



## Skeletal muscle in denervation, aging and cancer

Padova and Terme Euganee, Padua (Italy), March 15 - 17, 2013

Terme Euganee Conference Hall, Hotel Augustus, Viale Stazione 150 - 35136 Montegrotto Terme, Padova, Italy  
Phone +39 049 793 200 - Fax +39 049 793518 - [http://www.hotelaugustus.com/english/pages/hotel\\_augustus.php](http://www.hotelaugustus.com/english/pages/hotel_augustus.php) - E-mail: [info@hotelaugustus.com](mailto:info@hotelaugustus.com)

Organizers: H. Kern, S. Masiero, S. Merigliano, C. Reggiani and U. Carraro

### Friday March 15, 2013

Vallisneri Biology Complex, Aula B-Pt, University of Padua, Viale G. Colombo 3, Padua, Italy

9.00 Registration

09.30 **Workshop cirMYO** – L. Vitiello, U. Carraro, Chairmen

(15 min) Three ways to try and heal a diseased muscle: macrophages, exon skipping and cell transplant, E. Galletta, C. Saletti, S. Pigozzo, F. Galvagni, C. Bolego, L. Vitiello, Padua, Italy

(15 min) Congenital pseudo-myotonia in Chianina and Romagnola cattle and congenital myotonia in a New Forest pony: genetic homologs of human muscular diseases, D. Tiziano, R. Sacchetto, F. Mascarello., Padua, Italy

(15 min) Mitochondrial calcium signaling in the control of skeletal muscle homeostasis, C. Mammucari et al., Padua, Italy

(15 min) Skeletal muscle injury in Amyotrophic Lateral Sclerosis: effect or first cause? A. Nori, Padua, Italy

(15 min) Presynaptic neurotoxins and the degeneration and regeneration of motor axon terminals, M. Rigoni, Padua, Italy

(15 min) Water-environment as exercise setting to improve physical function in elderly, M. Bergamin, Padua, Italy

(15 min) Muscle tissue micro engineering, E. Serena, S. Zatti, N. Elvassore, Padua, Italy

(15 min) ER processing of skeletal muscle proteins, E. Bianchini, D. Sandonà, R. Betto, Padua, Italy

(15 min) Microgenomics of skeletal muscle fibers, F. Chemello, G. Lanfranchi, Padua, Italy

(15 min) Double face of autophagy in skeletal muscles during physical exercise, P. Grumati, Padua, Italy

Archivio Antico, Palazzo Bo, University of Padua, Via VIII Febbraio, Padua, Italy

13.50 **Openings**, Rosario Rizzuto, University of Padua, Department of Biomedical Sciences, Head

14.00 **Myology Lectures\*** – Ugo Carraro, Carlo Reggiani, Chairmen

14.00 **Rehabilitation studies in denervation, aging and oncology**, Helmut Kern, Wilhelminenspital, Wien, Austria

14.40 **Transcriptional changes in muscle with exercise and disuse**, Jonathan Jarvis, Liverpool John Moores University, UK

15.20 **Patient results and mathematical methodology for EMG-based control of deep brain stimulation in Parkinson and Essential Tremor**, Daniel Graupe, University of Illinois, Chicago, IL, USA

16.00 **Bone and muscle assessment in patients undergoing total hip arthroplasty using HU based analysis**, Paolo Gargiulo, Landspítali, Reykjavík, Iceland

16.40 Coffee Break

17.00 **Perspectives in Rehabilitation of Oncologic Patients** – Helmut Kern, Stefano Masiero, Chairmen

(30 min) Mechanisms underlying exercise-mediated rescue of cachexia, Dario Coletti et al., University Pierre et Marie Curie Paris, France and Sapienza University, Rome, Italy

(30 min) Exercise-based rehabilitation in complicated patients with anemia, Leonida Compostella et al., Istituto Codivilla Putti, Cortina d'Ampezzo (Bl), Italy

(30 min) A subclinical myopathy in early colorectal cancer, Sandra Zampieri et al., University of Padua, Italy & LBI, Wien, Austria

