

UNIVERSITÀ DEGLI STUDI DI MILANO

selezione pubblica per n. 1 posto/i di Ricercatore a tempo determinato ai sensi dell'art.24, comma 3, lettera b) della Legge 240/2010 per il settore concorsuale 06/N2, settore scientifico-disciplinare M-EDF/02 - Metodi e Didattiche delle Attività Sportive presso il Dipartimento di SCIENZE BIOMEDICHE PER LA SALUTE, (avviso bando pubblicato sulla G.U. n. 68 del 01/09/2020) Codice concorso 4463

Taian Martins (Vieira)

CURRICULUM VITAE

INFORMAZIONI PERSONALI (NON INSERIRE INDIRIZZO PRIVATO E TELEFONO FISSO O CELLULARE)

COGNOME	MARTINS (VIEIRA)
NOME	TAIAN
DATA DI NASCITA	08 NOVEMBRE 1980

Taian Martins (Vieira)

Assistant Professor

LISiN – Laboratory for Engineering of the Neuromuscular System
Politecnico di Torino
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Education

- 2008 - 2011 PhD in Biomedical Engineering
Politecnico di Torino, Torino, Italia.
PhD Project: Insights gained into the control of human quiet standing posture from electromyography.
Supervisor: Prof. Roberto Merletti
Scholarship provided by: Brazilian Research Council (CNPq).
- 2005 - 2007 Master of Science in Biomedical Engineering.
Federal University of Rio de Janeiro, UFRJ, Rio de Janeiro, Brazil.
MSc Project: Variations in the stabilometric signal with natural aging
Supervisor: Prof. Jurandir Nadal.
Scholarship provided by: Brazilian Research Council (CNPq).
- 2000 - 2004 Bachelor in Physical Education.
Federal University of Rio de Janeiro, UFRJ, Rio de Janeiro, Brazil.
Undergraduate Project: Control of standing posture in rowers athletes.
Supervisor: Prof. Liliam Fernandes de Olivera.
Scholarship provided by: Brazilian Research Council (CNPq).

Appointments

Politecnico di Torino - Laboratorio di Ingegneria del Sistema Neuromuscolare (LISiN)

2018 – Current: Assistant Professor
2016 – 2017 Post-doc Fellow
2007: Research Assistant

Universidade Federal do Rio de Janeiro

2011 – 2016 Adjunct Professor
2005 – 2007 Collaborate Professor
May, 2006 Teaching Assistant
2002 – 2004 Research Assistant: Biomechanics Laboratory

Sociedade de Ensino Superior Estácio de Sá

2006 – 2007 Assistant Professor

Commission of Trust

School of Graduate and Postdoctoral Studies, University of Western Ontario

2020 – Current: Advisory Member (Kinesiology Program)

International Society of Electrophysiology and Kinesiology

2020 – Current: Member of the Society Council

Società Italiana di Analisi del Movimento in Clinica (SIAMOC)

2015 – 2019: Member of the Society Council
2017 – 2019: Treasurer

Teaching Experiences

2011 – 2016: Adjunct Professor

Human Physiology (120 h per year)
Kinesiology (120 h per year)
Graduate Course on Physical Education
Universidade Federal do Rio de Janeiro, Brazil

Signal Processing applied to electromyography (30 h per year)
Post-Graduate Courses on Biodynamics of Human Movement
Universidade Federal do Rio de Janeiro, Brazil

2008 – 2010: Teaching Assistant

Engineering of the Neuromuscular System (12 h)
Biomedical Instrumentation (8h)
Bioengineering of Physical Exercise and Sports (12 horas)
Graduate Course on Biomedical Engineering
Politecnico di Torino, Italy

2006 - 2007: Assistant Professor

Biomechanics (120 h)

Graduate Course on Physiotherapy

Sociedade de Ensino Superior Estácio de Sá, Brazil

2006: Teaching Assistant

Biostatistics (60 h)

Graduate Course on Physical Education

Universidade Federal do Rio de Janeiro, Brazil

2005 – 2007: Invited Lecturer

Postural Balance (20 h per year)

Post-Graduate Course (latu-senso) on Biomechanics

Universidade Federal do Rio de Janeiro, Brazil

Invited Lecturer and Conference Speaker

2019, August 13th Inaugural ceremony of the Graduate Program of the Federal University of Juiz de Fora.

