

**From the Padua Muscle Days, the Basic and Applied Myology and the European Journal of Translational Myology to the A&CM Carraro Foundation for Translational Myology**

**Abstract**

As a young researcher I had the option to work on skeletal muscle at the University of Padova, Italy. Introduced to the study of muscle denervation/reinnervation, I started a project on long term denervated muscle that still is my primary interest and took me from rodents' models of chronic muscle denervation to human spinal cord injury-related muscle denervation and its managements. On the way, I organized a series of conferences in Euganei Hills, Padua, Italy and an international journal, the Basic and Applied Myology. From 2010 this journal changed name to European Journal of Translational Myology, whose contents are focused on Myology, though they have important implications in aging, several neurological disorders and cancer cachexia. A relatively large community of Basic Biologists, Clinicians and Biomedical Technologists (usually meeting separately in very different specialty Conferences) recognized the need of a Meeting Series focused on Translational Myology. Thus the Padua Muscle Days (PMD) started more than 25 years ago. The next events of the PMD Series will be in Autumn 2017 an one-day Seminar on Easy Aging and a three-day event: The 2017 Fall Padua Experts' Meeting. During the 2018Spring PMD, the Giovanni Salviati Memorial will be organized to honor a beloved friend and excellent scientist, who abruptly disappeared twenty years ago at the peak of his research activities. Many friends and still-active pupils accepted invitation and will provide the backbone of the Program of the 2018Spring PaduaMuscleDay to be held, March 14-16, 2018 in Euganei Hills and Padua (Italy). All these events will be sponsored by the Interdepartmental Research Centre of Myology of the University of Padova and by the A&CM Carraro Foundation for Translational Myology.

**Key Words** : *Basic and Applied Myology, Padua Muscle Days, European Journal of Translational Myology, A&CM Carraro Foundation for Translational Myology*

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In the Seventies of the last century, as a young researcher at the University of Padova (Italy), I had the option to work on structural and molecular myology. This took me to develop special expertise in contractile muscle proteins analyses at molecular levels that at that time were based on gel electrophoresis and then bi-dimensional gel electrophoresis. Introduced to the study of muscle denervation/reinnervation, I started a research project on long term denervated muscle that still is my primary interest and took me from experimental stimulation of denervated muscles in rat models to Dynamic Cardiomyoplasty and Spinal Cord Injury - related muscle denervation and their managements by electrical stimulation. On the way, I started a series of rehabilitation conferences in Euganei Hills, Padua, Italy and founded the journal Basic and Applied Myology (BAM). From 2010 the journal changed name to European Journal of Translational Myology (EJTM), whose contents are limited to Myology, though their implications are of foremost importance in neurological disorders, cancer cachexia and aging. The collection of abstracts of the 2017Spring PaduaMuscleDays (2017Sp PMD), that were held March 23 to 25 in Euganei Hills (Padova) Italy, opened the second issue of EJTM 27, 2017.<sup>1</sup>

The First Padua Myology Meeting in 1986 was focused on prevention and rehabilitation of muscle disorders and titled Abano Terme Rehabilitation Conference. Initially, the muscle meetings were held every three years, but because of the pressure from "Myology Friends" to meet more often, they became annual and then bi-annual events, Spring and Autumn Padua Muscle Days (PMD). As interest in the meetings grew over time, the breadth of topics addressed by participants also increased. Muscle health and related injury prevention and rehabilitation are still focal points; however, topics of the Padua Meetings have also encompassed cardiac muscle work, including Dynamic Cardiomyoplasty which was based on supporting a weak heart by wrapping it within the latissimus dorsi skeletal muscle. In 1991, a new journal titled Basic and Applied Myology (BAM, retitled European Journal of Translational Myology, EJTM in 2010) began publishing original articles concerning biomedical research in myology and applications of new knowledge to prevent, cure and rehabilitate mobility impaired young and old persons. Eventually, electrical stimulation of denervated muscle became the driving topic and this both nurtured and followed implementation of the EU Project RISE (Use of electrical stimulation to restore standing in paraplegics with long-term denervated degenerated muscles (QLG5-CT-2001-02191)).<sup>2-4</sup> Functional Electrical Stimulation was indeed, one of the main topic of the collective sessions, but in every event other issues related to muscle biology, imaging, function, disease and treatments were discussed. Many important science topics were covered and sometime introduced. An important example