(30 min) Rehabilitation treatment for postintervention lymphedema in breast cancer, Stefano Masiero et al., Rehabilitation Department, University of Padua, Hospital of Padua, Italy

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20.30 Dinner

21.30 **Organizing Meeting of the ejtm/BAM On-Line Advisory Board**

\*Myology Lecture Neural injury and regeneration: Accelerating axon growth after nerve injury, Tessa Gordon, Division of Plastic & Reconstructive Surgery, The Hospital for Sick Children, Toronto, Canada  
Due to obligations in Canada, Prof. Tessa Gordon will lecture to doctorate students and mentors next May 2013



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### Saturday March 16, 2013

Terme Euganee Conference Hall, Hotel Augustus, Montegrotto Terme, Padova, Italy

09.00 **Workshop Interreg IVa "Mobility in elderly"** – Helmut Kern, Marco Sandri, Chairmen

(30 min) Progressive un-coupling of mitochondria from calcium release units in ageing: implications for muscle performance, Feliciano Protasi, Chieti University, Italy

(30 min) Decades of high level physical activity delay age-related decay by increasing reinnervation of skeletal muscles, Sandra Zampieri et al., University of Padua and LBI, Wilhelminenspital, Wien, Austria

(30 min) Effects of electrical stimulation and strength training with proprioceptive stimulation on selected strength and functional parameters in elderly, Jan Cvecka et al., Faculty of Physical Education & Sport, Comenius University, Bratislava, Slovakia

(30 min) The effect of strength training on balance in elderly, Nejc Sarabon, University of Primorska, Science and Research Centre, IKARUS, Koper, Slovenia

11.00 Coffee Break

11.30 **Interreg IVa – Molecular Biology** – Jonathan Jarvis, Sergio Adamo, Chairmen

(30 min) The power of mitochondrial shaping machinery in controlling muscle mass, Marco Sandri, Dept. Biomedical Sciences, University of Padua, Italy

(30 min) The role of cytokine IL-6 in the physiopathology of skeletal muscle, Antonio Musarò, Sapienza University, Rome, Italy

(30 min) The role of the Mitochondrial Calcium Uniporter (MCU) in skeletal muscle trophism, Cristina Mammucari, Gaia Gherardi, Anna Raffaello, Rosario Rizzuto, Dept. Biomedical Sciences, University of Padua, Italy

13.00 Lunch, 14.00 **Poster Session** & Cycling Exercise

15.00 **Interreg IVa - Perspectives in ageing and beyond** – Antonio Musarò, Feliciano Protasi, Chairmen

(30 min) The contribution of stem cell therapy to skeletal muscle remodelling in heart failure, Giorgio Vescovo, Vicenza General Hospital, Italy

(30 min) Epigenetic signature during differentiation of presomitic satellite cells, Tiziana Pietrangelo, et al., Dept. Neurosciences and Imaging, University G. d'Annunzio Chieti-Pescara, Chieti, Italy; Interuniversity Institute of Myology (IIM); Interdepartmental Stem Cell Institute, Leuven, Belgium; Dept Experimental Veterinary Sciences, University of Padua, Italy

(30 min) Exertional heat stroke: understand the molecular mechanisms to develop therapeutic interventions, Feliciano Protasi, Chieti University, Italy

17.00 Coffee Break

17.20 **Workshop Rise2-Italy** – Stefano Masiero, Helmut Kern, Chairmen

(20 min) Muscle reinnervation in difficult-to-stimulate complete Conus-Cauda Syndrome, Emiliana Bizzarini, et al., Udine, Italy

(20 min) Dynamic echomyography of skeletal muscle demonstrates that h-b FES in peripheral denervation does not hamper muscle reinnervation, Riccardo Zanato, et al., Padova, Italy

(20 min) Three years post therapy RISE patient follow up, Thordur Helgason, et al., Reykjavík, Iceland

(20 min) Clinical effects of the exercise therapy in Amyotrophic Lateral Sclerosis patients, Antonio M.ericco, et al., Ospedale San Camillo, Venice, Italy

(20 min) A walking aid for unilateral tibialis anterior peripheral denervation, Andrea Marcante, et al., Padova, Italy

