

Marc Roig

Academic qualification and professional profile

Doctor of Philosophy (Rehabilitation Science) for the University of British Columbia (2010). Master's in Science (Sports and Exercise Medicine) for the Nottingham University (2006). Bachelor's in Science (Physical Therapy) for the School of Physical Therapy – Universitat Ramon Llull (2004). Bachelor's in Science (Physical Education and Sports Sciences) for the University Of Barcelona (UB) (2001).

Associate Professor at School of Physical and Occupational Therapy - McGill University (2019 – actuality). Assistant Professor at School of Physical and Occupational Therapy - McGill University (2013 – 2019). Postdoctoral Fellow at the Department of Neuroscience and Pharmacology – University of Copenhagen (2010 – 2013). Research Assistant at the Muscle Biophysics Laboratory – University of British Columbia (2009 – 2010). Teaching Assistant at School Rehabilitation Science – University of British Columbia (2007 – 2010). Physical Therapist at LA Sports Club (2005 – 2006). Physical Therapist at Crack Sports Club (2002 – 2004).

Teaching

Courses taught at the School of Physical and Occupational Therapy – McGill University:

- Coordinator and instructor of Clinical Exercise Physiology (2014 – 2015 / 2018).
- Guest Lecture of Physical Therapy Seminars (2014 – 2015 / 2018).
- Instructor of Perception and Action (2015 – 2018).
- Guest Lecture of Selected Topics in Rehabilitation (2017).
- Instructor of Integrated Clinical Exercise Rehabilitation (2015 – 2017).
- Guest Lecture of Selected Topics in Rehabilitation (2014).

Guest Lecture of Théories Sensorimotrices en Réadaptation at École de Réadaptation – University of Montreal (2015 – 2019). Guest Lecture of Critique d'Approches en Réadaptation at École de Réadaptation – University of Montreal (2015).

Coordinator of Prescription of Therapeutic Physical Exercise at College of Physiotherapy of Catalonia (2018 – 2022). Guest Lecture of Motor Learning and Neuroplasticity in Sports at FCB Universitas (2017). Guest Lecture of Exercise Prescription in Stroke at Facultat de Ciències de la Salut Blanquerna – Universitat Ramon Llull (URL) (2017 – 2019). Guest Lecture of The Effects of Cardiovascular Exercise on Memory at EUSES University (2016). Guest Lecture of Cognitive Response to Physical Activity at Facultat de Ciències de la Salut Blanquerna – URL (2016).

Investigation

ORCID code:

Research Lines:

- Therapeutic physical activity in the neurological patient.
- Physical activity and ICTUS.
- Physical activity and cognitive response.

Most relevant publications:

