Muscle Decline in Aging and Neuromuscular Disorders
Mechanisms and Countermeasures

Terme Euganean, Padova (Italy), April 13 - 16, 2016

Hotel Augustus, Viale Stazione 150 - 35136 Montegrotto Terme (Padova), Italy & Villa dei Vescovi, Luvigliano di Torreglia (Padova), Italy
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Organizers: Ugo Carraro, Helmut Kern, Christiaan Leeuwenburgh, Werner Lindenthaler, Francesco Piccione, Carlo Reggiani, Marco Sandri

WEDNESDAY April 13, 2016 - Hotel Augustus, Viale Stazione 150, Montegrotto Terme (Padova), Italy

17.00 Exercise and ES in premature aging and aging: Tutorial and get-together, H Kern, U. Carraro, Chairs
17.00 FES in Aging, Helmut Kern, Vienna, Austria
17.30 Bed-Gym and FES: Fighting muscle weakness by take-home strategies, Ugo Carraro, et al., Venice, Italy
18.00 Experiences and suggestions of compliant co-participants, To be announced 20.00 Dinner

THURSDAY April 14, 2016 - Hotel Augustus, Viale Stazione 150, Montegrotto Terme (Padova), Italy

9.00 Workshop “Neuromuscular adaptations to exercise and ES in aging – I”, C Leeuwenburgh, S Schiaffino, Chairs
Introduction by S Schiaffino, Padova, Italy
10.00 Intrinsinc and extrinsic control of circadian gene expression in skeletal muscle, Kenneth A. Dyar, Muenchen, Germany
10.40 Workshop “Diaphragm, structure and function” – C Leeuwenburgh and C Reggiani, Chairs
10.40 Bench to bedside research on critical illness myopathy (CIM) and ventilator induced diaphragm muscle dysfunction (VIDD): Underlying mechanisms and intervention strategies, Lars Larsson, Stockholm, Sweden
11.20 A finite element approach to diaphragm mechanics: multiscale modeling from fiber to whole muscle, Lorenzo Marcucci, Piero Pavan, Luana Toniolio, Lina Cancellara, Arturo Natali, Carlo Reggiani, Padova, Italy
11.40 Plasticity of mouse diaphragm: aging and response to endurance training, Silvia Quartesan, Lina Cancellara, Sara di Siena, Cinzia Calabrese, Fabio Naro, Carlo Reggiani, Padova, Italy
12.00 Diaphragm denervation-hypertrophy is also present in oldest rats, Daniela Danieli, Germinario E, et al. Padova, Italy
14.30 Workshop “Neuromuscular adaptations to exercise and ES in aging – II”, Lee Sweeney, Marco Sandri, Chairs
14.40 CIR-Myo Lecture 1: Autophagy and the control of neuromuscular junction, Marco Sandri, Padova, Italy
15.30 Role of MuRF1 and autophagy for the maintenance of neuromuscular junction, Rüdiger Rudolf, Mennheim, Germany
16.00 CK2-dependent phosphorylation in skeletal muscle regulates neuromuscular junction stability and mitochondrial homeostasis, Said Hashemolhosseini, Erlangen, Germany
16.30 Spatial distribution of neuromuscular junction components. Pretzels are more complex than we have anticipated, Thomas Prosynski, Warsaw, Poland
17.00 Mitochondrial Alarmins are key intercellular signals in the degeneration &regeneration of the Neuromuscular Junction, Cesare Montecucco, Padova, Italy
17.45 CIR-Myo – Lectures - Introduction by Gerta Vrbova, London, UK
18.00 Lecture 2: Difference in muscular adaptation due to regular exercise or through electrical stimulation, Christiaan Leeuwenburgh, University of Florida, Gainesville, FL, US
20.00 Dinner

