



# JOURNAL OF APPLIED PHYSIOLOGY

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## EDITORIAL

In Memoriam: Jere Mead (1920–2009)  
*P. T. Macklem*

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## INVITED EDITORIALS

Say NO to hypoperfusion! (see “NOS inhibition blunts and delays the compensatory dilation in hypoperfused contracting human muscles,” page 1685)

*D. J. Duncker and D. Merkus*

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Conductance, admittance, and hypertonic saline: should we take ventricular volume measurements with a grain of salt? (see “Dynamic correction for parallel conductance,  $G_p$ , and gain factor,  $\alpha$ , in invasive murine left ventricular volume measurements,” page 1693)

*M. Krenz*

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NOS inhibition blunts and delays the compensatory dilation in hypoperfused contracting human muscles

*D. P. Casey and M. J. Joyner*

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Dynamic correction for parallel conductance,  $G_p$ , and gain factor,  $\alpha$ , in invasive murine left ventricular volume measurements

*J. E. Porterfield, A. T. G. Kottam, K. Raghavan, D. Escobedo, J. T. Jenkins,  
E. R. Larson, R. J. Treviño, J. W. Valvano, J. A. Pearce, and M. D. Feldman*

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Effect of whole body heat stress on peripheral vasoconstriction during leg dependency

*R. M. Brothers, J. E. Wingo, K. A. Hubing, J. Del Coso, and C. G. Crandall*

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Contrasting effects of simulated microgravity with and without daily  $-G_x$  gravitation on structure and function of cerebral and mesenteric small arteries in rats

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Effects of heat stress on dynamic cerebral autoregulation during large fluctuations in arterial blood pressure

*R. M. Brothers, R. Zhang, J. E. Wingo, K. A. Hubing, and C. G. Crandall*

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Relationship between Sirt1 expression and mitochondrial proteins during conditions of chronic muscle use and disuse

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Optimizing the “priming” effect: influence of prior exercise intensity and recovery duration on  $O_2$  uptake kinetics and severe-intensity exercise tolerance

*S. J. Bailey, A. Vanhatalo, D. P. Wilkerson, F. J. DiMenna, and A. M. Jones*

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Cover: The October through December 2009 Highlighted Topics series examines the role of “clock genes” in cardio-metabolic disease in a series of review articles written by a panel of international experts. This series was conceived and edited by Coordinating Associate Editor Karyn Esser and Guest Editor Martin Young. We acknowledge Steve Graepel, illustrator of the cover design. This illustration is copyrighted by Steve Graepel and reproduced with permission.

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Effect of oxygen breathing and perfluorocarbon emulsion treatment on air bubbles in adipose tissue during decompression sickness <i>T. Randsoe and O. Hyldegaard</i>	1857
Effects of resistance exercise and fortified milk on skeletal muscle mass, muscle size, and functional performance in middle-aged and older men: an 18-mo randomized controlled trial <i>S. Kukuljan, C. A. Nowson, K. Sanders, and R. M. Daly</i>	1864
Corticomotor plasticity and learning of a ballistic thumb training task are diminished in older adults <i>N. C. Rogasch, T. J. Dartnall, J. Cirillo, M. A. Nordstrom, and J. G. Semmler</i>	1874
Low-frequency assessment of airway and tissue mechanics in ventilated COPD patients <i>A. Lox, B. Szabó, M. Hercsuth, I. Péntzes, and Z. Hantos</i>	1884
Is the ratio of flow-mediated dilation and shear rate a statistically sound approach to normalization in cross-sectional studies on endothelial function? <i>G. Atkinson, A. M. Batterham, M. A. Black, N. T. Cable, N. D. Hopkins, E. A. Dawson, D. H. J. Thijssen, H. Jones, T. M. Tinken, and D. J. Green</i>	1893

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Rap1 mediates protective effects of iloprost against ventilator-induced lung injury <i>A. A. Birukova, P. Fu, J. Xing, and K. G. Birukov</i>	1900
Permanent alveolar remodeling in canine lung induced by high-altitude residence during maturation <i>P. Ravikumar, D. J. Bellotto, R. L. Johnson Jr., and C. C. W. Hsia</i>	1911
Economy of running: beyond the measurement of oxygen uptake <i>J. R. Fletcher, S. P. Esau, and B. R. MacIntosh</i>	1918
Gross ultrastructural changes and necrotic fiber segments in elbow flexor muscles after maximal voluntary eccentric action in humans <i>F. Lauritzen, G. Paulsen, T. Raastad, L. H. Bergersen, and S. G. Owe</i>	1923
Doxorubicin acts through tumor necrosis factor receptor subtype 1 to cause dysfunction of murine skeletal muscle <i>L. A. A. Gilliam, L. F. Ferreira, J. D. Bruton, J. S. Moylan, H. Westerblad, D. K. St. Clair, and M. B. Reid</i>	1935

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## TRANSLATIONAL PHYSIOLOGY

Time-dependent mobilization of circulating progenitor cells during strenuous exercise in healthy individuals <i>S. Möbius-Winkler, T. Hilberg, K. Menzel, E. Golla, A. Burman, G. Schuler, and V. Adams</i>	1943
How can an inert gas counterbalance a NMDA-induced glutamate release? <i>N. Vallee, J.-C. Rostain, and J.-J. Risso</i>	1951

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## HIGHLIGHTED TOPIC

### The Role of Clock Genes in Cardiometabolic Disease

<b>Review:</b> Molecular control of circadian metabolic rhythms <i>S. Li and J. D. Lin</i>	1959
<b>Review:</b> How nuclear receptors tell time <i>M. Teboul, A. Gréchez-Cassiau, F. Guillaumond, and F. Delaunay</i>	1965
<b>Review:</b> Rev-erb- $\alpha$ : an integrator of circadian rhythms and metabolism <i>H. Duez and B. Staels</i>	1972

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## VIEWPOINT

<b>Perspectives:</b> The cardiac contraction cycle: is $\text{Ca}^{2+}$ going local? <i>M. R. Fowler and G. L. Smith</i>	1981
<b>Letter To The Editor:</b> Commentaries on Viewpoint: The cardiac contraction cycle: Is $\text{Ca}^{2+}$ going local? <i>H. Reuter, W. E. Louch, F. Brette, J. S. K. Sham, H. Sun, X.-R. Yang, C. Soeller, E. G. Lakatta, and R. C. Balijepalli</i>	1985
<b>Last Word on Viewpoint:</b> The cardiac contraction cycle: Is $\text{Ca}^{2+}$ going local? <i>M. R. Fowler and G. L. Smith</i>	1988

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## RETRACTION

Retraction for Brooks et al.	1989
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