Lecture: *From bipolar to grids of surface electrodes: What have we learned by sampling EMGs from multiple skin locations?*

2019, April 12th Sport Acquatici Senza Barriere

Lecture: *FES Rowing: Canottaggio con stimolazione muscolare post trauma mielico.*

2018, June 13th Biannual Meeting (11th edition) of the International Motoneuron Society

Lecture: *Biofeedback modulation of postural muscle activity*

2018, June 8th Giornata dei Laboratori SIAMOC; Applicazioni delle metodiche di analisi della postura in clinica.

Lecture: *Biofeedback EMG applicato al controllo della postura eretta*

2018, March 17th Italian Formative Course, Aggiornamento Tecnico Para-Rowing

Lecture: *FES Rowing: Un Nuovo approccio per il condizionamento cardiovascolare di persone con lesione midollare*

2017, October 4th XVIII Conference of the Italian Society of Clinical Movement Analysis

Pre-Conference Course: "New evidences on the interpretation of surface EMG: from bipolar to multichannel and back"

Lecture: *Insights gained into the interpretation of surface EMGs from 2D electrodes' grid.*

2016, July 8th – XXI Congress of the International Society of Electrophysiology and Kinesiology

Special Session on Multichannel EMG: decomposition and other applications

Lecture: *High-density surface electromyograms: do they sample representative muscle active?*

2014, July 15th – XX Congress of the International Society of Electrophysiology and Kinesiology

Workshop on Advanced Surface EMG Techniques

Lecture: *Ultrasound assessment of muscle as a tool to understand sEMG signals*

2014, July 16th – XX Congress of the International Society of Electrophysiology and Kinesiology

Special Session: Is it time to update existing recommendations for the use of surface electromyography?

Lecture: *Representation of muscle activity in the surface EMGs*

2014, March 29th – Università degli Studi di Pisa, Italy.

Master of Science on Advanced technologies in rehabilitation

Lecture: *Workshop on advanced techniques for the detection of surface EMGs*

2013, August 6th – XXIV Congress of the International Society of Biomechanics
Workshop: Surface electromyography
Lecture: *Where to position surface electrodes? Does muscle architecture matter?*

2012, December 13th – LISiN – Politecnico di Torino
Course on Clinical applications of surface EMG imaging
Lecture: *Basic concepts on the use of grids of electrodes for the detection of EMG imaging from fusiform and pennate muscles*

2011, November 5th – Universidade Federal do Rio de Grande do Sul, Brazil.
Hands-on Course: Multi-channel EMG
Lecture: *Interpreting surface EMGs collected from the pinnate gastrocnemius muscles: applications in posture control, motor unit physiology, muscle fatigue and automatic identification of localized muscle activity.*

2010, February 1st – LISiN – Politecnico di Torino
Workshop on The investigation of the neuromuscular system through intramuscular and surface electromyography
Lecture: *Surface and intramuscular EMG: how large is the territory of motor units in the human medial gastrocnemius muscle?*

Promotion of scientific activities

Editor of Special Issue

2014 –Frontiers in Physiology (Impact Factor: 3.4 on 04/09/2020)
Issue title: Muscles within muscles: Do spatio-neural mechanisms underpin force production?
Eight manuscripts published within this issue

2020 – Journal of Electromyography and Kinesiology (Impact Factor: 1.7 on 04/09/2020)
Issue title: Gaining insights into neuromuscular adaptation from electromyography
(will soon be open for submissions)

Organiser and Speaker

2020, July 11th Biannual Meeting of the International Society of Electrophysiology and Kinesiology
Symposium: Novel evidence for the assessment of neuromuscular adaptations from surface electromyography