19.30 Dinner

21.00 **Organizing Meeting of the 2013 Autumn Padua Muscle Days**

Saturday March 16, 2013 & Sunday March 17, 2013

14.00 **Posters** – Libero Vitiello and Paolo Gargiulo, Chairmen



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### Sunday March 17, 2013

Terme Euganee Conference Hall, Hotel Augustus, Montegrotto Terme, Padova, Italy

- 09.00 **MED<sup>®</sup>EL Workshop FES in Reinnervating Muscle, Session I** - Richard J Piercy, Francesco Mascarello  
(30 min) How to stimulate muscle respecting its inherent adaptive capacity, *Jonathan Jarvis, Liverpool John Moores University, UK*  
(30 min) Neuromuscular pathology in equine recurrent laryngeal neuropathy, *Richard Piercy, Royal Veterinary College, London, UK*  
(30 min) Hounsfield based analysis of posterior cricoarytenoid muscles undergoing Functional Electrical Stimulation, *Paolo Gargiulo, Jon Cheetham, Melissa Kenny, Norm G Ducharme, Landspítali University Hospital of Iceland, Reykjavik University, and College of Veterinary Medicine Cornell University, Ithaca, NY, USA*
- 10.30 Coffee Break
- 10.45 **MED<sup>®</sup>EL Workshop FES in Reinnervating Muscle, session II** - Justin Perkins, Roberto Stramare  
(15 min) Expression of myosin heavy chain isoforms in laryngeal muscles in comparison with skeletal and special muscles, *Lisa Maccatrozzo, Luana Toniolo, Pasqua Cancellara, Carlo Reggiani, Francesco Mascarello, Dept. Comparative Biomedicine & Nutrition, and Dept. Biomedical Sciences, University of Padua, Italy*  
(15 min) Wavelet analysis of laryngeal EMG for estimation of different fibre type activation in normal horses and horses with a distal axonopathy, *Justin Perkins, Emil Olsen, Jon Cheetham, Marta Cercone, Richard J Piercy, Norm G Ducharme, Royal Veterinary College, London, UK and Departments of Clinical Sciences, College of Veterinary Medicine, Cornell University, Ithaca, New York, US*  
(15 min) Speckle analysis of transoesophageal ultrasound in laryngeal muscles during resting breathing and nerve stimulation, *Sarah A Jones, Rosie Carruthers, Royal Veterinary College, London, UK*  
(30 min) Echogenicity, contraction and perfusion properties of facial muscles by US Functional Echomyography, *Gerd Fabian Volk, Maik Sauer, Martin Pohlmann, Mira Finkensieper, Rosemarie Fröber, Orlando Guntinas-Lichius, Klinik und Poliklinik für Hals-, Nasen- und Ohrenheilkunde; and Institut für Anatomie / Anatomie I, Universitätsklinikum Jena, Germany*
- 12.30 Lunch & 13.30 Poster Session
- 14.30 **Electrical Stimulation in neurological disorders** – Stefano Masiero, Daniel Graupe, Chairmen  
(30 min) Implantable pulse generators for experimental studies – stimulation pattern flexibility versus technological limits, *H. Lanmueller, M. Bijak, E. Unger, Medical University of Vienna, Austria,*  
(20 min) The short-term effects of antenna insulation thickness on path losses in wireless telemetry implants at microwave frequencies *Lukas Kneisz, Michael Schermann, Ewald Unger, Michael Haller, Matthias Krenn, Winfried Mayr, Medical University of Vienna, Austria*  
(20 min) A neuroprosthesis for finger movement rehabilitation, *Thordur Helgason, et al., Reykjavík, Iceland*  
(20 min) Current versus voltage controlled electrical stimulation of the anterior thigh, *Matthias Krenn, et al., Medical University of Vienna, Austria; Instituto Tecnológico y de Estudios Superiores de Monterrey, Mexico; LBI of Electrical Stimulation & Physical Rehabilitation, Dept. Physical Medicine and Rehabilitation, Wilhelminenspital, Vienna, Austria*
- 16.00 Coffee Break
- 16.30 **Muscle Disorders** – Fabrizio Bruschi, Ugo Carraro, Chairmen  
(30 min) Cytoskeleton in injured skeletal muscles, *Roberta Squecco, Fabio Francini, Dept Physiological Sciences, University of Florence, Italy*  
(30 min) The myositis caused by *Trichinella* spp. *Fabrizio Bruschi, Dept. Translational Research, University of Pisa, Italy*  
(30 min) Myotilin, Desmin and MHC-I expression in muscular disorders with protein aggregates, *Giovanna Cenacchi, Bologna, Italy*  
(30 min) Caveolinopathy – Case histories of four persons, in two families, *István Gáti, Olof Danielsson, Vrethem Magnus, Depts Neurology and Clinical Neurophysiology, Linköping University, Linköping, Sweden*
- 18.30 U. Carraro - Adjö, Arrivederci, Auf Wiedersehen, Aurevoir, Búcsú, Despedida, Poslovite, Sjámst, See You to 2013 Autumn Padua Muscle Days



