



2020 PaduaMuscleDays, March 18-21, Montegrotto and Padova, Italy

# MOBILITY MEDICINE

## 30 YEARS OF TRANSLATIONAL RESEARCH

Euganei Hills, Padova (Italy), March 18 - 21, 2020

Hotel Augustus, Montegrotto, Euganei Hills (Padova), Italy &amp; University of Padova Archivio Antico, Padova, Italy

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Organizers: Ugo Carraro, Helmut Kern, Christiaan Leeuwenburgh, Marco Narici, Feliciano Protasi, Marco Sandri

**WEDNESDAY March 18, 2020** Hotel Augustus, Montegrotto, Euganei Hills, (Padova), Italy

### 17.30 Registration & Guided Tour to Posters

- 19.00 Wine Tasting on the top of the Hotel Augustus Hill  
21.30 IMMS, IMMA or EMMA?: Introduction and perspective activities



### Posters always on display

1<sup>st</sup> Guided Tour to Posters: Wednesday March 182<sup>nd</sup> Guided Tour to Posters: After-lunch, Saturday March 21

- P1** Detection of SMN protein from peripheral human blood and fibroblasts as a biomarker for spinal muscular atrophy, Reiko Arakawa, Department of Genomic Medicine, NCGM, Tokyo, Japan
- P2** A role for fermented papaya in preventing and treating aging, through a potent and systemic antioxidant effect, Mariantonia Logozzi et al., Istituto Superiore di Sanità, Rome, Italy
- P3** Effect of age on muscle spindles in mouse triceps surae, Chenglei Fan et al., Dept. Neurosciences, University of Padova, Italy
- P4** Master World Records reveal minimal gender differences of aging performance decay, Paolo Gava et al., A&CM-C Foundation for Translational Myology, Padova, Italy
- P5** Commitment to reproducibility in mitochondrial respiration studies with permeabilized muscle fibers, Carolina Doerrier, et al. Oroboros Instruments, Innsbruck, Austria
- P6** Blood contamination of human mouth fluid: a non-invasive approach for serological analyses in old and very old persons, Barbara Ravara, et al., A&CM-C Foundation, Padova, Italy
- P7** Full-Body In-Bed Gym, a mandatory lifestyle for older and oldest persons, Ugo Carraro, et al., CIR-Myo-Myology Centre - DBS & DNS Padua University and A&CM-C Foundation for Translational Myology, Padua, Italy
- P8** A nanotechnological device during a postural exercise program in patients with multiple sclerosis: a pilot study, Valerio Giustino, et al. University of Palermo, Italy
- P9** Factor affecting athletic performance and bone resorption in preadolescence gymnasts, Sara Baldassano, et al. STEBICEF and SPPEFF Departments, University of Palermo, Italy
- P10** Prospects for the use of Cannabis-based drug in combination with physical activity in the symptom treatment of patients with multiple sclerosis, Patrizia Proia et al. Departments of PESHM, STEBICEF and BiND, University of Palermo, Italy.



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**THURSDAY March 19, 2020**

Department of Biomedical Sciences, Padova University, Italy  
Via Ugo Bassi, 58/B 35131 Padova, Italy (Walking and car entrance)

**8.30 Complimentary Bus to Department of Biomedical Sciences, University of Padova**

9.00 Coffee and Display of Scientific & Analytical Equipments: Automated Live Cell Imaging

**9.30 SARCOPENIA AND AGING, SESSION I**

**Nutritional, Pharmacological and Physiological Interventions**

Christiaan Leeuwenburgh, Ugo Carraro, Chairs

9.30 Effects of epicatechins on endothelial, mitochondrial and physical function: Clinical Trial Results. *Christiaan Leeuwenburgh, University of Florida, Gainesville, FL, USA*

10.00 The impact of Fermented Papaya Product (FPP) on cognitive and brain function in older adults: a pilot clinical trial, *Adam J. Woods, University of Florida, Gainesville, FL, USA*

10.30 FPP for Aging and Cancer prevention, *Stefano Fais, Istituto Superiore di Sanità, Rome, Italy*

11.00 Dietary Phosphorus Overload Aggravates the Phenotype of the Dystrophin-Deficient mdx Mouse. Therapeutic effect of calcium and Vitamin C on muscle degeneration in elevated Pi or at low temperature cultures, *Ryoichi Matsuda, Department of Life Sciences, University of Tokyo, Japan*

11.30 Natural products regulate agrin-induced acetylcholine receptor clustering, *Masayuki Arakawa, Microbial Chemistry Research Foundation, Tokyo, Japan*

