARA ZOPPIROLI PhD

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Education

- 2014: PhD attainment in "*Science of Physical Exercise and Human Movement*", Department of Neurological, Neuropsychological and Movement Sciences, University of Verona, Italy discussing the thesis "*Biomechanical and energetic aspects of cross-country skiing double poling technique*"
- 2012: three-months experience as *visiting student* by the "Swedish Winter Sport Research Center", Mid Swedwn University, Östersund, Sweden
- 2011: student attending at the PhD course (first year) in "*Science of Physical Exercise and Human Movement*", Department of Neurological, Neuropsychological, Morphological and Movement Sciences, University of Verona, Italy
- 2010: master degree in "*Sport Science*" at the Verona University, with the discussion of the thesis "*The perception of effort in the classical cross-country skiing techniques and its role in the locomotion choice*". Supervisor prof. Federico Schena. Vote: 110 with honours"
- 2007: study activities by the CeBiSM labs in Rovereto, Italy
- Beachelor degree in "*Physical Education and Sport*" the Verona University, with the discussion of the thesis "*Kinematic and kinetic analysis of diagonal stride: effect of slope and training*". Supervisor prof. Federico Schena. Vote: 110 with honours"
- 2006-2007: study activities by the CeBiSM labs in Rovereto, Italy
- 2002: High-school at the Liceo Socio-Psico-Pedagogico "A. Maffei" di Riva del Garda. Vote: 100/100

Academic work experiences

- August 2017 – July 2018: research fellow at the University of Verona for the project: "*Evaluation of muscular activity in the locomotion forms that include the use of the poles*" (third year)
- August 2016 – July 2017: research fellow at the University of Verona for the project: "*Evaluation of muscular activity in the locomotion forms that include the use of the poles*" (second year)
- 2015-2016: maternity
- September 2014 – August 2015: research fellow at the University of Verona for the project: "*Evaluation of muscular activity in the locomotion forms that include the use of the poles*" (first year)
- 2013-2014: maternity
- 2010: collaboration with CeRiSM (Rovereto, Italy) within the project "Trentino Lab: functional evaluation of athletes"

2009: maternity

2008: collaboration with CeBiSM (Rovereto, Italy) within the project “Trentino Lab: functional evaluation of athletes”

2007: technician assistant by CeBiSM (Rovereto, Italy) for the functional evaluation of the athletes

Teaching activities

a.a. 2017-2018: professor of the academic course “Techniques and methodologies of skiing”, Verona University

a.a. 2017-2018: teaching assistant of the integrative lab didactics within the academic course “Techniques and methods of functional evaluation”, Verona University

a.a. 2016-2017: teaching assistant of the integrative lab didactics within the academic course “Techniques and methods of functional evaluation”, Verona University

a.a. 2014-2015: teaching assistant of the integrative lab didactics within the academic course “Techniques and methods of functional evaluation”, Verona University

a.a. 2012-2013: teaching assistant of the course in “Nordic walking: technique and didactics”, specialized degree in “Preventative and Adapted Motory activity Science”, Verona University

a-a. 2011-2012: teaching assistant of the integrative lab didactics within the academic course “Training methodology 2” , Verona University

teaching assistant of the integrative lab didactics within the academic course “Movement and sport biomechanics”, master degree in “*Sport Science*”, Bachelor degree in “*Physical Education and Sport*”, Verona University

Acknowledgments

a.a. 2016-2017: named cultists of the matter “Techniques and methods of functional evaluation” in the master degrees of Preventative and Adapted Motory activity Sciences and Sport and Physical Performance Sciences, Verona University

a.a. 2016-2017: named cultists of the matter “Technique and didactics of skiing” in the master degrees of Sport and Physical Performance Sciences, Verona University

a.a. 2014-2015: named cultists of the matter “Techniques and methods of functional evaluation” in the master degrees of Preventative and Adapted Motory activity Sciences and Sport and Physical Performance Sciences, Verona University

2015: 1st place at the Young Investigator Award Competition in 3rd International Congress on Science and Nordic Skiing (ICSNS), with the investigation report “Does a short-term high-intensity double poling exercise elicit fatigue and alter the movement biomechanics in high-level cross-country skiers?”, Vuokatti (Finland), 5-8th June

2012: 3rd place at the Madella Award Competition with the investigation report “Effetto dell’allenamento sull’espressione della Potenza gesto-specifica in giovani atleti d’elite di sci nordico”, Rome, October the 17th

Technical skills and competences

Utilization and management of the instrumentations that are typical for a research laboratory for Sport Science, both in metabolic and biomechanical field (Metabolic charts, devices for the measurement of blood lactate concentration, high precision and frequency movement capture systems, load cells, force platforms, accelerometers, electromyographic devices, instrumented insoles).