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FRI DAY April 15, 2016

Muscle Meeting in Villa Veneta - Villa dei Vescovi, Luvigliano, Euganean Hills

08.30 Courtesy Bus to Luvigliano di Torreglia, Euganean Hills (Padova)
09.00 Openings - Marco Sandri, CIR-Myo, Head, Rosario Rizzuto, University of Padua, Rector, Italy
Annalena Venneri, IRCCS Fondazione San Camillo Hospital, Science Director, Venice-Lido, Italy
09.15 **CIR-Myo – Lectures 3** - Introduction by Carlo Reggiani, Padova, Italy
09.30 Therapeutic Targets for Muscular Dystrophy, Lee Sweeney, University of Florida, Gainesville, US
10.20 Handling growth and glucose through muscle IGF-1, Elizabeth Barton, University of Florida, Gainesville, FL, US
10.50 Therapeutic approach through liposomes carrying antioxidant in skeletal muscle, Rosa Mancinelli et al., Chieti, Italy
11.10 Molecular determinants of triadic junction formation, Enea Liguori, V Sorrentino et al., Siena, Italy
11.30 Role of CASQ1 mutations in human skeletal muscle diseases, Valeria Del Re, V Sorrentino et al., Siena, Italy
11.50 Tat-MyoD fused proteins and myogenic fate of equine MSC, Tiziana Martinello et al., Padova, Italy
11.30 Workshop **HIP** **“Rehabilitation strategies for neuromuscular disorders” – H Kern, U Carraro, Chairs**
11.30 Calcium Entry Units (CRUs): discovery of new intracellular junctions that mediate Store-Operated Ca²⁺ Entry (SOCE) in skeletal muscle, Simona Boncompagni, Chieti, Italy
11.50 Novel insights into skeletal muscle function by mechanochemistry in health and disease, Fabio Esposito, Milan, Italy
12.10 **CIR-Myo-Lecture 4** – Deep Brain Stimulation in Parkinson and dystonia, Angelo Antonini, Venice/Padova, Italy
13.00 Lunch
14.00 **CIR-Myo-Lecture 5** – Link between malignant hyperthermia (MH) and environmental heat stroke (EHS): just a medical hypothesis? Feliciano Protasi, University of Chieti, Italy
14.40 Workshop **NI** “Mobility in elderly”: Molecular approaches – H Kern, A Musarò, Chairs
14.40 Insights into the oxidative stress-mediated sarcopenia and dismantlement of NMJ, Antonio Musarò, Rome, Italy
15.10 Exercise in sedentary elders: effects on muscle and MCU expression, Sandra Zampieri et al., Padova/Vienna
15.50 ERG1α K⁺ Channel Modulates NFKB Activity in Atrophying Skeletal Muscle, Amber Pond, Southern Illinois University, Carbondale, US
16.10 Molecular adaptations of the sarcoplasmic reticulum to E-Stim in Aging, Simone Mosole et al., Padova, Italy
16.30 **“Mobility in aging and neuromuscular impairments” Stefano Masiero, Francesca Piccione, Chairs**
16.30 Power dacay in elderly: Lessons from Master athletes, Paolo Gava et al., Padova, Italy
16.50 ES in neuromuscular impairments, educational case reports, Andrea Marcante et al., Venice, Italy
17.10 Nonpharmacologic therapies for Lumbar Sacral Radicular Syndrome: a ten-year review, A. Musumeci et al., Padova, Italy
17.30 Inflammation in the gut and chronic low back pain (CLBP). Physiopathology applied to muscle pain and neurodegeneration, Sergio Veneziani et al., Bergamo, Italy
17.40 **CIR-Myo-Lecture 6** – Muscle and bone assessed by Color CT, gait analysis and EMG, Paolo Gargiulo, Reykjavik, Iceland
18.30 Courtesy Return Bus to Hotel Augustus, Terme Eugane (Padova)
20.00 Dinner
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SATURDAY April 16, 2016

Hotel Augustus, Viale Stazione 150, Montegrotto Terme (Padova), Italy

09.00  CIR-Myo-Lecture 7 – The RISE Project: roots, outcomes, byproducts, Helmut Kern, Vienna, Austria
09.40  MED-EL Workshop: Functional Rejuvenation in Aging, Werner Lindenthaler, Winfried Mayr, Chairs

09.40  Electrical muscle stimulation enhances functional recovery following nerve transaction in small (rats), human-like (dogs) and large animal (horse) model, Mike P Willand, Toronto, Ontario, Canada
10.00  Establishing a hypertrophy model in rats using ‘SpillOver’ stimulation to cause co-contraction, Jonathan C. Jarvis, et al., Liverpool/Vienna
10.40  Investigating Energy Efficiency for different Pulse shapes and electrode arrangements to activate motor neurones, Martin Schmoll, Jonathan C. Jarvis
11.00  coffee break
11.20  MiniVStim18B: A highly configurable battery powered FES implant for long-term implantation in small animals, Manfred Bijak, Ewald Unger, Michael Haller, Martin Schmoll, Jonathan C. Jarvis, Hermann Lammueller, Vienna/Liverpool
11.40  Chronic electrical stimulation in rodents: Results of a feasibility study, Michael Karbinger, Graz
12.10  Chronic neurostimulation for treatment of age related laryngeal muscular atrophy, Markus Gugatschka, Graz/Stockholm
13.00  Lunch
14.30  MED-EL Workshop: ES in Neuromuscular Disorders, Jonathan C. Jarvis, Feliciano Protasi, Chairs
14.30  Method for selective surface stimulation of denervated muscles in the larynx, Berit Schneider-Stickler, Matthias Leonhard, Lukas Kneisz, Winfried Mayr, Vienna/Innsbruck
15.00  Determining optimal settings for selective surface stimulation in order to recruit paralyzed facial muscles under non painful conditions, Gerd Fabian Volk, Orlando Guntinas-Lichius, Tobias Schmid, ENT Jena; Lukas Kneisz, Matthias Ladurner, MEDEL Innsbruck; Winfried Mayr, Vienna
15.30  Round Table on ES-induced muscle damage, Discussant: Jonathan C. Jarvis, Winfried Mayr, Ugo Carraro, Justin Perkins
16.00  coffee break
16:30  Vagus stimulation and other ES managements Jonathan C. Jarvis, Francesco Piccione, Chairs
16:30  Percutaneous Auricular Vagus Nerve Stimulation, Eugenijus Kaniušas, Stefan Kampusch, Jozsef Constantin Széles, Padova, Italy
17.00  Functional electrical stimulation: a possible strategy to improve muscle function in Central Core Disease? Pierpaolo Iodice, et al., Chieti, Italy
17.40  Evaluation of tSCS treatment for the alleviation of lower limb spasticity, Thordur Helgason et al., Reykjavik, Iceland
18.00  Biomarkers and functional tools correlations in aging and neuromuscular disorders, Stefano Masiero, Marco Patruno, Chairs
18.00  Biomarkers of bone, muscle and PNS plasticity for neurorehabilitation, Barbara Zavan et al., Padova, Italy
18.20  Intracellular Ca²⁺ decoders as biomarkers of skeletal muscle plasticity in neurorehabilitation, Alessandra Nori et al., Padova, Italy
18.40  Conclusive Remarks, Winfried Mayr, Vienna Austra
19.00  U. Carraro - Arrivederci, Auf Wiedersehen, See You to 2017 PaduaMuscleDays  20.00  Dinner