1. Calverley TA, Ogoh S, Berg RMG, Marley CJ, Steggall M, Marchi N, Brassard P, Lucas SJE, Cotter JD, Roig M, Cobley JN, Ainslie PN, Wisløff U, Bailey DM. HIITing the brain with exercise; mechanisms, consequences and practical recommendations. *Journal of Physiology*. 2020.
2. Beck MM, Grandjean MU, Hartmand S, Spedden E, Christiansen L, Roig M, Lundbye-Jensen J. Acute exercise protects newly formed motor memories against r-TMS induced interference targeting the primary motor cortex. *Cortex*. 2019.
3. Ghosh A, Dal Maso F, Roig M, Mitsis GD, Boudrias MH. Unfolding the effects of acute cardiovascular exercise on neural correlates of motor learning using convolutional neural networks. *Frontiers of Human Neuroscience*. 2019.
4. De Las Heras B, Li O, Nepveu JF, Rodrigues L, Roig M. Exercise improves videogame performance: a win-win situation. *Medicine and Science in Sports and Exercise*. 2019.
5. Christiansen L, Thomas R, Beck MM, Pingel J, Andersen JD, Mang CS, Ritz C, Madsen MJ, Roig M, Lundbye-Jensen J. Genetic variations in the human brain dopamine system influence the beneficial effect of acute aerobic exercise on motor memory consolidation. *Journal of Clinical Medicine*. 8:578. 2019.
6. De Las Heras B, Li O, Nepveu JF, Roig M. A single bout of exercise improves accuracy in videogaming: a pilot study. *Medicine and Science in Sports and Exercise*. 2019. 51:5. Suppl.
7. Hill K, Cavalheri V, Mathur S, Roig M, Janaudis-Ferreira T, Robles P, Dolmage TE, Goldstein R. Electrostimulation for adults with chronic obstructive pulmonary disease (COPD). *Cochrane Systematic Reviews*. 29:5. 2018.
8. Centeno C, Medeiros D, Beck MM, Lugassy L, Hernandez D, Nepveu JF, Roig M. The effects of aging on cortico-spinal excitability and motor memory consolidation. *Neurobiology of Aging*. 70:254-264. 2018.
9. Roig M, De Las Heras B. Acute cardiovascular exercise does not enhance locomotor learning in people with stroke. *Journal of Physiology*. 596:1785-1786. 2019.
10. Dal Maso F, Desormeau B, Boudrias MH, Roig M. Acute cardiovascular exercise promotes functional changes in corticomotor networks during the early stages of motor memory consolidation. *Neuroimage*. 16:174:380-392. 2018.
11. Jo JS, Chen J, Riechman S, Roig M, Wright DL. The protective effects of acute cardiovascular exercise on the interference of procedural memory. *Psychological Research*. 2018. In press.
12. Crozier J, Roig M, Eng J, MacKay-Lyons M, Ploughman M, Fung J, Giacomantonio N, Bailey D, Sweet S, Thiel A, Tang A. High-intensity interval training in stroke: an opportunity to promote functional recovery, cardiovascular health and neuroplasticity in stroke rehabilitation. *Neurorehabilitation and Neural Repair*. 32:543-556. 2018.
13. Nepveu, JF, Thiel A, Fung J, Tang A, Lundbye-Jensen J, Boyd L, Roig M. A single bout of high23 intensity interval training accelerates motor skill learning in patients with chronic stroke. *Neurorehabilitation and Neural Repair*. 31:726-35. 2017.
14. Lundbye-Jensen J, Skriver K, Nielsen JB, Roig M. Acute exercise improves motor memory consolidation in pre-adolescent children. *Frontiers in Human Neuroscience*. 20:11-182. 2017.
15. Thomas R, Flindtgaard M, Skriver K, Geertsen SS, Christiansen L, Christiansen L, Johnsen LK, Ritz C, Roig M, Lundbye-Jensen J. Acute exercise and motor memory consolidation: does exercise type play a role? *Scandinavian Journal of Sports Medicine*. 27:1523-32. 2017.
16. Thomas R, Rasmussen R, Beck M, Geertsen SS, Christiansen L, Ritz C, Roig M, Lundbye-Jensen J. Acute exercise and motor memory consolidation: the role of exercise timing. *Neural Plasticity*. <http://dx.doi.org/10.1155/2016/6205452>. 2016.