2018, October 16th International Conference on Neurorehabilitation
Workshop: State of the art and recent advances in HD-sEMG: prospects in neurorehabilitation
Lecture: *Interpretation of Surface Electromyograms: The Spatial Localisation of Muscle Activity*

2017, October 4-7th XVIII Conference of the Italian Society of Clinical Movement Analysis
Conference organisation and organisation of the Pre-Conference Course: "New evidences on the interpretation of surface EMG: from bipolar to multichannel and back"
Lecture: *Insights gained into the interpretation of surface EMGs from 2D electrodes' grid.*

2014, July 16th – XX Congress of the International Society of Electrophysiology and Kinesiology
Special Session Organisation: Is it time to update existing recommendations for the use of surface electromyography?
Lecture: *Representation of muscle activity in the surface EMGs*

2013, August 6-8th – XXIV Congress of the International Society of Biomechanics
Workshop: Surface electromyography
Lecture: *Where to position surface electrodes? Does muscle architecture matter?*

Mentoring Experience

Ongoing

Joshua William Cohen, Ph.D. student at the University of Western Ontario, Canada
(1 manuscript published)

Andrea Barbero, M.Sc. student at Politecnico di Torino

Concluded (past three years)

Hélio Cabral, Ph.D. student at Universidade Federal do Rio de Janeiro
(2 manuscripts published)

Fabio Vieira dos Anjos, Ph.D. student at Politecnico Torino
(2 manuscripts published)

Talita Peixoto Pinto, Ph.D. student at Politecnico Torino
(1 manuscript submitted)

Leonardo Mendes, M.Sc. student at Universidade Federal do Rio de Janeiro
(1 manuscript published)

Honours and Awards

- 2020 Presentation Award from the International Society of Electromyography and Kinesiology (ISEK Conference).
- 2017 Award Siamoc-Elsevier for the best clinical presentation during the annual meeting of the Italian Society of Clinical Movement Analysis
- 2016 – Highly Cited Research in the Journal of Electromyography and Kinesiology
- 2016 – Award Siamoc-Elsevier for the 2nd best methodological presentation in the annual meeting of the Italian Society of Clinical Movement Analysis
- 2015 – Excellence in Reviewing (awarded by the Human Movement and Science journal)
- 2013 – Excellence in Reviewing (awarded by the Journal of Electromyography and Kinesiology)
- 2011 – Emerging Scientist Award (inaugural winner), International Society of Biomechanics (ISB 2011).
- 2009 – Award Siamoc-Elsevier for the 2nd best methodological presentation in the annual meeting of the Italian Society of Clinical Movement Analysis
- 2008 – Basmajian Student award (third prize) in the XVII Conference of the International Society of Electromyography and Kinesiology
- 2007 – Doctoral Scholarship (Politecnico di Torino) provided by the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq)
- 2005 – Scholarship: *TopStudent*, FAPERJ – Rio de Janeiro Research Council.

Professional Affiliations

- 2011 – current: American Physiological Society
- 2014 – current: International Society of Electrophysiology and Kinesiology (ISEK)
- 2014 – current: Italian Society for Movement Analysis in Clinics (SIAMOC)
- 2008 – 2010: Society for Neuroscience

Professional Activities

Member of editorial board

- Frontiers in Physiology: Associate Editor
- Frontiers in Psychology: Review Editor
- Journal of Electromyography and Kinesiology
- Biomedical Engineering Online: Guest Editor

Reviewer for the following research journals

Journal of Physiology, Journal of Applied Physiology, Journal of Neurophysiology, Muscle and Nerve, Gait & Posture, Journal of Electromyography and Kinesiology, Journal of Neuroscience Methods, IEEE Transactions on Biomedical Engineering, PLOSone, Human Movement Science, European Journal of Applied Physiology, Biomedical Signal Processing, Physiological Measurements, Neuroscience, Sensors

