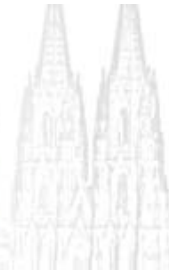




7TH INTERNATIONAL WORKSHOP for Musculoskeletal & Neuronal Interactions

20-23 May 2010

Kardinal Schulte Haus, Bergisch Gladbach, Cologne, Germany



SCIENTIFIC PROGRAM

Thursday, May 20th 2010

- 13.00 - 13.10 Welcome Note: Eckhard Schönau**
- 13.00 - 17.15 Session 1: MECHANOSTAT AND MECHANOGRAPHY**
Co-chairs: Oliver Fricke, Dieter Felsenberg
- 13.10 - 13.45 **Cybernetic function of the Mechanostat.**
Frank Rauch, Genetics Unit, Shriners Hospital for Children, McGill University, Montreal, Canada
- 13.45 - 14.15 **Basics of Mechanography.**
Jörn Rittweger, Institute of Aerospace Medicine,
Division Space Physiology, German Aerospace Center, Cologne, Germany.
- 14.15 - 14.45 **Mechanographic reference data in children.**
Rainer Rawer, Novotech Medical, Pforzheim, Germany
- 14.45 - 15.15 Coffee Break**
- 15.15 - 15.45 **What is maximum voluntary muscle force?**
Hans Schiessl, Director, Stratec Medizintechnik, Pforzheim, Germany
- 15.45 - 16.15 **What should be measured? Force vs. power.**
Oliver Fricke, University of Cologne, Pediatric Endocrinology, Cologne, Germany
- 16.15 - 16.45 **Effects of synthetic exercise on strength, endurance, and muscle fiber adaptations in young women.**
Marco Toigo, Exercise Physiology, ETH Zurich and University of Zurich, Switzerland
- 16.45 - 16.55 **021: Prevention Of Simulated Weightlessness-Induced Musculo-Skeletal Losses With A Combination Therapy.**
Sunil J Wimalawansa, Galveston, USA
- 16.55 - 17.15 **Plenary Discussion**
- 17.15 - 18.00 Hands on Workshop.**
Harald Schubert, Rainer Rawer, Pforzheim, Germany
- 19.00 - 21.00 Reception (followed by Italian Dinner Buffet)**
- 21.00 - 24.00 Pub is open for our guests**

Friday, May 21st 2010

08.00 - 10.00 Session 2: MUSCLE, BONE AND NEUROLOGICAL DISORDERS

Co-chairs: Marco Toigo, Albert Gollhofer

08.00-08.30 Muscle bone relations in health and disease in adults.

Dieter Felsenberg, Centre for Muscle and Bone Research,
Charité - Campus Benjamin Franklin, Berlin, Germany

08.30-09.00 Neuronal effects of vibration training

Albert Gollhofer, University of Freiburg Institute of Sport and Sport Science, Freiburg, Germany

09.00 - 09.30 Diagnostics of Sarcopenia / Muscular assessment in geriatric patients.

Martin Runge, Medical Director of Aerpah-Clinics Esslingen and. Ilshofen, Germany

09.30 - 10.00 Summary and Conclusion Mechanography

Chair: Hans Schiessl

10.00 - 10.30 Coffee Break

10.30 - 11.00 ORAL COMMUNICATIONS (TENDON & MUSCLE)

Co-chairs: Jörn Rittweger, Jun Iwamoto

10.30 - 10.40 001: The Pathomechanics Of Compressive Loads On Tendon.

David Spurrier, Kingswood, Australia

10.40 - 10.50 002: Maximum Power During The Counter-Movement Jump Strongly Related To The Age In Healthy Japanese.

Atsuhiko Tsubaki, Niigata, Japan

10.50 - 11.00 003: Muscle Mass And Bone Mineral Density In Hyperthyroid Elderly Women.

Mário Rui Mascarenhas, Lisbon, Portugal

11.00 - 12.00 POSTER SESSION I (Poster presentation of Odd Numbers)

P01: New Biomimetic Scaffolds Based On Biopolymers And Calcium Phosphates, With Potential Use In Bone Tissue Engineering.

Edi Tanase, Iasi, Romania

P03: Adult Hindlimb Unloaded Rat Model Mimics Astronaut Bone Loss And Recovery Patterns.

Harry A Hogan, College Station, Texas, USA

P05: Short-Term Voluntary Exercise In The Rat Causes Bone Modeling Without Initiating A Physiologic Stress Response.

