

# Scientific Program of the 4<sup>th</sup> International Workshop on Musculoskeletal and Neuronal Interactions

**May 28<sup>th</sup> - 31<sup>st</sup>, 2004, Chalkidiki, Greece**  
Program Chairmen: J.A. Gasser, B. Noble and S. Miller

Meeting room: Gina Bachauer

## FRIDAY, MAY 28<sup>th</sup>, 2004

- 08:30-8:45 **Welcome**  
G.P. Lyritis, President ISMNI
- Session 1**
- 08:45-12:05 **Neuronal Interactions with Muscle and Bone**  
**Co-chairs:**  
Brendon S. Noble, Univ. of Edinburgh, Edinburgh, UK  
Geoffrey Goldspink, Royal Free and University College Medical School, London, UK
- 08:45-9:25 **Differential regulation of IGF-I splice variants in 3-D muscle cultures following mechanical loading**  
Umber Cheema, Royal Free and University College Medical School, London, UK
- 09:25-10:05 **ATP P2 receptors and regulation of bone effector cells**  
Jim Gallagher, University of Liverpool, Liverpool, UK
- 10:05-10:30 **Coffee Break**
- 10:30-10:45 **eNOS is required for mechanically-induced bone formation**  
Jade WM Chow, St George's Hospital Medical School, London, UK
- 10:45-11:25 **The role of glutamate transporters in bone cell signalling**  
Deborah Mason, Cardiff School of Biosciences, Cardiff, Wales
- 11:25-12:05 **Role of innervation in the control of bone remodelling: contribution to the bone response to mechanical loading?**  
Chantal Chenu, Royal Veterinary College, London, UK
- 12:05-13:30 **Lunch**
- Session 2**
- 13:30-16:55 **Molecular Basis of Bone Biology (Genes to Bone Strength)**  
**Co-chairs:**  
Timothy Skerry, Royal Veterinary College, London, UK  
Scott C. Miller, University of Utah, Salt Lake City, USA
- 13:30-14:10 **The high bone mass family - role of Wnt/LRP5 signalling in the regulation of bone mass**  
Mark Johnson Creighton University, Omaha, USA
- 14:10-14:50 **Bone phenotype and genetic background in sclerostosis patients - discovery of a novel bone anabolic target?**  
Wim Van Hul, University of Antwerp, Antwerp, Belgium

- 14:50-15:20 **Coffee Break**
- 15:20-15:35 **The role of FAS/CD95 in osteocyte death in bone**  
Giolanta Kogianni, University of Edinburgh Medical School, Edinburgh, Scotland
- 15:35-16:15 **Age-related loss of skeletal muscle function and gene response to muscle stretch**  
Geoffrey Goldspink, Royal Free and University College Medical School, London, UK
- 16:15-16:55 **Femoral Neck Fragility: Genes or Environment?**  
Nigel Loveridge, Addenbrooke's Hospital, Cambridge, UK
- 16:55- 17:25 **Loading simulation of lumbar spine vertebrae using the finite elements method and bone strength properties elaborated by means of nanoindentations**  
K.D. Bouzakis, S. Mitsi, A. Korlos, N. Michailidis, G. Kapetanios, P. Antonarakos, Thessaloniki, Greece
- 20:00 **Opening Ceremony**  
**Addresses**  
**Lecture: Ancient and Modern Olympic Games. Medical Care**  
Ch. Lolas
- Entertainment**
- 21:30 **Welcome reception**

## SATURDAY, MAY 29<sup>th</sup>, 2004

- Session 3**
- 08:30-12:50 **Muscle training for better performance - From the athlete to the elderly person**  
**Co-chairs:**  
Jörn Rittweger, Manchester Metropolitan University, Alsager, UK  
Marco Narici, Manchester Metropolitan University, Alsager, UK
- 08:30-09:10 **Physical Performance in Aging Elite Athletes - Challenging the limits of Physiology**  
Jörn Rittweger, Manchester Metropolitan University, Alsager, UK
- 09:10-09:50 **Physiological Effects of Resistance Exercise in the Elderly**  
Marco Narici, Manchester Metropolitan University, Alsager, UK
- 09:50-10:30 **Making muscles "stronger": Exercise, Nutrition, Drugs**  
Per Aagaard, University of Southern Denmark, Odense, Denmark