Research Projects

Project name	Granting agency	Role	Duration
How does the MATE exoskeleton change the assessment of biomechanical overload risk for the EAWS system?	Fondazione ERGO	Co-PI (30 keuro)	2019-2020
Characterization, feasibility and reliability of cocontraction measurements in paretic subjects	IPSEN Pharmaceuticals	PI (91 keuro)	2020-2021
SI28 - Testing for the effect of a material with sensorial properties on the muscular efficiency during rowing	Medicantù srl	PI (10 keuro)	2019
Are EMG-based serious games effective in improving gait in children with cerebral palsy?	La Fondation Motrice	Co-PI (48 keuro)	2017-2018
Kinetics and kinematics of indoor rowing: Identifying key parameters for closed-loop, electrically assisted rowing in paraplegia	International Paralympic Committee	PI	2016-2017
Validazione quantitativa di attrezzature adattate per canoa e canottaggio	Fondazione CRT (5 x mille)	Co-PI (22 keuro)	2014-2015
Design, Development and Validation of a Portable Cocontractometer Prototype	IPSEN Pharmaceuticals	PI (40 keuro)	2014-2016
In Vivo Neuromodulation and Plasticity	Rio de Janeiro Research Council	Co-PI (150 keuro)	2013-2015
Fall risk estimation and prevention in the elderly using a quantitative multifactorial approach	Ministero dell'Istruzione, dell'Università e della Ricerca (Call PRIN 2011)	Participant (110 keuro)	2013-2015
Unidades motoras de tipos fisiológicos diferentes são organizadas espacialmente no músculo gastrocnêmio medial?	Rio de Janeiro Research Council	PI (9 keuro)	2012-2014
An Innovative High Density Surface Electromyography (HDS-EMG): Technique to Evaluate Motor Recovery After Stroke.	CSN (Canadian Stroke Network)	Co-PI (20 kUSD)	2012-2013
USEMI (UltraSonic and Electromyographyc Muscle Imaging)	UK Research Council: Call Bridging the Gaps: Nano-Info-Bio	Co-PI (10 kGBP)	2011-2012

Other Activities

1997 – 2002	Professional rowing athlete within the Brazilian Rowing Club Vasco da Gama (winner of regional and national competitions).
2002 – 2007	Rowing coach for junior athletes within the Brazilian Rowing Club Vasco da Gama

Publication Metrics

Citations: 1003

H-index: 18

Metrics provided by Scopus on: 16/09/2020

(<https://www.scopus.com/authid/detail.uri?authorId=56580584300>)

Publications

International Journals

2020

Vieira TM, Botter A. The accurate assessment of muscle excitation requires the detection of multiple EMGs. Exc Sport Sci Rev. Conditionally Accepted (minor revision) – Invited Review.

Botter A, Vieira TM, Geri T, Roatta S. The peripheral origin of tap-induced muscle contraction revealed by multi-electrode surface electromyography in human vastus medialis. Sci Rep. 2020;10(1):2256.

Vieira TM, Cerone GL, Stocchi C, Lalli M, Andrews B, Gazzoni M. Timing and Modulation of Activity in the Lower Limb Muscles During Indoor Rowing: What Are the Key Muscles to Target in FES-Rowing Protocols? Sensors (Basel). 2020;20(6):1666. Published 2020 Mar 17

Rampichini S, Vieira TM, Castiglioni P, Merati G. Complexity analysis of surface electromyography for assessing the myoelectric manifestation of muscle fatigue: A review. Entropy 2020; 22(5),529

Borzelli D, Gazzoni M, Botter A, Gastaldi L, d'Avella A, Vieira TM. Contraction level, but not force direction or wrist position, affects the spatial distribution of motor unit recruitment in the biceps brachii muscle. Eur J Appl Physiol. 2020; 120(4):853-860.

Cohen JW, Gallina A, Ivanova TD, Vieira T, McAndrew DJ, Garland SJ. Regional modulation of the ankle plantarflexor muscles associated with standing external perturbations across different directions. Exp Brain Res. 2020 Jan;238(1):39-50.