Elwyn C Firth, Palmerston North, New Zealand

P07: Exomphalos - Macroglossia - Gigantismus Syndrom (EMG) As An Example Somatic Asymmetry And Biomechanical Disturbancies.

Miroslav Kuklik, Prague, Czech Republic

P09: The Weight Bearing Paraplegic Arm.

Yannis Dionyssiotis, Rhodes, Greece

P11: Bone Mineral Density In Postmenopausal Women With Osteoporotic Fractures.

Vladyslav Povoroznyuk, Kiev, Ukraine

P13: Effect Of Zolendronic Acid In Treatment Of Postmenopausal Women With Osteoporosis.

Vladyslav Povoroznyuk, Kiev, Ukraine

P15: Amplified Aging-Pattern Of Metacarpal Shaft Bone Geometry In Patients With Rheumatoid Arthritis Compared To Healthy Controls.

Prisca Eser, Berne, Switzerland

P17: Hormonal And Metabolic Responses To Whole Body Vibration In Healthy Adults.

Ralf Beccard, Cologne, Germany

P19: Influence Of Low Frequent Whole Body Vibration (WBV) On Motor Recovery After Compression Spinal Cord Injury In Rats.

Oliver Jörg Semler, Cologne, Germany

P23: Comparison Between Two Modalities Of Measuring Bone Mineral Density In the Elderly With Proximal Humeral Fracture.

Ioannis Charopoulos, Athens, Greece

P25: Combination Of Nitric Oxide And Bisphosphonates Further Enhances The Increments Of Bone Mineral Density.

Sunil J. Wimalawansa, New Brunswick, USA

12.00 - 13.30 Lunch

13.30 - 15.30 **Session 3: BONE LOSS IN DISEASE**

Co-chairs: Richard Prince, Martin Runge

13.30 - 14.10 **Clinical goals for rehabilitation in the geriatric patient.**

Cornel Sieber, Chair Internal Medicine-Geriatrics and Director Institute for Biomedicine of Aging, Friedrich Alexander University Erlangen-Nürnberg, Germany

14.10 - 14.20 **004:** Reduced Trabecular BMD And Cortical Thickness Accompanied By Increased Outer Bone Circumference In Metacarpal Bone Of Rheumatoid Arthritis Patients.

Daniel Aeberli, Berne, Switzerland

14.20 - 14.30 **005:** History Of Fractures Is Associated With Cortical Bone Geometry In Healthy Young Men.

Hans-Georg Zmierczak, Ghent, Belgium

14.30 - 14.40 **006:** The Effects Of Aging On Bone Mass And Parameters Of Bone Geometry And Architecture In Treatment - Naïve Postmenopausal Women: A Tibia Peripheral Quantitative Computed Tomography (pQCT) Study.

KD Stathopoulos, Athens, Greece

14.40 - 14.50 **007:** Longitudinal Changes In Bone In The First Year Of Spinal Cord Injury

Sylvie Coupaud, Glasgow, UK

14.50 - 15.00 **008:** The Influence Of The Level Of Injury In Bone Mineral Content (BMC) And Mechanical Properties, Muscles And Fat In The Lower Limbs Of Chronic Paraplegic Men.

Yannis Dionysiotis, Rhodes, Greece

15.00 - 15.10 **009:** Non-Invasive Biomechanical Analysis Of The Whole Human Tibia In Sedentary People, Trained Long-Distance Runners, And Chronic Paraplegic Patients. A Serial (19-Scan) pQCT Study.

Jose-Luis Ferretti, Rosario, Argentina

15.10 - 15.20 **010:** Alterations Of Bone Metabolic Parameters In Children And Adolescents With Chronic Myeloid Leukemia, Under Prolonged Treatment With The Tyrosine Kinase Inhibitor Imatinib.

Josephine Tabea Tauer, Dresden, Germany

15.20 - 15.30 **011:** 8 - 10 Years Follow-Up Data Of Tibial Trabecular Density In Elderly People Measured By pQCT.

Martin Runge, Esslingen, Germany

15.30 - 16.00 **Coffee Break**

16.00 - 17.30 **Session 4: BONE LOSS / DIAGNOSTICS (supported by Pfizer)**

Co-chairs: Cornel Sieber / Jose Luis Ferretti

16.00 - 16.30 **Muscle as an Endocrine Organ**

Oliver Fricke, University of Cologne, Pediatric Endocrinology, Cologne, Germany

16.30 - 16.40 **012:** The Impact Of Estrogens And Growth Hormone On Bone In Turner Syndrome.