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includes the first world meeting in 1995 at Abano Terme (Padova), Italy which attracted the attention of molecular and cellular researchers and clinicians to the role of apoptosis in development, damage and repair of skeletal muscle and heart. So given this history, it will not be a surprise to find that the Collection of Abstracts of the 2017Spring PaduaMuscleDays covered a new discovery on the mechanisms of  $Ca^{2+}$  handling and spans to cover work on take-home rehabilitation strategies to rejuvenate older old humans.<sup>1</sup> Further, the EJTM 27 (4), 2017 will be a Special Issue on FES Cycling, guest edited by Christine Azevedo, Montpellier, France, Ché Fornusek, Sydney University, Australia and Vance Bergeron, Lyon, France. Since it was a tradition of the PaduaMuscleDays to offer to young biomedical researchers and engineers the opportunity to hear Senior Myologists, Dirk Pette and Gerta Vrbova opened the 2017Sp PMD presenting a historical overview of their rodent experiments of daily low frequency neuromuscular stimulation that established the extent of plasticity of the different types of skeletal muscle fibers. An updated review is published in EJTM 27 (1), 2017.<sup>5</sup> We would like to attract the attention of readers to the other interesting typescripts published in the same issue.<sup>6-9</sup> It contains also the first paper of a new EJTM Section “Strength and Conditioning/Physical Exercise” edited by Antonio Paoli, University of Padua, Italy, Pedro E. Alcaez, San Antonio Catholic University of Murcia, Spain, and Paulo Gentil, Federal University of Goias, Golanias, Brazil. During the Workshop: “FES in mobility impairments”, the present state of Clinical Functional Electrical Stimulation of muscle was discussed by Julien Gondin, Emiliana Bizzarini, Helmut Kern, Peter Biowski and Andrea Marcante. The second day of the 2017SpPMD was dedicated to three topics. In the morning, Marco Sandri gave an excellent lecture on the underlying molecular mechanisms of muscle atrophy and sarcopenia. Then during the Workshop “Molecular Approaches on Interactions of Pain and Mobility in Elderly” presentations were given by Sandra Zampieri, Giovanna Albertin, Giulia Ottaviani, David Hood, Stefen Anton and Christiaan Leeuwenburgh. The afternoon sessions were dedicated to the Workshop “Muscle Imaging” with presentations delivered by Feliciano Protasi, Amber Pond,<sup>10,11</sup> Simona Boncompagni, Enrico Pierantozzi, Bert Blaauw, Andrea Marcante, Corrado Angelini, Paolo Gargiulo and Kyle J Edmunds.<sup>12,13</sup> The lecture by Annalena Venneri “Physical exercise as a preventative strategy to slow down cognitive decline in aging. Evidence for the value of aerobic physical activity” closed the second day of the 2017Sp PMD. The morning of the third day was dedicated to the Workshop “Functional Rejuvenation in Aging” with presentations of Jonathan Jarvis, Markus Gugatschka, Claus Gerstenberger, Matthias Leonhard and Fabian Volk. The Workshop: “Rehabilitation Strategies for Severe Muscle Atrophy and Dystrophy” was opened after lunch with a Lecture by Dario Coletti. This was followed by presentations from Riccardo Ballarò, Daniela Tavian, Martin Schmol, Polona Pečlin, and Thordur Helgason.<sup>14,15</sup> The last session was dedicated to discussion of the selected Posters of Alfonc Baba, Laura Giaretta, Sergio Veneziani, Marina Marini and Felicia Carotenuto. You can learn more about the meeting by perusing the 30 pages of Abstracts, that include references and figures.<sup>1</sup> Additional information is in the 2017SpPMD Promo at: <https://www.youtube.com/watch?v=NdbbeQFi9z8&t=4s> and in a new Youtube Channel: [https://www.youtube.com/channel/UCshXMdDxpuOKA7eCWMBRqLg/videos?sort=dd&view=0&shelf\\_id=0](https://www.youtube.com/channel/UCshXMdDxpuOKA7eCWMBRqLg/videos?sort=dd&view=0&shelf_id=0). The Youtube Channel is, and will be even more in the near future, filled with videos from presentations

The image contains three promotional posters for muscle days events. The left poster is for "Easy Aging" on September 21, 2017, at the Carraro Foundation. The middle poster is for "The 2017 Fall Padua Experts' Meeting" from October 19-22, 2017. The right poster is for "2018 Spring PaduaMuscleDays, March 14-16" at the Salviati Memorial.

**Fig 1.** Future events of the 2017 and 2018 Padua Muscle days. More details are available on BAM OnLine at: <http://www.bio.unipd.it/bam/> and updated News on the EJTM website at: <http://www.pagepressjournals.org/index.php/bam/index>

and Promos of future meetings. Figure 1 presents three leaflets of future events, i.e., the Third Padua Myology Seminar “Easy Aging”, for general audience in particular old persons, to be held September 21, 2017 in Padua’s *Accademia Galileiana di Scienze, Lettere ed Arti*”, the 2017Au PMD: “The Fall Padua Experts’ Meeting”, October 19-22, organized in Hotel Augustus, Euganei Hills, Padua, and the 2018Spring PaduaMuscleDays, March 14-16. The main event of the 2018Sp PMD will be the Symposium: “Giovanni Salviati Memorial” which will be held March 15 in Padua to honor a beloved friend and excellent scientist 20 years after his death. Colleagues and pupils will present their more recent results still influenced by their collaboration with Giovanni. Suggestions of topics and speakers for other Workshops of the 2018 Sp PMD are welcomed. All events are sponsored by the Interdepartmental Research Centre of Myology, Department of Biomedical Sciences, University of Padova and the “Armando & Carmela Mioni Carraro Foundation for Translational Myology”, Padova, Italy.

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