- 10:30-11:00 **Coffee Break**
- 11:00-11:40 **Exercise and aging effects on skeletal muscle cells**  
Mark S.F. Clarke, University of Houston, Texas, USA
- 11:40-12:20 **The physiology of stem cells and their potential for the elderly patient**  
Claire Stewart, Manchester Metropolitan University, Alsager, UK
- 12:20-12:50 **Trials in Osteoporosis: Applying Evidence to Clinical Practice**  
David J Hosking, City Hospital, Nottingham, UK
- 13:00-14:30 **Sattelite Symposium (Sponsored by Lilly)**  
**Osteoporosis treatment: From bone quality to fracture efficacy**  
**Chairman:** John Giovos
- **Bone Quality: New aspects**  
N. Tsakalagos
  - **Effects of raloxifene and teriparatide on bone quality and fracture risk reduction**  
D. Burr
  - **Management of patients with severe osteoporosis with teriparatide: From Clinical Trials to Clinical practice**  
J. Giovos
- 14:30-15:50 **Light Lunch (Sponsored by Lilly)**
- 15:30-17:30 **Break**
- 17:30-19:00 **Round Table Discussion: Bone Quantity - VS - Bone Quality Estimation and Significance in the Treatment's Strategy of Osteoporosis**  
**Chairman:** G. Kapetanios
- **Pathogenesis - Biomechanics of osteoporotic fractures**  
Th. Karahalios
  - **Why bone quality?**  
G. Skaradavos
  - **Strategy of osteoporosis management**  
G. Lyritis
- 19:00-20:30 **Sattelite Symposium (Sponsored by Novartis)**  
**New horizons in calcitonin treatment of Osteoporosis**  
**Chairman:** G. Lyritis
- **Calcium Revisited**  
P. Burckhardt
  - **Oral Calcitonin**  
M. Azria
  - **The use of calcitonin in Postmenopausal osteoporosis**  
G. Lyritis
  - **The use of calcitonin in Orthopaedics applications**  
Th. Karahalios
- 09:10-09:50 **HRT - Risks and Benefits**  
Juliet E. Compston, University of Cambridge, Cambridge, UK
- 09:50-10:05 **The osteolytic response resulting from the inoculation of <sup>41</sup>Luc 2000 mouse mammary carcinoma cells into the tibia of athymic nude mice is completely blocked by zoledronic acid**  
Jürg A. Gasser, Novartis Institutes for Biomedical Research, Basel, Switzerland
- 10:05-10:30 **Coffee Break**
- 10:30-10:45 **Musculoskeletal disuse in young healthy men: Experiences from the Toulouse long term bed rest and Berlin bed rest studies**  
Jörn Rittweger, Manchester Metropolitan University, Alsager, UK
- 10:45-11:00 **Skeletal adaptations in hemiplegic patients**  
Martin Runge, Aerpah-Kliniken Esslingen und Ilshofen, Esslingen, Germany
- 11:00-11:15 **Changes in bone structure in tetra- and paraplegic patients**  
Hans Schiessl, Stratec Medizintechnik, Pforzheim, Germany
- 11:15-11:45 **Discussion: Effect of immobilisation on muscle and bone function**
- 11:45-12:00 **Mechanical factors in the emergence of cartilage morphology**  
Felix Eckstein, LMU München, Germany
- 12:00-12:15 **2nd ISMNI Oscar and Poster Awards**
- 12:15-13:30 **Lunch**
- 13:30-16:00 **Poster session: Short communications**
- 13:30-13:40 **The effect of mechanical stimulation on osteocyte viability in bone**  
Brendon S. Noble, University of Edinburgh, Edinburgh, Scotland
- 13:40-13:50 **A selective estrogen receptor modulator (SERM) inhibits osteocytes apoptosis during estrogen loss. Implications for bone quality maintenance**  
Brendon S Noble, University of Edinburgh, Edinburgh, Scotland
- 13:50-14:00 **The antioxidant effects of estrogen and SERMs in the protection of osteocytes from oxidative stress induced cell death**  
Chistene Huber, University of Edinburgh, Edinburgh, Scotland
- 14:00-14:10 **A trophic anti-glucocorticoid action of HE2200**  
Urszula Orlinska, HollisEden Pharmaceuticals, Inc., San Diego, CA, USA
- 14:10-14:20 **The novel *in vivo* microCT in combination with pQCT is a powerful tool to monitor inflammation-induced bony lesions in a rat model of adjuvant arthritis**  
Jürg A. Gasser, Novartis Institutes for Biomedical Research, Basel, Switzerland
- 14:20-14:30 **Tomographic and mechanical evaluation of muscle-bone interactions in mice artificially selected for body conformation**  
Jose-Luis Ferretti, Natl Univ of Rosario, Argentina
- 14:30-14:40 **Necessity of immune recognition and control of a human organ stem cells circulating in blood as a monocyte, in order to avoid proliferating diseases**  
Marie-Louise Labat, UMR 956 Ecole Nationale Veterinaire d'Alfort (ENVA), France
- 14:40-14:50 **Spatial distribution of bone strength, cancellous and cortical bone parameters along the length of the radius in osteoporosis and reumatoid arthritis in comparison to normals. A mathematical model multislice analysis as assessed by pQCT**  
Panagiota Raptou, LRMSysystem, University of Athens, Greece