Ondrej Soucek, Prague, Czech Republic

16.40 - 16.50 **013:** Muscle-Bone Relationship At The Forearm And The Lower Leg: The Importance Of Including The Ulna And Fibula.

Prisca Eser, Berne, Switzerland

16.50 - 17.00 **014:** Comparison Of Optical Coherence Tomography, Micro Computed Tomography And Histology At A Three-Dimensionally Imaged Bone Sample.

Marita Kratz, Marburg, Germany

17.00 - 17.10 **015:** Ethnic Differences In DXA And pQCT Measures Between South African Children, Aged 13 Years.

Lisa K Micklesfield, Cape Town, South Africa

17.10 - 17.20 **016:** Influence Of Zoledronic Acid Infusion On State Of Cardiovascular System In Postmenopausal Women.

Vladyslav Povoroznyuk, Kiev, Ukraine

17.20 - 17.30 **017:** Age-Related Bone Loss Is Attenuated In The Humerus Of The Throwing Arm Of Master Throwers.

Sarah L. Stevens, Manchester, UK

17.30 - 18.30 POSTER SESSION II (Poster presentation of Even Numbers)

P02: External Forces in Case of Human Downfall.

Radim Krupicka, Prague, Czech Republic

P04: Chondros, An Advanced Bioreactor For Mechanical Stimulation And Mechanical Property Measurements.

David Jones, Marburg, Germany

P06: Effect Of High Fat Diet On Mesenchymal Stem Cells And Bone Properties.

Jenna Stevens-Smith, Sheffield, UK

P08: Variation In Bone Loss In Spinal Cord Injury Patients Can Be Explained By Variation In Endocortical And Periosteal Circumference.

Jörn Rittweger, Cologne, Germany

P10: If Astronauts Don't Lose Bone Why Take Counter Measures?

David Jones, Marburg, Germany

P12: Vitamin D Deficiency And Insufficiency In Ukrainian Population.

Vladyslav Povoroznyuk, Kiev, Ukraine

P14: Mechanisms Of The Development Of Bisphosphonate-Associated Osteomyelitis Of The Jaw: BAOMJ.

Sunil J. Wimalawansa, New Brunswick, USA

P16: Effect Of A New Physiotherapy Concept On Bone Mineral Density, Muscle Force And Gross Motor Function In Children With Bilateral Cerebral Palsy.

Eckhard Schönau, Cologne, Germany

P18: Electromyographical Recordings During Whole Body Vibration In Paediatric Patients Reveals Harmonic And Subharmonic Neuromuscular Responses.

Oliver Jörg Semler, Cologne, Germany

P20: Osteomalacic Myopathy Following Bariatric Surgery: A Case Report.

George P. Lyrakis, Athens, Greece

P22: Diagnostics Of Skeletal Dysplasias And Biomechanical Aspects Of Treatment.

Ivo Marik, Prague, Czech Republic

P24: Differentiating Between Children With And Without Fracture: DXA vs pQCT.

Nicola Crabtree, Birmingham, UK

18.00 - 18.30 JMNI Board meeting

18.30 - 19.00 ISMNI Board meeting

20.00 Dinner

21.00 Pub is open for our guests

08.00 - 09.20 **Session 5: BASIC RESEARCH IN NEUROMUSCULAR DISEASES**

Co-chairs: Jürg A. Gasser / Brendon Noble

08.00 - 08.45 **Mechanotransduction in Bone and Joints.**

Alex G. Robling, Department of Anatomy & Cell Biology, Indiana University/Purdue University at Indianapolis, USA

08.50 - 09.00 **018:** Comparison Of Bone Loss And Recovery Patterns Due To Simulated Microgravity At The Metaphyses Of The Femur And Tibia In Adult Hindlimb Unloaded Rats.

Harry A Hogan, Texas, USA

09.00 - 09.10 **019:** The Time-Course Of Denervation-Induced Changes In Myonuclear Domain Size In Young-Adult And Old Rat Gastrocnemius Muscle.

Sander FT van der Meer, Manchester, UK

09.10 - 09.20 **020:** Function Of And Capillary Supply To Single Muscle Fibres From Myostatin Knock-Out Mice.