12.00 Challenge of Osato Research Institute for Preventive Medicine with the aim to reduce medical costs in super-aging societies, *Yuki Hayashi, Gifu, Japan*

12.30 Lunch and Display of Scientific & Analytical Equipments: Automated Live Cell Imaging

**13.50 Commitment to reproducibility in targeting mitochondrial respiratory control: basic and advanced applications of the O2k-FluoRespirometer**

13.50 Introduction, *Fabio Di Lisa, Dept. Biomedical Sciences, University of Padova, Italy*

14.00 O2k-Workshop on high-resolution respirometry with demo in permeabilized muscle fibers, *Erich Gnaiger, Carolina Doerrier, Marco Di Marcello, Oroboros Instruments*

15.30 Methods to monitor mitochondrial activity in skeletal muscle, *Gaia Gheradi, et al., Department of Biomedical Sciences, University of Padova, Italy*

15.45 Break and Scientific & Analytical Equipments: Automated Live Cell Imaging

**THURSDAY March 19, 2020**

Department of Biomedical Sciences, Padova University, Italy  
Via Ugo Bassi, 58/B 35131 Padova, Italy (Walking and car entrance)

**16.00 SARCOPENIA AND AGING, SESSION II****Nutritional, Pharmacological and Physiological Interventions**

Russ Hepple, Paolo Bernardi, Chairs

- 16.00** Mitochondrial Permeability Transition causes muscle atrophy in advanced age, *Russel T. Hepple, University of Florida, Gainesville, FL, USA*
- 16.30** Neuromuscular activity of *C. elegans* and zebrafish models of *FBXL4*-based mitochondrial respiratory chain disease: translational platforms for drug screening, *Manuela Lavorato et al., Department of Pediatrics, The Children's Hospital of Philadelphia, Philadelphia, PA, USA*
- 16.50** Impact of ageing and exercise on the neuromuscular junction, *Marco Narici, CIR-Myo & Department of Biomedical Sciences, Padua University, Italy*
- 17.10** Neurohypophyseal hormones and skeletal muscle: a tale of two faces, *Sergio Adamo, Sapienza University of Rome, Italy*
- 17.30** Single-cell analysis revealed the importance of non-coding RNAs for muscle plasticity, *Stefano Cagnin, Dept of Biology, University of Padova, Italy*
- 17.50** Prospects for exercise training in the absence of muscle IGF-1, *Elisabeth R. Barton, Dept. of Applied Physiology & Kinesiology, University of Florida, Gainesville, USA*
- 18.10** A possible strategy to prevent skeletal muscle atrophy induced by immobilization, *Paula Tavares, Faculty of Sport Sciences and Physical Education, University of Coimbra, Portugal*
- 18.45 Complimentary Bus to Hotel Augustus, Terme Euganee (Padova), Italy**
- 20.00** Dinner in Hotel Augustus
- 21.30** European Mobility Medicine Association (EMMA): Institution and future events



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**FRIDAY March 20, 2020***Archivio Antico, Palazzo Bo, University of Padua, Italy***8.30 Complimentary Bus to Padova University Palazzo Bo, via VIII Febbraio, Padova****9.00 Openings and Translational Lectures***Prof Marco Sandri, UniPd Department of Biomedical Sciences, Head**Prof. Marco Narici, UniPd Myology Centre (CIR-Myo), Head**Prof. Raffaele De Caro, UniPd Department of Neurosciences, Head***9.15 Translational Lecture 1.** Ear Stimulation, from Padua 1600 to cochlear implants, *Alessandro Martini, Neuroscience Department, Padua University, Italy***9.45 Translational Lecture 2.** The genetic underpinning of  $V_{O2max}$  and trainability, *Hans Hoppeler, Anatomy Institute, University of Berna, Switzerland***10.20 SESSION III: News on EEG, EMS, FES, TMS and more,***Helmut Kern, Alessandro Martini, Chairs***10.20** Surface Electro Stimulation for the prevention of atrophy in denervated facial muscles, *Gerd Fabian Volk et al., ENT-Department, Jena University Hospital, Jena, Germany***10.40** Remediating age-related cognitive and physical decline with transcranial direct current stimulation (tDCS), *Adam J. Woods, University of Florida, Gainesville, USA***11.00** Using high density EEG to assess TMS treatment in patients with schizophrenia, *Paolo Gargiulo, et al., Biomedical and Neural Engineering, Reykjavík University, Iceland***11.20** Characterisation of diabetic myopathy by high density EMG, *Giuseppe De Vito, CIR-Myo & Dept. Biomedical Sciences, Padua University, Italy***11.40** Body mass excess, muscle mass, obesity and mitochondrial fitness, *Erich Gnaiger, Medical University of Innsbruck and Oroboros Instruments, Innsbruck, Austria***12.00** Label-free live imaging of mitochondrial dynamics and transplantation using Nanolive instruments, *Luca Clario, Media System Lab S.r.l., Macherio (MB), Italy***12.10** *Guided visit to the Anatomical Theater and the Galileo Galilei's Cathedra of Palazzo Bo, University of Padova***12.20** *Guided tour of Palazzo della Ragione***12.30** *Lunch in Piazza della Frutta, Bar Margherita*