## SUNDAY, MAY 30<sup>th</sup>, 2004

### Session 4

- 08:30-11:45 **Clinical Session on Musculoskeletal Disorders**  
**Co chairs:**  
Dieter Felsenberg, Universitaetsklinikum Benjamin Franklin, Berlin, Germany  
Eckhardt Schönau, University of Cologne, Cologne, Germany
- 08:30-09:10 **Bone quality, understanding what matters**  
David Burr, Indiana University School of Medicine, Indianapolis, USA

- 14:50-15:00 **Image analysis of radiographs of cadaver proximal femora yield values for trabecular structural parameters that correlate well with 3d  $\mu$ CT measurements and with measurements of bone strength**  
 Claude Arnaud, Imaging Therapeutics, San Mateo, CA, USA
- 15:00-15:10 **Impact of eccentric exercise on areal BMD in female runners**  
 Eva Wulff Helge, University of Copenhagen, Denmark
- 15:10-15:20 **Cartilage damage and synovium changes in haemophilic arthropathy: evaluation with magnetic resonance imaging**  
 Pantelis E Makris, Aristotle University of Thessaloniki, Greece
- 15:20-15:30 **Bone mineral density after induction chemotherapy in children with acute lymphoblastic leukemia**  
 A. Tragiannidis, Aristotles University of Thessaloniki, Greece
- 15:30-15:40 **Spine stress state under brace effect and scoliosis treatment computer simulation**  
 J. Culik, Czech Technical University of Prague, Czech Rep
- 15:40-15:50 **DEXA assessment of muscle-bone relationships in humans. I. Reference study of the lean mass / BMC relationships in whole body and limbs of 2512 normal men and pre- and post-menopausal women**  
 Jose-Luis Ferretti, Natl Univ of Rosario, Argentina
- 15:50-16:00 **DEXA assessment of muscle-bone relationships in humans II. Validation study for a novel differential diagnosis between "disuse" and "systemic" osteopenias**  
 Jose-Luis Ferretti, Natl Univ of Rosario, Argentina
- 16:00-16:30 **Coffee Break**
- 16:30-18:30 **Poster viewing**
- 18:30-20:00 **Sattelite Symposium (Sponsored by Aventis)**  
**Risedronate: The bisphosphonate with the respect to bone quality**  
**Chairman:** Gr. Skaradavos

- **Are biphosphonates the same?**  
 Gr. Russel
  - **Treating osteoporosis with Risedronate: The clinician' s perspective**  
 Sp. Aslanides
- 21:00 **Farewell Dinner**

## MONDAY, MAY 31<sup>st</sup>, 2004

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### Session 5

- 08:30-11:45 **Tendons and Ligaments**  
**Co chairs:**  
 Webster S.S. Jee, University of Utah, Salt Lake City, USA  
 Cyril B. Frank, University of Calgary, Calgary, Canada
- 08:30-09:10 **Ligament Structure, Physiology and Function**  
 Cyril B. Frank, University of Calgary, Calgary, Canada
- 09:10-09:50 **What happens when tendons bend and twist? Proteoglycans**  
 Kathryn Vogel, University of New Mexico, Albuquerque, USA
- 09:50-10:05 **DEXA assessment of muscle-bone relationships in humans**
- III. Application study: Differential diagnosis between 'systemic' and 'mechanical' osteopenias in fractured pre- and post-menopausal women**  
 Jose-Luis Ferretti, Natl Univ of Rosario, Argentina
- 10:05-10:30 **Coffee Break**
- 10:30-11:10 **Resistance training in the elderly and its impact on the tendon**  
 Neil Reeves, Manchester Metropolitan University, UK
- 11:10-11:45 **General Assembly**
- 11:45-11:50 **Closing Remarks (G.P. Lyritis)**