Utilization of Microsoft Office, MatLab and SPSS for data management and analysis

Attendance at congresses

1st National Congress Dalla scienza alla prestazione, Bologna (Italy), May 2018

9th SISMES National Congress, Brescia (Italy), Settembre 2017

3rd International Congress on Science and Nordic Skiing, Vuokatti (Finland), June 2015

18th International Congress European College of Sport Science, Barcelona (Spain), July 2013

4th National Congress Giovani, Sport e Montagna, Predazzo, Italy, May 2013

4th SISMES National Congress, Palermo, Ottobre 2012

63rd National Congress Società Italiana di Fisiologia, Verona, September 2012.

2nd International Congress on Science and Nordic Skiing, Vuokatti (Finland), May 2012

4nd International Congress Mountain, Sport & Health Rovereto (Italy), November 2011

3rd SISMES National Congress, Verona September 29th - October 1st, 2011

3rd International Congress Mountain, Sport & Health Rovereto (Italy), November 2009

2nd International Congress Mountain, Sport & Health Rovereto (Italy), October 2007

1st International Congress Mountain, Sport & Health Rovereto (Italy), November 2005

Abstract for congresses

Zoppiroli C, Pellegrini B, Skafidas S, Bortolan L, Schena F.

Whole body kinematic description while cross country skiing on the snow: experimental settings and tracking methodology for a good analysis. 9th SISMES National Congress, Brescia, Italy, September 2017

Zoppiroli C, Pellegrini B, Bortolan L, Schena F.

Does a short-term high-intensity double poling exercise elicit fatigue and alter the movement biomechanics in high-level cross-country skiers? 3rd ICSNS, Vuokatti, Finland, June 2015

Zoppiroli C, Pellegrini B, Bortolan L, Savoldelli A, Schena F.

Energetic cost of locomotion and biomechanical aspects of the double poling technique. ECSS, Barcelona, July 2013

Zoppiroli C.

La valutazione degli aspetti muscolari nello sci di fondo. **Giovani, Sport e Montagna**, Predazzo, May 2013

Zoppiroli C, Pellegrini B, Savoldelli A, Bortolan L, Schena F

CoM displacement influences the energetic cost of locomotion during the double poling technique. 4th SISMES National Congress, Palermo, Ottobre 2012

Pellegrini B, **Zoppiroli C**, Bortolan L, Zamparo P, Schena F. Slope adaptations of pole and ski propulsion in two cross country skiing techniques. 4th SISMES National Congress, Palermo, Ottobre 2012

Zoppiroli C, Pellegrini B, Quaglia D, Bortolan L, Schena F

Cost of force generation in double poling cross-country skiing. 63rd National Congress Società Italiana di Fisiologia, Verona, September 2012.

Pellegrini B, **Zoppiroli C**, Bortolan L, Zamparo P, Schena F.

Cost of locomotion on flat and uphill in three different cross country skiing techniques. 63rd National Congress Società Italiana di Fisiologia, Verona, September 2012.

Zoppiroli C, Pellegrini B, Quaglia D, Bortolan L, Schena F

Performance level and stretch-shortening cycle effectiveness during double poling. 2nd ICSNS, Vuokatti, Finland, May 2012

Pellegrini B, **Zoppiroli C**, Bortolan L, Zamparo P, Schena F. Contribution of body segments motion to total mechanical work in three classical cross country skiing techniques. 2nd ICSNS, Vuokatti, Finland, May 2012

Zoppiroli C, Pellegrini B, Bortolan L., Savoldelli A., Schena F. Cost of force generation as an index of performance ability in cross country skiers. 4nd International Congress Mountain, Sport & Health Rovereto, November 2011

Pellegrini B, **Zoppiroli C**, Brighenti A, Bortolan L, Schena F. Equipment for mountain walking. 4nd International Congress Mountain, Sport & Health Rovereto, November 2011

Zoppiroli C, Pellegrini B, Bortolan L, Schena F. Effect of training on specific power expression in elite cross country skiers. 3rd SISMES National Congress, Verona September 29- October 1, 2011

Pellegrini B, **Zoppiroli C**, Bortolan L, Zamparo P, Schena F. Classical cross country skiing, an across technique biomechanical comparison. 2nd SISMES National Congress, Turin September 30- October 2, 2010

Pellegrini B, **Zoppiroli C**, Bortolan L, Zamparo P, Schena F. Mechanical work of body center of mass in classical cross country skiing. ICSS, Austria, 2010

Pellegrini B, **Zoppiroli C**, Bortolan L, Fabre N, Zamparo P, Schena F. Physiological and biomechanical determinants for the selection of the technique in classical cross country skiing. 15th annual congress ECSS, Turkey; 2010

Publications

Stoggl, T., Welde, B., Supej, M., **Zoppiroli, C.**, Rolland, C.G., Holmberg, H.C., et al. (2018). Impact of Incline, Sex and Level of Performance on Kinematics During a Distance Race in Classical Cross-Country Skiing. *J Sports Sci Med* 17(1), 124-133.