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**FRIDAY March 20, 2020***Archivio Antico, Palazzo Bo, University of Padova, Italy***14.00 SESSION IV – Therapies for genetic diseases**, *Sweeney L, Tavian D, Chairs***14.00** Gene Therapies for Duchenne Muscular Dystrophy, *Lee Sweeney, Myology Institute, University of Florida, Gainesville, USA***14.20** To be announced, *Gillian Butler-Browne, Sorbonne Université, Paris, France***14.40** Mitochondria as targets in Duchenne Muscular Dystrophy, *Paolo Bernardi, Department of Biomedical Sciences, University of Padova, Italy***15.00** Relationship between ETFDH mutations, expression levels of serum myomiRNAs and response to treatment in MADD patients, *Sara Missaglia, et al, Milan, Padova, Venice, Italy***15.10 SESSION V - Muscle Imaging**, *Feliciano Protasi, Marco Narici, Chairs***15.10** Discovery of Calcium Entry Units: when electron microscopy still counts, *Feliciano Protasi, Chieti University, Italy***15.30** HERG Expression in C2C12 Myotubes leads to upregulation of genes related to Interferon gamma, *Amber Pond, Southern Illinois University School of Medicine, USA***15.50** Formation of Tubular Aggregates in muscle: role of STIM1 and Orai1, *Simona Boncompagni, Chieti University, Italy***16.10** *Break***16.30 Clinical imaging of human muscles**, *Marco Narici, Paolo Gargiulo, Chairs***16.30** Skeletal muscle mechanics in the aging muscle: Advanced Fast MRI technologies provide insights into skeletal muscle dynamics and physiology, *Shantanu Sinha, University of California at San Diego, CA, USA***16.45** Bye, Bye Biopsy: Extracting muscle tissue composition and microstructure from Magnetic Resonance Imaging (MRI), initial validation to biopsy, and application to the aging muscle, *Usha Sinha, San Diego State University, San Diego, CA, USA***17.00** Biomarkers of muscle atrophy and of neuromuscular maladaptation during 10-day bed rest. *Marco Narici, CIR-Myo, Department of Biomedical Sciences, Padua University, Italy***17.20** Advances in imaging techniques for the study of human skeletal muscle in-vivo, *Martino Franchi, CIR-Myo & Department of Biomedical Sciences, Padua University, Italy***17.40** Variability and inter rater reliability of ultrasound imaging of fasciae/muscles, *Carmelo Pirri, et al., Dept. Neurosciences, University of Padova, Italy***18.00** **Translational Lecture 3.** Long term denervated muscles, FES, skin, mouth fluids and other old good friends, *Ugo Carraro, University of Padova, Italy***18.30 Complimentary Bus to Hotel Augustus****19.30** *Candle Dinner at the Hotel Augustus, Euganei Hills***21.30** *First Meeting of the European Mobility Medicine Association (EMMA): World partners*

**SATURDAY March 21, 2020**

Hotel Augustus, Montegrotto, Euganei Hills, (Padova), Italy

**9.00 SESSION VI – The Center of Active Aging - Helmut Kern, Chair**

- 9.00** Research in rehabilitation, past & future programs, *Helmut Kern, Wien, Austria*
- 9.20** Centre of Active Ageing: current status and update, *Stefan Loeffler, Department of Physical Medicine and Rehabilitation, Wilhelminenspital, Vienna, Austria.*
- 9.40** Centre of Active Ageing (Bratislava): current state and future activities, *Jan Cvecka, Faculty of Physical Education and Sports, Comenius University, Bratislava, Slovakia*
- 10.00** Speed-power based training in elderly and its potential for daily movement function enhancement, *Nejc Sarabon, University of Primorska, Faculty of Health Sciences, Izola, Slovenia*
- 10.20** 15 years of Vienna-Padova-Chieti collaboration: what did we learn, *Feliciano Protasi, University of Chieti, Italy*
- 10.40 Break