Hans Degens, Manchester, UK

09.20 - 09.50 **Coffee Break**

09.50 - 11.10 **Session 5: BASIC RESEARCH IN NEUROMUSCULAR DISEASES**

Co-chairs: Hans Degens / Linda Ma

09.50 - 10.30 **Relation Between Skeletal Muscle Phenotype And Function.**

Hans Degens, Institute for Biomedical Research into Human Movement and Health, Manchester Metropolitan University, UK

10.30 - 10.40 **022:** Skeletal Muscle And Motor Performance Changes In Vitamin D Deficient Mice And Response To VDRM Treatment.

Yanfei Ma, Indianapolis, USA

10.40 - 10.50 **023:** Beneficial Effect Of Plant Extract On pQCT And Mechanical Strength Of Ovariectomized Rats.

Ismene Dontas, Athens, Greece

10.50 - 11.00 **024:** The Distribution Of Tenocytes In Achilles Tendons From Normal And Obese Rats.

Louise Way, Sheffield, UK

11.00 - 11.10 **025:** A Model For Neuronal Regulation Of Heterotopic Ossification.

Corinne Sonnet, Houston, USA

11.10 - 11.50 **Training Induced Changes in Structural and Mechanical Properties of the Tendon.**

Olivier R. Seynnes, Institute for Biomedical Research into Human Movement and Health, Manchester Metropolitan University, Manchester, UK

12.00 - 13.30 **Lunch**

13.30 - 16.00 **Session 6: PHYSICAL EXERCISE**

Co-chairs: Eckhard Schönau / George Lyritis

13.30 - 14.00 **Mechanical Adaptation of the Muscle System**

Wilhelm Bloch, Department of Molecular and Cellular Sport Medicine, German Sport University Cologne, Germany

14.00 - 14.10 **026:** Preventative Effect Of Exercise Against Falls In The Elderly: A Randomized Controlled Trial.

Jun Iwamoto, Tokyo, Japan

14.10 - 14.20 **027:** Association Between Different Domains Of Physical Activity And Osteoporotic Fractures.

Alireza Moayyeri, Cambridge, UK

14.20 - 14.30 **028:** Muscle And Bone Acquisition In Young Top Table Tennis Players: Dominant Versus Non-Dominant Forearm.

Inge Roggen, Brussels, Belgium

14.30 - 14.40 **029:** Lower Limb Geometry And Performance In Elite Sprinters.

Kirsten Albracht, Cologne, Germany

14.40 - 14.50 **030:** Physical Training Increases Osteoprotegerin In Postmenopausal Women.

Ingrid Bergström, Stockholm, Sweden

14.50 - 15.00 **031:** Analysis Of Risk Factors Of Falling In A Geriatric Population.

Christos P. Zafeiris, Athens, Greece

15.00 - 15.10 **032:** Greek Guidelines Of Hellenic Institution Of Osteoporosis With Respect To The Exercise Of Osteoporosis And Falls.

Yannis Dionyssiotis, Rhodes, Greece

15.10 - 15.40 **Coffee Break**

15.40 - 16.40 **Amgen Symposium**

RANK-Ligand inhibition as a new therapeutic option for osteological disease.

Dieter Felsenberg, Centre for Muscle and Bone Research, Charité - Campus Benjamin Franklin, Berlin, Germany

16.40 - 17.00 **General Assembly – Award Session**

19.00 **Dinner**

20.00 - 24.00 **Kölscher Abend: Conference Dinner and Dance with Live Band**

Sunday, May 23rd 2010

09.00 - 12.00 **Session 7: WHOLE-BODY VIBRATION THERAPY**

Co-chairs: Frank Rauch / Jörn Rittweger

09.00 - 09.30 **Vibration – Background.**

Harri Sievänen, Tampere, Finland

09.30 - 09.50 **Vibration – Physiological Effects.**

Jörn Rittweger, Cologne, Germany

09.50 -10.10 **Treatment of neurological disorders in children.**

Eckhard Schönau/Oliver Semler, Cologne, Germany

10.10-10.30 **Treatment of neurological disorders with the tilt table Galileo.**

Martin Runge, Esslingen, Germany

10.30 - 10.45 **Coffee Break**

10.45 - 11.15 **ISMNI Recommendations for Reporting Whole-Body Vibration Intervention Studies.**

Frank Rauch, Montreal, Canada

11.15 - 12.00 **Discussion on Recommendations**

12.00 **End of Meeting**

12.00 - 13.00 **Lunch**