2019

Rodriguez-Falces J, Vieira T, Place N, Botter A. Potentiation of the first and second phases of the M wave after maximal voluntary contractions in the biceps brachii muscle. Med Biol Eng Comput. 2019 57; 2231-2244.

Vieira TM, Lemos T, Oliveira LAS, Horsczaruk CHR, Freitas GR, Tovar-Moll F, Rodrigues EC. Postural Muscle Unit Plasticity in Stroke Survivors: Altered Distribution of Gastrocnemius' Action Potentials. Front Neurol. 2019 Jun 26;10:686.

Pollock CL, Hunt MA, Vieira TM, Gallina A, Ivanova TD, Garland SJ. Challenging Standing Balance Reduces the Asymmetry of Motor Control of Postural Sway Poststroke. Motor Control. 2019 Jul 1;23(3):327-343.

Mancebo FD, Cabral HV, de Souza LML, de Oliveira LF, Vieira TM. Innervation zone locations distribute medially within the pectoralis major muscle during bench press exercise. J Electromyogr Kinesiol. 2019 Jun;46:8-13.

Botter A, Beltrandi M, Cerone GL, Gazzoni M, Vieira TMM. Development and testing of acoustically-matched hydrogel-based electrodes for simultaneous EMG-ultrasound detection. Med Eng Phys. 2019 Feb;64:74-79.

Vieira T. Interpretation of Surface Electromyograms: The Spatial Localisation of Muscle Activity. Biosystems and Biorobotics 21:1148-1151.

2018

Vieira T, Cerone GL, Gastaldi L, Pastorelli S, Oliveira LF, Gazzoni M, Botter A. Design and Test of a

Biomechanical Model for the Estimation of Knee Joint Angle During Indoor Rowing: Implications for FES-Rowing Protocols in Paraplegia. *IEEE Trans Neural Syst Rehabil Eng*. 2018 Oct 17; 26(11),8494793:2145-2152.

Dos Anjos FV, Gazzoni M, Vieira TM. Does the activity of ankle plantar flexors differ between limbs while healthy, young subjects stand at ease? *J Biomech*. 2018 Sep 21; 81:140-144.

Souza VH, Vieira TM, Peres ASC, Garcia MAC, Vargas CD, Baffa O. Effect of TMS coil orientation on the spatial distribution of motor evoked potentials in an intrinsic hand muscle. *Biomed Tech (Berl)*. 2018 Aug 10; 63(6):635-645.

Davis LA, Alenazy MS, Almuklass AM, Feeney DF, Vieira T, Botter A, Enoka R. Force control during submaximal isometric contractions is associated with walking performance in persons with multiple sclerosis. *J Neurophysiol*. 2020;123(6):2191-2200.

Hamilton LD, Mani D, Almuklass AM, Davis LA, Vieira T, Botter A, Enoka R. Electrical nerve stimulation modulates motor unit activity in contralateral biceps brachii during steady isometric contractions. *J Neurophysiol*. 2018;120(5):2603-2613.

Mani D, Almuklass AM, Hamilton LD, Vieira TM, Botter A, Enoka RM. Motor unit activity, force steadiness, and perceived fatigability are correlated with mobility in older adults. *J Neurophysiol*. 2018 Oct 1;120(4):1988-1997.

Pinto TP, Gazzoni M, Botter A, Vieira TM. Does the amplitude of biceps brachii M waves increase similarly in both limbs during staircase, electrically elicited contractions? *Physiol Meas*. 2018 Aug 20;39(8):085005.

Vigotsky AD, Halperin I, Lehman GJ, Trajano GS, Vieira TM. Interpreting Signal Amplitudes in Surface Electromyography Studies In Sport and Rehabilitation Sciences. *Front Physiol*. 2018 Jan 4;8:985. doi: 10.3389/fphys.2017.00985.

