

Dr James Fisher BSc (Hons), PhD

Senior Lecturer in Exercise Physiology

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About

Dr James Fisher is an Exercise Physiologist working in the field of human cardiovascular control. The focus of his laboratory is on the neural regulation of the heart and blood vessels in human health and disease.

Qualifications

- BSc (Hons) Sport and Exercise Sciences. 1st class. (University of Birmingham)
- PhD Sport and Exercise Sciences (University of Birmingham)

Biography

Following completion of his PhD in 2004, Dr James Fisher undertook a British Heart Foundation funded post-doctoral position which provided him the opportunity to work in the laboratories of Dr Niels Secher (University of Copenhagen, Denmark) and Dr Peter Raven (University of North Texas Health Science Center, Fort Worth, Texas, USA).

In 2006, Dr Fisher relocated to the USA where he worked in the laboratory of Dr Paul Fadel (University of Missouri, Columbia, Missouri) as an American Heart Association funded post-doctoral research fellow investigating the effects of age on arterial baroreflex function. In 2008 he was appointed as a Lecturer in the School of Sport and Exercise Sciences and maintains active collaborations with groups in the USA (Dr. Fadel, University of Missouri-Columbia), Denmark (Prof. Secher, University of Copenhagen), Japan (Prof. Ogoh, Toyo University) and Brazil (Dr. Vianna & Prof. Nobrega, Fluminense Federal University).

Dr Fisher regularly published in high impact physiology journals and has been the recipient several international research awards, including the Michael J. Brody Young Investigators Award (2008) and the Neural Control and Autonomic Regulation Section New Investigators Award (2013) from the American Physiological Society.

Teaching

- BSc (Hons) Sport, Exercise and Rehabilitation Sciences. Module Organiser, Exercise Physiology, Level II.
- BSc (Hons) Sport, Exercise and Rehabilitation Sciences. Lecturer, Testing in Sports and Exercise Sciences, Level II.
- BSc (Hons) Sport, Exercise and Rehabilitation Sciences. Supervisor, Dissertation Research Project, Level III.
- BMedSci (Hons) Lecturer, Biology of Ageing, Level IV.
- BMedSci (Hons) Lecturer, CVS Integrative Mechanisms, Level IV.
- MSc. Lecturer. Sport and Exercise Sciences.

Postgraduate supervision

Dr James Fisher currently supervises four PhD students. Alena Shantsila is examining the link between respiration and sympathetic nerve activity in patients with high blood pressure. Ahmed Adlan is investigating how inflammation effects autonomic function in human health and disease. Igor Braz's work concerns the influence of age and physical activity on cerebral blood flow regulation. Clare McNulty is examining the associations between age, inflammation and physical activity.

Prospective students should consult **FindaPhD** (<http://www.findaphd.com/>) for the latest PhD project vacancies.

Research

Dr James Fisher's research broadly concerns the neural control of the cardiovascular system at rest and during exercise in human health and disease. His main areas of interest are:

- the effects of age and gender on cardiovascular and cerebrovascular regulation during exercise;
- mechanisms underlying sympathetic neural hyperactivity in chronic disease.

This work is funded by the British Heart Foundation, Arthritis Research UK, Royal Society and the BBSRC.

Other activities

Dr James Fisher is an active member of the Physiological Society (England) and the American Physiological Society, and is a Fellow of the Higher Education Academy (FHEA), UK.

Publications

Fisher JP. (2013) Autonomic control of the heart during exercise in humans: role of skeletal muscle afferents. *Exp Physiol*. In press.

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Eyre ELJ, Fisher JP, Smith EC, Wagenmakers AJM, & Matyka KA. (2013) Ethnicity and long term heart rate variability in children. *Arch Dis Child*. 98(4):292-8. doi: 10.1136/archdischild-2012-302266.

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Cocks M, Shaw CS, Shepherd SO, Fisher JP, Ranasinghe AM, Barker T, Tipton KT, & Wagenmakers AJM. (2013) High intensity interval and traditional endurance training are equally effective in improving muscle microvascular structure and eNOS content in sedentary males. *J Physiol*. 591(Pt 3):641-56. doi: 10.1113/jphysiol.2012.239566.

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Deo SH, Fisher JP, Vianna LC, Kim A, Chockalingam A, Zimmerman MC, Zucker IH & Fadel PJ. (2012) Statin therapy lowers muscle sympathetic nerve activity and oxidative stress in patients with heart failure. *Am J Physiol Heart Circ Physiol*. 303(3):H377-85.

Sato K, Fisher JP, Seifert T, Overgaard M, Secher NH, & Ogoh. (2012) Blood flow and dynamic autoregulation in internal carotid and vertebral arteries during orthostatic stress. *Exp Physiol*. 97(12):1272-80. doi: 10.1113/expphysiol.2012.064774.

