

Publications 2004-2017

Peer-reviewed Articles

- Gambara G, Salanova M, Ciciliot S, Furlan S, Gutschmann M, Schiffl G, Ungethuem U, Volpe P, **Gunga HC**, Blottner D. Microgravity-induced transcriptome adaptation in mouse paraspinal longissimus dorsi muscle highlights insulin resistance-linked genes. *Front Physiol.* 2017 May 5; doi: 10.3389/fphys.2017.00279.
- Clauss M, Nurutdinova I, Meloro C, **Gunga HC**, Jiang D, Koller J, Herkner B, Sander PM, Hellwich O. Reconstruction of body cavity volume in terrestrial tetrapods. *J Anat.* 2017 Feb; 230(2):325-36.
- Gambara G, Salanova M, Ciciliot S, Furlan S, Gutschmann M, Schiffl G, Ungethuem U, Volpe P, **Gunga HC**, Blottner D. Gene expression profiling in slow-type calf soleus muscle of 30 days space-flown mice. *PLoS One.* 2017 Jan 11;12(1):e0169314.
- Coker RH, Weaver AN, Coker MS, Murphy CJ, **Gunga HC**, Steinach M. Metabolic responses to the Yukon Arctic Ultra: Longest and coldest in the world. *Med Sci Sports Exerc.* 2017 Feb;49(2):357-62.
- Mendt S, Maggioni MA, Nordine M, Steinach M, Opatz O, Belavý D, Felsenberg D, Koch J, Shang P, **Gunga HC**, Stahn A. Circadian rhythms in bed rests: Monitoring core body temperature via heat-flux approach is superior to skin surface temperature. *Chronobiol Int.* 2017;34(5):666-76.
- Persson PB, Wenger RH, Lundby C, **Gunga HC**. Did you know?: Neocytolysis, how to halt EPO? *Acta Physiol (Oxf).* 2016 Sep;218(1):5-6.
- Steinach M, Kohlberg E, Maggioni MA, Mendt S, Opatz O, Stahn A, **Gunga HC**. Sleep quality changes during overwintering at the german antarctic stations Neumayer II and III: The gender factor. *PLoS One.* 2016 Feb 26;11(2):e0150099.
- Habazettl H, Stahn A, Nitsche A, Nordine M, Pries AR, **Gunga HC**, Opatz O: Microvascular responses to (hyper-) gravitational stress by short-arm human centrifuge: arteriolar vasoconstriction and venous pooling. *Eur J Appl Physiol* 2016 Jan;116(1):57-65.
- Steinach M, Kohlberg E, Maggioni MA, Mendt S, Opatz O, Stahn A, Tiedemann J, **Gunga HC**: Changes of 25-OH-vitamin D during overwintering at the german antarctic stations Neumayer II and III. *PLoS One.* 2015 Dec 7;10(12):e0144130.
- Nordine M, Maggioni MA, Stahn A, Mendt S, Brauns K, **Gunga HC**, Habazettl H, Nitsche A, Opatz O: Form influences function: Anthropometry and orthostatic stability during sustained acceleration in a short arm human centrifuge. *Acta Astronautica.* 2015 May 27; 115:138-46.
- Haider T, **Gunga HC**, Matteucci-Gothe R, Sottara E, Griesmacher A, Belavý DL, Felsenberg D, Werner A, Schobersberger W: Effects of long-term head-down-tilt bed rest and different training regimes on the coagulation system of healthy men. *Physiol Rep.* 2013 Nov;1(6):e00135.

- Opatz O, Trippel T, Lochner A, Werner A, Stahn A, Kuhring M, Steinach M, Lenk J, Kuppe H, Kirsch K, **Gunga HC**. Temporal and spatial dispersion of human body temperature during deep hypothermia. The nonlinearity of physiological recordings. *Br J Anaesthesia*. 2013 Nov;111(5):768-75.
- Casey DP, Imray CH, Wilson MH, Flouris AD, Carrillo AE, Tedjasaputra V, Hopkins SR, Birchard GF, Billat V, West JB, Vagula MC, Nelatury C, Bennet L, Gasier HG, **Gunga HC**, Egginton S, Kumar P: Comments on point: counterpoint: high altitude is/is not for the birds! *J Appl Physiol (1985)*. 2011 Nov;111(5):1520-24.
- Sander PM, Christian A, Clauss M, Fechner R, Gee CT, Griebeler E-M, **Gunga H-C**, Hummel J, Mallison H, Perry SF, Preuschoft H, Rauhut OWM, Remes K, Tütken T, Wings O, Witzel U. Biology of the sauropod dinosaurs: the evolution of gigantism. *Biological Reviews* 2011;86:117-55.
- Opatz O, Stahn A, Werner A, **Gunga HC**. Determining core body temperature via heat flux - a new promising approach. *Resuscitation* 2010 Nov;81(11):1588-89.
- Lipnicki DM, **Gunga HC**, Belavy DL, Felsenberg D. Bed rest and cognition: Effects on executive functioning and reaction time. *Aviat Space Environ Med*. 2009 Dec;80(12):1018-24.
- Lipnicki DM, **Gunga HC**, Belavy DL, Felsenberg D. Decision making after 50 days of simulated weightlessness. *Brain Res* 2009 Jul 14;1280:84-9.
- Gunga HC**, Werner A, Stahn A, Steinach M, Schlabs T, Koralewski E, Kunz D, Belavy DL, Felsenberg D, Sattler F, Koch J. The Double Sensor – A non-invasive device to continuously monitor core temperature in humans on earth and in space. *Respir. Physiol. Neurobiol*. 2009 Oct;169 Suppl 1:S63-8.
- Franz R, Hummel J, Kienzle E, Kölle P, **Gunga HC**, Clauss M. Allometry of visceral organs in living amniotes and its implications for sauropod dinosaurs. *Proc Biol* 2009 May 7;276(1662):1731-6.
- Lipnicki DM, **Gunga HC**. Physical inactivity and cognitive functioning: Results from bed rest studies. *Eur J Appl Physiol*. 2009 Jan;105(1):27-35.
- Gunga HC**, Sandsund M, Reinertsen, RE, Sattler F, Koch J. A non-invasive device to continuously determine heat strain in humans. *J Thermal Biol* 2008;33:297-307.
- Schobersberger W, Toff WD, Eklöf B, Fraedrich G, **Gunga HC**, Haas S, Landgraf H, Lapostolle F, Partsch H, Perschler F, Schnapka J, Schobersberger B, Scurr JH, Watzke H; Hall consensus development group. Traveller's thrombosis: international consensus statement. *Vasa*. 2008 Nov;37(4):311-7.
- Frassl W, Kowoll R, Katz N, Speth M, Stangl A, Brechtel L, Joscht B, Boldt LH, Meier-Buttermilch R, Schlemmer M, Roecker L, **Gunga HC**. Cardiac markers (BNP, NT-pro-BNP, Troponin I, Troponin T, in female amateur runners before and up until three days after a marathon. *Clin Lab*. 2008;54(3-4):81-7.

- Boldt LH, Fraszl W, Röcker L, Schefold JC, Steinach M, Noack T, **Gunga HC**. Changes in the haemostatic system after thermoneutral and hyperthermic water immersion. *Eur J Appl Physiol*. 2008 Mar;102(5):547-54.
- Gunga HC**, Suthau T, Bellmann A, Stoinski S, Friedrich A, Trippel T, Kirsch K, Hellwich O. A new body mass estimation of *Brachiosaurus brancai* Janensch, 1914 mounted and exhibited at the Museum of Natural History (Berlin, Germany). *Fossil Record* 2008;11(1):33-8.
- Gunga HC**, Kirsch KA, Roecker L, Kohlberg E, Tiedemann J, Steinach M, Schobersberger W. Erythropoietin regulations in humans under different environmental and experimental conditions. *Respir Physiol Neurobiol*. 2007 Sep 30;158(2-3):287-297.
- Gunga HC**, Suthau T, Bellmann A, Friedrich A, Schwanebeck T, Stoinski S, Trippel T, Kirsch K, Hellwich O. Body mass estimations for *Plateosaurus engelhardti* using laser scanning and 3D reconstruction methods. *Naturwissenschaften*. 2007 Aug;94(8):623-30.
- Mittermayr M, Fries D, Gruber H, Peer S, Klingler A, Fischbach U, **Gunga HC**, Koralewski E, Faulhaber M, Simmer M, Schobersberger W. Leg edema formation and venous blood flow velocity during a simulated long-haul flight. *Thromb Res*. 2007;120(4):497-504.
- Schobersberger W, Mittermayr M, Fries D, Innerhofer P, Klingler A, Faulhaber M, **Gunga HC**, Streif W. Changes in blood coagulation of arm and leg veins during a simulated long-haul flight. *Thromb Res* 2007;119:293-300.
- Roecker L, Kowoll R, Fraszl W, Battal K, Brechtel L, Brachmann S, Meier-Buttermilch R, **Gunga HC**, Stangl A, Kiesewetter H. Observation of serum erythropoietin concentrations in female athletes for up to eight days after a marathon run. *Clin Lab*. 2006;52(9-10):511-3.
- Greie S, Humpeler E, **Gunga HC**, Koralewski E, Klingler A, Mittermayr M, Fries D, Lechleitner M, Hoertnagl H, Hoffmann G, Strauss-Blasche G, Schobersberger W. Improvement of metabolic syndrome markers through altitude specific hiking vacations. *J Endocrinol Invest*. 2006 Jun;29(6):497-504.
- Valenti G, Fraszl W, Addabbo F, Tamma G, Procino G, Satta E, Cirillo M, De Santo NG, Drummer C, Bellini L, Kowoll R, Schlemmer M, Vogler S, Kirsch KA, Svelto M, **Gunga HC**. Water immersion is associated with an increase in aquaporin-2 excretion in healthy volunteers. *Biochim Biophys Acta*. 2006 Aug;1758(8):1111-6.
- Kirsch KA, Schlemmer M, De Santo NG, Cirillo M, Perna A, **Gunga HC**. Erythropoietin as a volume-regulating hormone: an integrated view. *Semin Nephrol* 2005 Nov;25(6):388-91.
- De Santo NG, Cirillo M, Kirsch KA, Correale G, Drummer C, Fraszl W, Perna AF, Di Stazio E, Bellini L, **Gunga HC**. Anemia and erythropoietin in space flights. *Semin Nephrol*. 2005 Nov;25(6):379-87.

Schobersberger W, Greie S, Humpeler E, Mittermayr M, Fries D, Schobersberger B, Artner-Dworzak E, Hasibeder W, Klingler A, **Gunga HC**. Austrian Moderate Altitude Study (AMAS 2000): erythropoietic activity and Hb-O₂ affinity during a 3-week hiking holiday at moderate altitude in persons with metabolic syndrome. *High Alt Med Biol.* 2005 Summer;6(2):167-77.

Schobersberger W, Hoffmann G, **Gunga HC**. [Interaction of hypoxia and haemostasis – hypoxia as a prothrombotic factor at high altitude?]. *Wien Med Wochenschr* 2005 Apr;155(7-8):157-62.

Appenzeller O, **Gunga HC**, Qualls C, Furlan R, Porta A, Lucas SG, Heckert AB, Kirsch K, Costa-Junqueira MA, Guillén SE, Sander M, Schneider T, Blottner B. A hypothesis: autonomic rhythms are reflected in growth lines of teeth in humans and extinct archosaurs. *Auton Neurosci.* 2005 Feb 7;117(2):115-9.

Rudnick J, Püttmann B, Tesch PA, Alkner B, Schoser BG, Salanova M, Kirsch K, **Gunga HC**, Schiffli G, Lück G, Blottner D. Differential expression of nitric oxide synthases (NOS 1-3) in human skeletal muscle following exercise countermeasure during 12 weeks of bed rest. *FASEB J.* 2004 Aug;18(11):1228-30.

Book Chapters

Stahn A, Terblanche E, **Gunga HC**: Use of bioelectrical impedance: General principles. *In:* Preedy VR (ed.), *Handbook of Anthropometry: Physical Measures of Human Form in Health and Disease*, Springer Science+Business Media, LLC 2012, pp. 49-90.

Stahn A, Terblanche E, **Gunga HC**: Selected applications of bioelectrical impedance analysis: Body fluids, blood volume, body cell mass and fat mass. *In:* Preedy VR (ed.), *Handbook of Anthropometry: Physical Measures of Human Form in Health and Disease*, Springer Science+Business Media, LLC 2012, pp. 415-40.

Steinach M, **Gunga HC**: Circadian rhythm and stress. *In:* Choukèr A (ed.), *Stress Challenges and Immunity in Space*. Berlin, Heidelberg: Springer-Verlag, 2012, pp. 87-106.

Werner A, **Gunga HC**: Monitoring of body core temperature in humans. *In:* Choukèr A (ed.), *Stress Challenges and Immunity in Space*. Berlin, Heidelberg: Springer-Verlag, 2012, pp. 309-26.

Gunga HC, Steinach M, Kirsch K. Space Medicine and Biology. *In:* Ley, Wittmann, Hallmann (Eds.), *Handbook of Space Technology*, chapt. 7.6, p. 606-21, West Sussex, UK, Wiley & Sons, 2009.

Gunga HC, Steinach M, Kirsch K. Weltraummedizin und -biologie. *In:* Ley, Wittmann, Hallmann (Eds.), *Handbuch für Raumfahrttechnik*, Kap. 7.6, p. 575-88, München: Hansaverlag, 2007.

Books

Gunga HC, Weller von Ahlefeld V, Appell Coriolano HJ, Werner A, Hoffmann U. Cardiovascular System, Red Blood Cells, and Oxygen Transport in Microgravity, Springer, 2016.

Gunga HC: Human Physiology in Extreme Environments, Academic Press, 2015.

Gunga HC. Nathan Zuntz. His Life and Work in the Fields of High Altitude Physiology and Aviation Medicine. American Physiological Society, Elsevier 2009