Vinti M, Gracies JM, Gazzoni M, Vieira T. Localised sampling of myoelectric activity may provide biased estimates of cocontraction for gastrocnemius though not for soleus and tibialis anterior muscles. *J Electromyogr Kinesiol*. 2018 Feb;38:34-43.

de Souza LML, Cabral HV, de Oliveira LF, Vieira TM. Motor units in vastus lateralis and in different vastus medialis regions show different firing properties during low-level, isometric knee extension contraction. *Hum Mov Sci*. 2017 Dec 28; S0167-9457(17)30612-7.

Cabral HV, de Souza LML, Mello RGT, Gallina A, de Oliveira LF, Vieira TM. Is the firing rate of motor units in different vastus medialis regions modulated similarly during isometric contractions? *Muscle Nerve*. 2018 Feb;57(2):279-286.

Almuklass AM, Davis L, Hamilton LD, Vieira TM, Botter A, Enoka RM. Motor unit discharge characteristics and walking performance of individuals with multiple sclerosis. *J Neurophysiol*. 2018 Apr 1;119(4):1273-1282.

2017

Vieira TM, Botter A, Muceli S, Farina D. Specificity of surface EMG recordings for gastrocnemius during upright standing. *Sci Rep*. 2017 Oct 16;7(1):13300. doi: 10.1038/s41598-017-13369-1.

Vieira T, Botter A, Gastaldi L, Sacco ICN, Martelli F, Giacomozzi C. Textured insoles affect the plantar pressure distribution while elite rowers perform on an indoor rowing machine. *PLoS One*. 2017 Nov 2;12(11):e0187202.

Vieira TM, Bisi MC, Stagni R, Botter A. Changes in tibialis anterior architecture affect the amplitude of surface electromyograms. *J Neuroeng Rehabil*. 2017 Aug 14;14(1):81.

Dos Anjos FV, Pinto TP, Gazzoni M, Vieira TM. The Spatial Distribution of Ankle Muscles Activity Discriminates Aged from Young Subjects during Standing. *Front Hum Neurosci*. 2017 Apr 19;11:190.

Botter A, Vieira TM. Optimization of surface electrodes location for H-reflex recordings in soleus muscle. *J Electromyogr Kinesiol*. 2017 Jun;34:14-23.

Gazzoni M, Botter A, Vieira TM. Surface EMG and muscle fatigue: multi-channel approaches to the study of

myoelectric manifestations of muscle fatigue. *Physiol Meas* 2017 May;38(5):R27-R60.

Dieterich A, Botter A, Vieira TM, Peolsson A, Petzke F, Davey P, Falla D. Spatial variation and inconsistency between estimates of onset of muscle activation from EMG and ultrasound. *Sci Rep* 2017 Feb 8;7:42011.

Pollock CL, Carpenter MG, Hunt MA, Gallina A, Vieira TM, Ivanova TD, Garland SJ. Physiological arousal accompanying postural responses to external perturbations after stroke. *Clin Neurophysiol.* 2017 Jun;128(6):935-944.

de Souza LM, da Fonseca DB, Cabral HV, Oliveira LF, Vieira TM. Is myoelectric activity distributed equally within the rectus femoris muscle during loaded, squat exercises? *J Electromyogr Kinesiol.* 2017 Jan 9;33:10-19.

2016

Vieira TM, Wakeling JM, Hodson-Tole EF. Is there sufficient evidence to claim muscle units are not localised and functionally grouped within the human gastrocnemius? *J Physiol.* 2016 Apr 1;594(7):1953-4.

Vieira TM, Baudry S, Botter A. Young, Healthy Subjects Can Reduce the Activity of Calf Muscles When Provided with EMG Biofeedback in Upright Stance. *Front Physiol.* 2016 Apr 29;7:158.

Vieira TM, Potenza P, Gastaldi L, Botter A. Electrode position markedly affects knee torque in tetanic, stimulated contractions. *Eur J Appl Physiol.* 2016 Feb;116(2):335-42.

Gallina A, Pollock CL, Vieira TM, Ivanova TD, Garland SJ. Between-day reliability of triceps surae responses to standing perturbations in people post-stroke and healthy controls: A high-density surface EMG investigation. *Gait Posture.* 2016 Feb;44:103-9.