Pellegrini, B., Boccia, G., **Zoppiroli, C.**, Rosa, R., Stella, F., Bortolan, L., et al. (2018). Muscular and metabolic responses to different Nordic walking techniques, when style matters. *PLoS One* 13(4), e0195438.

Boccia, G., **Zoppiroli, C.**, Bortolan, L., Schena, F., and Pellegrini, B. (2018). Shared and task-specific muscle synergies of Nordic walking and conventional walking. *Scand J Med Sci Sports* 28(3), 905-918.

Pellegrini, B., **C. Zoppiroli**, G. Boccia, L. Bortolan, and F. Schena (2018). Cross-country skiing movement factorization to explore relationships between skiing economy and athletes' skills. *Scand J Med Sci Sports* ;28(2):565-574.

Welde, B., Stoggl, T.L., Mathisen, G.E., Supej, M., **Zoppiroli, C.**, Winther, A.K., et al. (2017). The pacing strategy and technique of male cross-country skiers with different levels of performance during a 15-km classical race. *PLoS One* 12(11), e0187111.

Zoppiroli, C., G. Boccia, L. Bortolan, F. Schena, and B. Pellegrini (2017). Functional significance of extent and timing of muscle activation during double poling on-snow with increasing speed. *Eur J Appl Physiol*, 117(11):2149-2157

Zoppiroli, C., Pellegrini, B., Modena, R., Savoldelli, A., Bortolan, L., and Schena, F. (2017). Changes in upper and lower body muscle involvement at increasing double poling velocities: an ecological study. *Scand Med Scie Sports*, 27(11):1292-1299

Boccia, G., Dardanello D., **Zoppiroli C.**, Bortolan L., Cescon C., Schneebeili A., Vernillo G., Schena F., Rainoldi A., and Pellegrini B. (2017). Central and peripheral fatigue in knee and elbow extensor muscles after a long-distance cross-country ski race. *Scand J Med Sci Sports*, 27(9):945-955.

Pellegrini, B., Peyre-Tartaruga, L.A., **Zoppiroli, C.**, Bortolan, L., Savoldelli, A., Minetti, A.E., et al. (2017). Mechanical energy patterns in nordic walking: comparisons with conventional walking. *Gait Posture* 51, 234-238

- Zoppirolli C**, Pellegrini B, Bortolan L & Schena F. (2016). Effects of short-term fatigue on biomechanical and physiological aspects of double poling in high-level cross-country skiers. *Hum Mov Sci* 47, 88-97.
- Fabre N, Mourot L, **Zoppirolli C**, Andersson E, Willis SJ & Holmberg HC. (2015). Alterations in aerobic energy expenditure and neuromuscular function during a simulated cross-country skiathlon with the skating technique. *Human Movement Science* 40, 326-340.
- Zoppirolli C**, Pellegrini B, Bortolan L & Schena F. (2015). Energetics and biomechanics of double poling in regional and high-level cross-country skiers. *European Journal of Applied Physiology* 115, 969-979.
- Pellegrini B, Peyre-Tartaruga LA, **Zoppirolli C**, Bortolan L, Bacchi E, Figard-Fabre H & Schena F. (2015). Exploring Muscle Activation during Nordic Walking: A Comparison between Conventional and Uphill Walking. *PLoS One* 10, e0138906.
- Pellegrini B, **Zoppirolli C**, Bortolan L, Zamparo P & Schena F. (2014). Gait models and mechanical energy in three cross-country skiing techniques. *Journal of Experimental Biology* 217, 3910-3918.
- Pellegrini B, **Zoppirolli C**, Bortolan L, Holmberg H-C, Zamparo P & Schena F. (2013). Biomechanical and energetic determinants of technique selection in classical cross-country skiing. *Human Movement Science* 32, 1415-1429.
- Zoppirolli C**, Holmberg HC, Pellegrini B, Quaglia D, Bortolan L & Schena F. (2013). The effectiveness of stretch-shortening cycling in upper-limb extensor muscles during elite cross-country skiing with the double-poling technique. *Journal of Electromyography and Kinesiology* 23, 1512-1519.