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**Saturday March 16, 2013 & Sunday March 17, 2013**

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### 14.00 Posters – Libero Vitiello, Paolo Gargiulo, Chairmen

- 01 EMG of upper airway muscles in horses: quantitative and spectral analysis of thyrohyoid muscle activity during exercise, *Marta Cercone, Cornell University, Ithaca, NY, USA*
- 02 Combined Sihler nerve stain & arterial description for representation of neuro-arterial-architecture, *Martina Fersterra, Christoph Mülling, Veterinär-Anatomisches Institut, Tierkliniken, Leipzig, Germany*
- 03 3D distribution of electrical field of multipolar intra-muscular FES stimulation electrodes in perfused horse (+ canine) larynx model by robotic computer controlled needle potential screening acquisition system, *Verena Tast, Christoph Mülling, Veterinär-Anatomisches Institut, Tierkliniken, Leipzig, Germany*
- 04 Assessment of FES-threshold and optimal stimulation parameters in horses with naturally occurring recurrent laryngeal neuropathy RLN, *Céline Mespouhès-Rivière Chirurgie – Clinique équine ENVA, Maisons-ALFORT, Paris, France*
- 05 Nuclear wandering and nuclear grouping in denervated skeletal muscle, *Nicoletta Adami et al., Translational Myology Lab, Dept. Biomedical Sciences, University of Padua, Italy*
- 06 Sub-clinical denervation/reinnervation events are contributing mechanisms of skeletal muscle atrophy in aging. *Ugo Carraro et al., Translational Myology Lab, Dept. Biomedical Sciences, University of Padua, Italy*
- 07 Strategies to accelerate muscle reinnervation across traumatic nerve gaps. *Vincenzo Vindigni, Luca Lancerotto, Simone Mosole, Nicoletta Adami, Sandra Zampieri, Ugo Carraro, Riccardo Zanato, Roberto Stramare, Stefano Masiero, Franco Bassetto, Plastic Surgery Clinic and Physiatric Unit of the Neurosciences Dept.; Radiology Unit of the Medicine Dept.; Translational Myology Lab, University of Padua, Italy*
- 08 Training protocols of home-based electrical stimulation for the functional recovery of permanently denervated human muscles. *Stefan Loeffler et al., Ludwig Boltzmann Institute of Electrical Stimulation and Physical Rehabilitation, Vienna, Austria*
- 09 A case report of functional recovery in peripheral denervation, *Marcante Andrea, et al., Dept. Neurosciences, Physiatric Unit, University of Padua, Italy*
- 10 Acquired multifocal myoclonus. Case histories, *István Gáti, Olof Danielsson, Göran Leijon, Valeria Szekeres, Vrethem Magnus, Linköping University, Linköping, Sweden, and Division of Neurology, Outpatients Department of Pécs, Pécs, Hungary*
- 11 Age-related decay of muscle power in running, jumping and throwing masters athletes, *Paolo Gava, et al., Translational Myology Lab, Dept. Biomedical Sciences, Padua University, Italy*
- 12 Clinical effects of the exercise therapy in Amyotrophic Lateral Sclerosis patients, *Merico A, Lacatena A, Rossi S, Tasca E, Cudia P, Piccione F, Ospedale San Camillo, Venice, Italy*