2015

Botter A, Vieira TM. Adapting the virtual reference method to remove power line interference with minimal distortion of monopolar surface EMG. *IEEE Trans Biomed Eng.* 2015 Nov;62:2638-47.

Vieira TM, Botter A, Minetto MA, Hodson-Tole EF. Spatial Variation of Compound Muscle Action Potentials across Human Gastrocnemius medialis. *J Neurophysiol.* 2015 Sep;114(3):1617-27.

Avancini C, de Oliveira LF, Menegaldo LL, Vieira TM. Variations in the spatial distribution of the amplitude of surface electromyograms are unlikely explained by changes in the length of medial gastrocnemius fibres with knee joint angle. *PLoS One.* 2015 May 22;10(5):e0126888.

Gallina A, Vieira TM. Territory and fiber orientation of vastus medialis motor units: a surface electromyography investigation. *Muscle Nerve.* 2015 Dec;52(6):1057-65.

Bisi MC, Botter A, Stagni R, Vieira TM. New frontiers for muscle function investigation: integration of surface EMG and 3D ecographic images. *J Mech Med Biol.* 2015; 15(2): 1540029.

Readi NG, Rosso V, Rainoldi A, Vieira TM. Do sweep rowers symmetrically activate their low back muscles during indoor rowing? *Scand J Med Sci Sports.* 2015 Aug;25(4):e339-52.

Lemos T, Imbiriba LA, Vargas CD, Vieira TM. Modulation of tibialis anterior muscle activity changes with upright stance width. *J Electromyogr Kinesiol.* 2015 Feb;25(1):168-74.

2014

Reffad A, Mebarkia K, Vieira TM, Disselhorst-Klug C. Effect of contraction force and knee joint angle on the spatial representation of soleus activity using high-density surface EMG. *Biomed Tech (Berl).* 2014 Oct;59(5):399-411.

2013

Botter A, Vieira TM, Loram ID, Merletti R, Hodson-Tole EF. A novel system of electrodes transparent to ultrasound for simultaneous detection of myoelectric activity and B-mode ultrasound images of skeletal muscles. *J Appl Physiol* 2013 Oct;115(8):1203-14.

Vieira TM, Minetto MA, Hodson-Tole EF, Botter A. How much does the human medial gastrocnemius muscle contribute to ankle torques outside the sagittal plane? *Hum Mov Sci* 2013 Aug;32(4):753-67.

Gallina A, Ritzel C, Merletti R, Vieira, TM. Do surface electromyograms provide physiological estimates of conduction velocity from the medial gastrocnemius muscle? *J Electromyogr Kinesiol* 2013, Apr;23(2):319-25.

Hodson-Tole, Loram ID, Vieira TM. Myoelectric Activity along human Gastrocnemius medialis: Different spatial distributions of postural and electrically elicited surface potentials. *J Electromyogr Kinesiol* 2013 Feb;23(1):43-50

2012

Vieira TM, Loram ID, Muceli S, Merletti R, Farina D. Recruitment of motor units in the medial gastrocnemius muscle during human quiet standing: Is recruitment intermittent? What triggers recruitment? *J Neurophysiol* 2012, 107:666-676.

2011

Gallina A, Merletti R, Vieira, TM. Are the myoelectric manifestations of fatigue distributed regionally in the human medial gastrocnemius muscle? *J Electromyogr Kinesiol* 2011, 21(6):929-38.

Mesin L, Merletti R, Vieira TM. Insights gained into the interpretation of surface electromyograms from the gastrocnemius muscles: a simulation study. *J Biomech* 2011, 44:1096-103.

Vieira TM, Loram ID, Muceli S, Merletti R, Farina D. Postural activation of the human medial gastrocnemius muscle: are the muscle units spatially localised? *J Physiol* 2011, 589(2):431-443.

