

## Dr Mike Parkes MA DPhil FHEA

Senior Lecturer in Applied Physiology

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### Qualifications

M.A., D.Phil. (Oxford) , FHEA

### Research

- Human Physiology
- Control of Breathing
- Breath Holding
- Respiratory Sinus Arrhythmia
- Thermoregulation
- Exercise Physiology
- Hypocapnia and Brain Function
- Mechanical Ventilation & Mechanical Hyperventilation

His major research interest is in the control of breathing. His research has covered the control of breathing movements in utero and the initiation of breathing at birth. In adults his research has included the fundamental properties of neurones in the respiratory network, the effects of raising body temperature on the control of breathing, the breakpoint of breath-holding and the contribution of the central respiratory rhythm to respiratory sinus arrhythmia. This research is published in international journals of physiology and applied physiology as well as in international clinical journals and as a series of chapters in books.

### Other activities

He acts as a referee for journals in physiology, sports science and psychology and a reader for publishers. He is a member of the Physiological Society and the American Physiological Society and is a Fellow of the Higher Education Academy.

### Publications

\* Contact Dr M.J.Parkes (**[M.J.Parkes@Bham.ac.uk](mailto:M.J.Parkes@Bham.ac.uk)**) and request a reprint. Remember to specify the particular publication required. (**<mailto:M.J.Parkes@Bham.ac.uk>**) and request a reprint. Remember to specify the particular publication required.

Julien, C., Parkes, M. J., et al., (2009). Comments on Point:Counterpoint: Respiratory sinus arrhythmia is due to a central mechanism vs. respiratory sinus arrhythmia is due to the baroreflex mechanism. *Journal of Applied Physiology* 106, 1745-1749.

Sheppard, J. P., Barker, T., Clutton-Brock, T. H., Frenneaux, M., & Parkes, M. J. (2009). Modified electrode placement changes wave amplitudes but not ST height on the 12 lead electrocardiograms of healthy subjects. *Journal of Physiology Proceedings* PC105.

Parkes, M. J. (2008). So what does cause the breakpoint of breath-holding? *Physiology News* 73, 25-27.

Parkes, M. J. (2008). Lack of a role for arterial chemoreceptors in the breakpoint of breath-holding. *Physiology News* 70, 34-35.

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Parkes, M. J. (2007). What happens to the central respiratory rhythm during breath-holding? *Physiology News* 68, 16-18. \*

**[Parkes, M. J. \(2006\). Breath-holding and its breakpoint. \*Experimental Physiology\* 91, 1-15 \(http://ep.physoc.org/cgi/content/abstract/91/1/1\)](http://ep.physoc.org/cgi/content/abstract/91/1/1)**

**[Rutherford, J. J., Clutton-Brock, T. H., & Parkes, M. J. \(2005\). Hypocapnia reduces the T wave of the electrocardiogram in normal human subjects. \*American Journal of Physiology\* 289, R148-R155. \\* \(http://ajpregu.physiology.org/cgi/content/abstract/289/1/R148\)](http://ajpregu.physiology.org/cgi/content/abstract/289/1/R148)** \*

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**[Cooper, H. E., Parkes, M. J., & Clutton-Brock, T. H. \(2003\). CO2-dependent components of sinus arrhythmia from the start of breath-holding in Man. \*American Journal of Physiology\* 285, H841-H848. \\* \(http://cis94.bham.ac.uk:7778/rae\\_pdf\\_files/46/o\\_0110\\_46\\_13681-15139.pdf\)](http://cis94.bham.ac.uk:7778/rae_pdf_files/46/o_0110_46_13681-15139.pdf)** \*

Cooper, H. E., Clutton-Brock, T. H., & Parkes, M. J. (2004). The contribution of the respiratory rhythm to sinus arrhythmia in normal unanesthetized subjects during mechanical hyperventilation with positive pressure. *American Journal of Physiology* 286, H402-H411. \*

Boden, A. G., Harris, M. C., & Parkes, M. J. (2000). The preoptic area in the hypothalamus is the source of the additional respiratory drive at raised body temperature in anaesthetised rats. *Experimental Physiology* 85, 527-538. \*

Boden, A. G., Harris, M. C., & Parkes, M. J. (2000). A respiratory drive in addition to the increase in CO<sub>2</sub> production at raised body temperature in rats. *Experimental Physiology* 85, 308-318. \*

Cooper, H.E., Clutton-Brock, T.H. & Parkes, M.J. (2000). Hypocapnia reduces respiratory sinus arrhythmia during mechanical hyperventilation in awake humans. *Journal of Physiology* 528P. \*

Cooper, H.E., Clutton-Brock, T.H. & Parkes, M.J. (2000). In humans is respiratory sinus arrhythmia (RSA) reduced in normocapnia during mechanical ventilation with positive pressure when breathing is detectable? *Journal of Physiology* 525, 32P. \*

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Parkes, M.J. (1992). Fetal behavioural states, sleep and wakefulness? *Quarterly Journal of Experimental Psychology* 44B, 231-244. \*

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Parkes, M.J. (1991). In ed. M.A. Hanson "The fetal and Neonatal Brainstem". Cambridge University Press, Cambridge. Sleep and Wakefulness - do they occur in utero? pp 230-256. \*

Parkes, M.J., Moore, P.J., Moore, D.J., Fisk, N.M. & Hanson, M.A. (1991). Behavioral changes in fetal sheep caused by vibroacoustic stimulation; the effects of cochlear ablation. *American Journal of Obstetrics and Gynecology* 164, 1336-1434. \*

Parkes, M.J. (1988). In ed. F. Cockburn "Fetal and Neonatal Growth". Wiley and Sons Ltd, Chichester. Endocrine factors in fetal growth. pp 33-48. \*

Parkes, M.J., Hill, D.J. (1985). *Journal of Endocrinology* 104, 193-199. Lack of growth hormone- dependent somatomedins or growth retardation in hypophysectomised fetal lambs. \*

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Hofmeyr, G., Bamford, O.S., Gianopolous, J.G., Parkes, M.J., Dawes, G.S. (1985). *American Journal of Obstetrics and Gynecology* 152, 905-910. The partial association of uterine contractions with changes in electrocortical activity, breathing, and PaO<sub>2</sub> in the fetal lamb: effects of brain stem section.\*