**11:00 SESSION VII – The Center of Active Aging, Sandra Zampieri, Simona Boncompagni, Chairs**

- 11.00** Signals from the niche to modulate muscle regeneration, *Antonio Musarò, Sapienza University of Rome, Italy*
- 11.20** Comparison of morphological and serological analyses of denervation biomarkers in skeletal muscle wasting conditions, *Sandra Zampieri, DiSCOG, University of Padova, Italy and Wien, Austria*
- 11.40** Skin and mouth fluids analyses to evaluate biological age in older and oldest persons, *Giovanna Albertin et al., Dept. Neuroscience, University of Padova, Italy*
- 12.00** Resistance training as supplement therapy in hypogonadal men, *Milan Sedliak, Faculty of Physical Education and Sports, Comenius University, Bratislava, Slovakia*
- 12.20 The Center of Active Aging – General discussion,** Helmut Kern, Ugo Carraro *Chair*  
Giovanna Albertin, Simona Boncompagni, Jan Cvecka, Cristian Hofer, Stefan Loeffler, Antonio Musarò, Marco Narici, Feliciano Protasi, Barbara Ravara, Jan Sarabon, Sascha Sajer, Milan Sedliak, Veronika Tirpakova, Sandra Zampieri

13.00 Lunch

**14.00 After Lunch Guided Tour to Posters**

**2020 PaduaMuscleDays, March 18-21, Montegrotto and Padova, Italy****SATURDAY March 21, 2020****Hotel Augustus, Montegrotto, Euganei Hills, (Padova), Italy.****14.40 SESSION VIII a – Mobility Disorders & Rehabilitation, U Carraro, G Fanò, Chairs**

- 14.40** Treatment of Central Core Disease with Functional Electrical Stimulation (FES): a Case Report, *Feliciano Protasi, University of Chieti, Italy*
- 15.00** Modulation of some vital functions in a patient with angina pectoris using transcutaneous auricular nerve stimulation, *Janez Rozman, et al, University of Ljubljana, Slovenia*
- 15.20** Medical Emergency in critical environment: Physical capacities of Emergency Team, *Francesco Coscia, Paola V. Gigliotti\*, Rezhna Adil Rasheed, Giorgio Fanò-Illic, Perugia, Italy*
- 15.40** Evaluation of sympathetic arousal by skin conductance measurement: A tool to optimize rehabilitation strategies? *Manfred Bijak, Center for Medical Physics and Biomedical Engineering, MedUni Vienna, Austria*
- 16.00** Predicting cardiovascular pathophysiology from a mid-thigh CT image, *Paolo Gargiulo, et al., Biomedical and Neural Engineering, Reykjavík University, Iceland*
- 16.20** Postural control adaptation and habituation during vibratory proprioceptive stimulation: an HD-EEG investigation of cortical recruitment and kinematics, *F. Barollo, et al. Reykjavik University, Reykjavik, Iceland, Aston University, Birmingham, UK, Univ Rennes, Rennes, France, University of Iceland, Reykjavík, Iceland, Landspítali, Reykjavik, Iceland*
- 16.40** Coffee break
- 17.00 SESSION VIII b – Mobility Disorders & Rehabilitation, C Angelini, S Masiero, Chairs**
- 17.00** Muscle activity prevents the uncoupling of mitochondria from Ca<sup>2+</sup> release units induced by ageing and disuse, *Laura Pietrangelo et al., Perugia University, Italy*
- 17.20** Comparison of reflex period in pendulum test done in SCI and Stroke patients, *Thordur Helgason et al., Reykjavík University, Iceland*
- 17.40** Sensitivity of the fasciae to endocannabinoid system and remodeling of fascial matrix: consequences for fascial fibrosis and inflammation, *Caterina Fede et al., Dept. Neurosciences, University of Padova, Italy*
- 18.00** Age-related changes of mechanical stiffness of extra-cellular matrix in human skeletal muscle, *Lorenzo Marcucci, et al., Department of Biomedical Sciences, Padua University, Italy*
- 18.20** Circulating microRNAs as promising biomarkers for monitoring of NLSM clinical phenotype, *Valentina Pegoraro, Roberta Marozzo, Sara Missaglia, Daniela Tavian, Corrado Angelini, Padova Venice, Milan, Italy*
- 18.40** To be announced
- 19.00** *Ugo Carraro, See you to the 2020Autumn Padua Muscle Days, Hotel Augustus, Terme Euganee (Padova), Italy - October, 2020*



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# ***EJTM Special Section: Translational Mobility Medicine***

**Call for EJTM Communications**

**Deadline February 15, 2020**

*(up-to 2000 words + 100-word summary + 3-5 key words + 3 Figures/Tables + 20 full references) will be published in EJTM 30 (1), 2020*

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