Garcia MAC, Vieira TM. Surface electromyography: Why, when and how to use it. *Revista Andaluza de Medicina del Deporte* 2011, 4:17-28.

2010

Merletti R, Avenaggiato M, Botter A, Holobar A, Marateb H, Vieira TM. Advances in surface EMG: Recent progress in detection and processing techniques. *Crit Rev Biomed Eng* 2010, 38(4):305-345.

Merletti R, Botter A, Cescon C, Minetto MA, Vieira TM. Advances in surface EMG: Recent progress in clinical research applications. *Crit Rev Biomed Eng* 2010, 38(4):347-379.

Vieira TM, Merletti R, Mesin L. Automatic segmentation of surface EMG images: Improving the estimation of neuromuscular activity. *J Biomech* 2010, 43(11):2149-58.

Vieira TM, Windhorst U, Merletti R. Is the stabilization of quiet upright stance in humans driven by synchronized modulations of the activity of medial and lateral gastrocnemius muscles? *J Appl Physiol* 2010, 108:85-97.

2009

Vieira TM, Oliveira LF, Nadal J. An overview of age-related changes in postural control during quiet standing tasks using classical and modern stabilometric descriptors. *J Electromyogr Kinesiol* 2009, 9:513-519.

Olivera LF, Matta TT, Alves DS, Garcia MA, Vieira TM. Effect of the shoulder position on the biceps brachii EMG in different dumbbell curls. *J Sports Sci Med* 2009, 8:24-29.

Oliveira LF, Vieira TM, Macedo AR, Simpson DM, Nadal J. Postural sway changes during pregnancy: A descriptive study using stabilometry. *Eur J Obstet Gynecol Reprod Biol* 2009, 147:25-28.

Stradijot F, Vieira TM. Assessment of lower limbs symmetry in patients following ACL reconstruction: A work experience. *Gait Posture* 2009, 30:S20-S21.

Vieira TM, Oliveira LF, Nadal J. Estimation procedures affect the center of pressure frequency analysis. *Braz J Med Biol Res* 2009, 42:665-673.

2008

Stradijot F, Vieira TM. The Importance of an Objective Assessment to Identify Functional Constraints of Young Skier Athletes. *Journal of ASTM International* 2008, 5:1-5.

Peixinho CC, Alves DS, Lacerda RG, Vieira TM, Olivera LF. Strain and slackness of Achilles tendon during passive joint mobilization via imaging ultrasonography. *Braz J Phys Ther* 2008, 12:386-372.

Book Chapter

Vieira TM. Interpretation of Surface Electromyograms: The Spatial Localisation of Muscle Activity. In: *Biosystems and Biorobotics*. Springer Nature, 2019. ISSN: 21953562; doi: 10.1007/978-3-030-01845-0_229

Merletti R, Vieira TM, Farina D. Techniques for information extraction from the surface EMG signal: high density surface EMG. In: *Surface Electromyography: physiology, engineering and applications*. Wiley, 2nd edition, 2016.

Vieira TM, Farina D, Loram ID. EMG and posture in its narrowest sense. In: *Surface Electromyography: physiology, engineering and applications*. Wiley, 2nd edition, 2016.

Oivera LF, Vieira TMM. (2006). Aspectos biomecânicos do envelhecimento relacionados com o risco de queda: equilíbrio e marcha. In: Drumond Edimundo. *Envelhecimento e Atividade Física: diversosolhares sobre a prevenção de quedas*. vol. 1, p. 35-51, NITEROI: Universidade Federal Fluminense

Main presentations in International Conferences (4 page papers)

Vieira TM.
Interpretation of Surface Electromyograms: The Spatial Localisation of Muscle Activity (2019) Proceedings of the 26th International Conference on Robotics, Mechanisms and Machine Science, 2018-June, 49:911-918.

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Surface EMG for human-machine interfaces: New knowledge and open issues (2018) Proceedings of the 26th International Conference on Robotics, Mechanisms and Machine Science, 2018-June, 49:911-918.

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Data

16/09/2020

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