17. Thomas R, Johnsen LK, Geertsens SS, Christiansen L, Roig M, Lundbye-Jensen J. Acute exercise and motor memory consolidation: The role of exercise intensity. *PLoS ONE*. Jul; 25:11(7):e0159589. 2016.
18. Roig M, Thomas R, Mang CS, Ostadan F, Snow NJ, Boyd LA, Lundbye-Jensen J. Time-dependent effects of exercise on memory. *Exercise and Sport Science Reviews*. 44:81-8. 2016.
19. Snow NJ, Mang CS, Roig M, McDonnell M, Campbell K, Boyd LA. Effects of an acute bout of moderate-intensity aerobic exercise on motor learning in a continuous tracking task. *PLoS One*. Feb 22:11(2):e0150039. 2016.
20. Ostadan F, Centeno C, Daloze JF, Frenn M, Lundbye-Jensen J, Roig M. Changes in corticospinal excitability during consolidation predict exercise-induced off-line gains in procedural memory. *Neurobiology of Learning and Memory*. 136:196-203. 2016.
21. Delmuns S, Roig M, Casimiro J, Mans C, Giné-Garriga M. Epidemiological study of injuries arising from karting competition in children. *Journal of Community Medicine and Health Education*. 4:4.2014.
22. Roig M, Rosenbaum A, Lundbye-Jensen J, Nielsen JB. Ageing increases the susceptibility to motor memory interference and reduces off-line gains in motor skill learning. *Neurobiology of Aging*. 1892-1900. 2014.
23. Skriver K, Roig M, Lundbye-Jensen J, Pingel J, Helge JW, Kiens B, Nielsen JB. Acute exercise improves motor memory: exploring potential biomarkers. *Neurobiology of Learning and Memory*. 116:46-58. 2014*
24. Roig M, Nordbrandt S, Geertsens SS, Nielsen JB. The effects of cardiovascular exercise on human memory: a review with meta-analysis. *Neuroscience Biobehavioural Reviews*. 37:1645-1666. 2013.
25. Maffulli N, Roig M, Karatzanos E, Nanas S. Effectiveness of neuromuscular electrical stimulation for preserving muscle mass and function in critically ill patients. *BMC Medicine*. 11:137. 2013.
26. Roig M, Skriver K, Lundbye-Jensen J, Kiens B, Nielsen JB. A single bout of exercise improves motor memory. *PLoS ONE*. 7-9. 2012.
27. Roig M, Eng JJ, MacIntyre DL, Road JD, Reid WD. Postural Control is impaired in People with COPD: an observational study. *Physiotherapy Canada*. 63:423-431. 2011.
28. Roig M, Eng JJ, MacIntyre DL, Road JD, Reid WD. Deficits in muscle strength, mass, quality and mobility in people with COPD. *Journal of Cardiopulmonary Rehabilitation and Prevention*. 31:120-124. 2011.
29. Roig M, Eng JJ, MacIntyre DL, Road JD, FitzGerald JM, Burns J, Reid WD. Falls in people with chronic obstructive pulmonary disease: an observational cohort study. *Respiratory Medicine*. 105:461-469. 2011.
30. Roig M, Eng JJ, MacIntyre DL, Road JD, Reid WD. Associations of the stair climb power test with muscle strength and functional performance in people with COPD: a cross-sectional study. *Physical Therapy*. 90:1774-1782. 2010. 24
31. Shadgan B, Roig M, Ghanbari B. The authors respond. *Archives of Physical Medicine and Rehabilitation*. 91:1961-1962. 2010.
32. Shadgan B, Roig M, Ghanbari B, Reid WD. Top cited articles in rehabilitation. *Archives of Physical Medicine and Rehabilitation*. 91:806-815. 2010.
33. Roig M, MacIntyre DL, Eng JJ, Narici MV, Maganaris CM, Reid DW. Preservation of eccentric strength in older adults: evidence, mechanisms and implications for training and rehabilitation. *Experimental Gerontology*. 45:400-409. 2010.

34. Roig M, Eng JJ, Road JD, Reid DW. Falls in people with COPD: a call for further research. *Respiratory Medicine*. 103:1257-1269. 2009.
35. Roig M, Reid DW. Electrical stimulation and peripheral muscle function in COPD: a systematic review. *Respiratory Medicine*. 103:485-495. 2009.
36. Roig M, O'Brien K, Kirk G, Murray R, Mckinnon P, Shadgan B, Reid DW. The effects of eccentric versus concentric resistance training on muscle strength and mass in healthy adults: a systematic review with meta-analysis. *British Journal of Sports Medicine*. 43:556-568. 2009.
37. Roig M, Shadgan B, Reid DW. The role of eccentric training in patients with chronic conditions: a systematic review. *Physiotherapy Canada*. 2008:60:146-160.
38. Stephens FB, Roig M, Armstrong G, Greenhaff PL. Post-exercise ingestion of a unique, high molecular weight glucose polymer solution improves performance during a subsequent bout of cycling exercise. *Journal of Sports Science*. 15:149-154. 2008.
39. Roig M, Ranson C. Eccentric muscle actions: implications for injury prevention and rehabilitation. *Physical Therapy in Sport*. 8:88-97. 2007.

Other merits: