

From minerals and muscles to movements and metabolism: the 6th ZIHP Symposium

By Magdalena Seebauer

What do osteoporosis and muscle cramps have in common? They are both caused by a lack of minerals, calcium in the first case, magnesium in the latter. "Minerals have to be kept within narrow limits", explained Prof. René J. M. Bindels from the Nijmegen Centre for Molecular Life Sciences in the Netherlands who gave the first keynote lecture at the ► **6th ZIHP Symposium**. This balance is tightly regulated through the uptake in the intestine, the storage in the bones and the excretion via the kidney. Prof. Bindels gave a guided tour through several so-called "rare diseases"



Prof. René J. M. Bindels

where a genetic defect impairs the function of mineral homeostasis. By analyzing the molecular mechanisms, physiologists can get insights into the impaired function.

Muscle cells need oxygen and fuels for power production. What sets the functional capacity for muscle work? Is it a limitation of the oxygen transport from the air through the lung and circulation to capillaries and mitochondria, the power stations of the cells? Or is it rather a limitation of fuel supply? With these questions, Prof. Ewald R. Weibel from the Institute of Anatomy of the University of Bern took the audience on a fascinating trip through comparative physiology. He analyzed differences in maximal power production that were induced either by training or by evolutionary adaptations – the athletic dog versus the sedentary goat – or related to the body size of the individual, for example the smallest mammalian, a two gram mouse, versus a buffalo.



Prof. Ewald R. Weibel

Beside these keynote lectures, oral presentations of very high scientific and didactic standard were given by junior researchers. Topics covered a broad spectrum from atherosclerosis to the zebrafish model. Happy faces about new insights into unknown areas of research and lively discussions proved that concept. The decision whom to award the prize for the best presentation was not easy: Congratulations to Chad

Brokopp, from Cardiovascular Research at the USZ for his outstanding presentation on the fibroblast activation protein in atherosclerosis!

Many thanks go to the poster jury, consisting of eight junior researchers who dedicated a considerable part of their time to studying and discussing the nearly 80 posters and to decide on the best four poster presentations. Congratulations to Magdalena Herová, Martin Urner, Katharina Leucht and Salomé Kurth!

In the afternoon, Prof. Marianne Dieterich from the Department of Neurology at the Ludwig-Maximilians University of Munich caught the attention of the audience with impressive video clips showing patients with disorders of the vestibular system.



Prof. Marianne Dieterich

Having the eyes closed, some of them immediately fall to one side. With modern imaging techniques Prof. Dieterich analyzes the different inputs necessary to keep the balance. "These inputs come from what you see, what you feel for example with your feet on the floor and whether you experience a rotation or a forward movement", she explained.

How does the cell know whether energy should be made available or in contrast, energy should be stored? At the end of the symposium, Prof. Johan Auwerx from the Laboratory of Integrative Systems Physiology of the EPFL explained the networking of several biological factors responsible for metabolic flexibility.



Prof. Johan Auwerx

These factors act as cellular energy sensors and mediate for example the effects of caloric restriction or resveratrol – a constituent of red wine – on longevity.

Through the day, metabolic demands were not only discussed theoretically, but also satisfied practically. Delicate sandwiches at lunch and coffee breaks gave new energy to brains and bodies for further stimulating inputs and lively discussions. With this, one of the main aims of the ZIHP was again achieved: networking between scientists.

Photo gallery of the 6th ZIHP Symposium

See more photos of the ZIHP Symposium in our ► [photo gallery](#).

General Assembly of the ZIHP

The General Assembly of the ZIHP was held within the symposium. Prof. Arnold von Eckardstein was elected as a new member of the ► **ZIHP Steering Committee**, since Prof. Marc Donath left for a professorship in Basel.

Events

September 20, 2010

► **Amino acid transport across the murine blood-brain barrier**

Nadine Ruderisch, Institute of Physiology, UZH

September 21, 2010

► **Functions of aldosterone in electrolyte homeostasis and pregnancy**

Abhijeet Todkar, Institute of Physiology, UZH

September 22, 2010

► **The endothelium in the control of the cardiovascular system**

Prof. Dr. Paul M. Vanhoutte, Dept. of Pharmacology & Pharmacy, The University of Hong Kong and former ZIHP Advisory Board Member

September 23, 2010

► **Sleep as a behavioral and physiological correlate of intellectual ability in healthy children**

Anja Geiger, Child Development Center, University Childrens Hospital

September 23, 2010

► **Erkenntnisse vom Labor, die zur Verbesserung des postoperativen Outcomes führen**

Prof. Dr. Beatrice Beck Schimmer, Physiologisches Institut, UZH

September 25, 2010 - Antrittsvorlesung

► **Ru(h)m und Schwindel**

PD Dr. Stefan Hegemann, Klinik für Ohren-, Nasen-, Hals- und Gesichtschirurgie, USZ

September 28, 2010 - ZIHP Lunch Seminar

► **Cardiovascular side effects of traditional NSAIDs and paracetamol: Painful lessons**

Prof. Dr. Frank Ruschitzka, Clinic for Cardiology, USZ

September 29, 2010

► **Sirolimus zur Behandlung der autosomal-dominanten polyzystischen Nierenerkrankung (ADPKD)**

PD Dr. Andreas Serra, Klinik für Nephrologie, USZ

September 29, 2010

► **Intensivmedizin gestern, heute und morgen UniversitätsSpital Zürich**

Jubiläumssymposium Medizinische Intensivstation

September - Oktober 2010

► **Neurologie-Fortbildung**

October 4, 2010

► **Progression of chronic kidney disease – an overview**

Prof. Dr. Franziska Theilig, Department of Medicine, Unit of Anatomy, University of Fribourg

October 5, 2010

► **Volatile anesthetics attenuate reperfusion injury: clinical evidence and possible experimental explanations**

Dr. Björn Müller-Edenborn, Institute of Physiology, UZH

October 7, 2010

► **COPD – Neue Aspekte einer alten Erkrankung**

Prof. Dr. Erich Russi, Klinik für Pneumologie, USZ

October 7, 2010

► **Hydroxyurea bei angeborenen Hämoglobinopathien**

Dr. Jeroen Goede, Hämatologie, USZ

October 9, 2010 - Antrittsvorlesung

► **730 Millionen Schläge bis zum Ende - Faszination Herz**

PD Dr. Colin Schwarzwald, Abt. Innere Medizin Pferde, Vetsuisse, UZH

October 12, 2010 - Farewell Lecture and ZIHP Lunch Seminar

► **Phylogeny of sleep**

Prof. Dr. Irene Tobler, Institute of Pharmacology and Toxicology, UZH

October 14, 2010

► **3. Zürcher Herbstsymposium in Klinischer Ernährung «Brennpunkte 2010»**

Press review

► **Leiden für die Fitness**

Während acht Wochen testeten Fernsehmoderatoren unter der Anleitung von ZIHP-Mitglied Marco Toigo und Kollegen die neue Trainingsmethode HIT (High Intensity Training).

"Einstein" - Das Wissensmagazin des Schweizer Fernsehens, 2. September 2010

► **Totgesagte leben länger**

Mumien sind nicht nur von historischem Interesse. Sie geben auch Aufschluss über die Evolution menschlicher Infektionskrankheiten, weiss ZIHP-Mitglied Frank Rühli.

Horizonte - Das Schweizer Forschungsmagazin 2. September 2010

Congratulations

Ian Frew, ZIHP-Assistenzprofessor, erhält ein renommiertes ► **«ERC Starting Grant» des Europäischen Forschungsrates.**

Peter Achermann, member of the ZIHP Steering Committee, won the ► **2nd prize at the photo competition «Diversity of Nature»** organized by Life Science Zurich.

imMed - graduate courses

► Introduction to descriptive and analytic statistics

November 3, 10, 17 and 24, 2010

Deadline for registration: October 15, 2010

► Aspects of sensory motor transformation

November 29, December 6 and 13, 2010

Deadline for registration: October 29, 2010

New PhD students of the imMed Program

Since the last recruitment round 14 new PhD students were accepted to the PhD Program in Integrative Molecular Medicine (*imMed*). Welcome!

Heiko Bode, Institute of Clinical Chemistry, USZ
Jürg Cabalzar, Institute of Physiology, UZH
Alexandra Cee, Clinic for Gastroenterology & Hepatology, USZ
Chien-Cheng Chen, Department of Neurology, USZ
Marianna Di Chiara, Institute of Anatomy, UZH
Elena Dolgodilina, Institute of Physiology, UZH
Sabrina Engelhardt, Institute of Veterinary Physiology, UZH
Adriano Guetg, Institute of Physiology, UZH
Yen-Lin Huang, Institute of Physiology, UZH
Josua Jordi, Institute of Physiology, UZH
Germaine Korner, Division of Chemistry and Biochemistry, University Children's Hospital
Ali Mirsaidi, Centre for Applied Biotechnology and Molecular Medicine, UZH
Monica Patti, Institute of Physiology, UZH
Fiona Pugin, Child Development Center, University Children's Hospital

Recent publications

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