Fisher JP, Kim A, Hartwich, & Fadel PJ. (2012) New insights into the effects of age and sex on arterial baroreflex function at rest and during dynamic exercise in humans. *Auton Neurosci*. 172(1-2):13-22. doi: 10.1016/j.autneu.2012.10.013.

Sugawara J, Komine K, Miyazawa T, Imai T, Fisher JP & Ogoh. (2012) Impact of chronic exercise training on the blood pressure response to orthostatic stimulation. *J Appl Physiol*. 112(11):1891-6.

Kim A, Deo S, Fisher JP & Fadel PJ. (2012) Effect of sex and ovarian hormones on carotid baroreflex resetting and function during dynamic exercise in humans. *J Appl Physiol*. 112(8):1361-71.

Fisher JP & Paton JFR. (2011). The sympathetic nervous system and blood pressure in humans: Implications for hypertension. *J Human Hypertension*. doi: 10.1038/jhh.2011.66.

Fisher JP & Secher NH. (2011) The brain at work. *J Physiol*. 15:589(Pt 18):4405.

Kim A, Young CN, Deo S, Fisher JP & Fadel PJ. (2011) Sex differences in carotid baroreflex control of arterial blood pressure in humans: Relative contribution of cardiac output and total vascular conductance. *Am J Physiol Heart Circ Physiol*. 301(6):H2454-65.

Hartwich D, Dear WE, Waterfall JL & Fisher JP. (2011) Effect of muscle metaboreflex activation on spontaneous cardiac baroreflex sensitivity during exercise in humans. *J Physiol*. 15:589(Pt 24):6157-71.

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Kiilerich K, Jørgensen SR, Biensøe RS, Fisher JP, Iversen N, Van Hall G, Wojtaszewski JFP, Saltin B, Lundby C, Calbet JAL & Pilegaard H. (2011) Exercise-induced pyruvate dehydrogenase activation is not affected by seven days of bed rest. *J Appl Physiol*. 111(3):751-7.

Fisher JP, Seifert T, Hartwich D, Young C, Secher NH & Fadel PJ. (2010) Autonomic control of heart rate by metabolically sensitive skeletal muscle afferents in humans. *J Physiol (Lond)*. 588(Pt 7):1117-27. See accompanying Editorial Perspective: Kaufman MP. (2010) Metaboreflex control of the heart. *J Physiol (Lond)*. 588(Pt 7):1037-8.

Fisher JP & Fadel PJ. (2010) Therapeutic strategies for targeting excessive central sympathetic activation in human hypertension. *Exp Physiol*. 95(5):572-80. See accompanying Editorial Perspective: Paton JF, Raizada MK. (2010) Neurogenic hypertension. *Exp Physiol*. 95(5):569-71.

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Campbell R, Fisher JP, Sharman JE, McDonnell BJ & Frenneaux MP. (2010) Contribution of nitric oxide to the blood pressure and arterial responses to exercise in humans. *J Human Hypertension*. In press.

Seifert T, Fisher JP, Young C, Hartwich D, Ogoh S, Raven PB, Fadel PJ & Secher NH. (2010) Is a cholinergic mechanism involved in regulation of cerebral perfusion during exercise in humans? *Exp Physiol*. 95(10):1016-25. See accompanying Editorial Perspective: Truijen J, van Lieshout JJ. (2010) Parasympathetic control of blood flow to the activated human brain. *Exp Physiol*. 95(10):980-1.

Fisher JP, Kim A, Young CN & Fadel PJ. (2010) Alterations in carotid baroreflex control of arterial blood pressure at rest and during dynamic exercise in aging humans. *Am J Physiol Regul Integr Comp Physiol*. 299(5):R1241-7.

Hartwich D, Fowler KL, Wynn LJ & Fisher JP. (2010) Differential responses to sympathetic stimulation in the cerebral and brachial circulations during rhythmic handgrip exercise in humans. *Exp Physiol*. 95(11):1089-97.

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Vianna LC, Araujo CG & Fisher JP. (2009) Influence of central command and muscle afferent activation on anterior cerebral artery blood velocity responses to calf exercise

in humans. J Appl Physiol. In press.

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Fisher JP, Young C & Fadel PJ. (2009) Central Sympathetic Overactivity: Maladies and mechanisms. *Auton Neurosci*. 15;148(1-2):5-15.

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Carrington CA, Fisher JP, Davies MK & White MJ. (2004) Muscle afferent inputs to cardiovascular control during isometric exercise vary with muscle group in patients with chronic heart failure. *Clin Sci (Lond)*. 107 (2): 197-204.

Fisher JP & White MJ. (2003) The time course and direction of lower limb vascular conductance changes during voluntary and electrically evoked isometric exercise of the contralateral calf muscle in man. *J Physiol (Lond)*. 546: 315-323.

