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2nd CONNECT Congress 2017 – Connective Tissues in Sports Medicine
March 16 – 19, 2017 Ulm University, Lecture Hall of the Medical Faculty

The second international CONNECT congress „Connective Tissues in Sports Medicine“ took place from March 16 to March 19, 2017 at the University Hospital Ulm. More than 250 participants from 4 continents visited the congress and the numerous workshops. This international audience met 20 invited, internationally renowned scientists, such as Michael Kjaer (Denmark), Paul Hodges (Australia), Benno Nigg (Canada) and Yasuo Kawakami (Japan).

The goal of this congress was to continue the interdisciplinary exchange between physical therapists, athletic trainers, medical doctors and scientists, regarding fibrous connective tissues (fascia) within the context of Sports Medicine. Therefore, 16 practically-oriented workshops focusing on fascial manipulation, vacuum therapy, myoreflex therapy and ultrasound were combined with scientific lectures and a clinical panel discussion of leading fascia researchers.

To start off, Bastian Schmidtbleicher chaired the clinical panel discussion „Treatment and Prevention of Connective Tissue Injuries in High Performance Sports“: Sue Falsone (Athletic Trainer, USA), Andry Vleeming (Anatomy Professor, Belgium), Kurt Mosetter (Team Physician of US-National Soccer Team), Holger Schmitt (Orthopedist and Trauma Surgeon, Heidelberg) and Klaus Eder (Physical Therapist of German National Soccer Team) engaged in a lively discussion about individual treatment of athletes in the context of the ‘return to play’ concept in high performance sports. A holistic, individual approach should consider functional, myofascial chains with regards to injury prevention and treatment. The discussion panel emphasized the importance of transferring scientific knowledge into clinical and therapeutic practice.

In further scientific talks, the regulation of fascia regarding active contraction and kinaesthetic perception was delineated by the speakers showing partly novel, unpublished data. Jürgen M. Steinacker (Ulm) presented an immunological profile of highly vs. overtrained performance athletes in his clinical lecture and discussed an immunological concept of overtraining. The basis of myofascial chains and the impact of physical exercise, was presented by Andry Vleeming (Belgium) and Adamantios Arampatzis (Berlin). Contrary to older opinions in anatomic books, muscle groups are connected by fascial tissue and act as functional units. Sticky, overloaded fascia can be the origin of a variety of pain syndromes. Due to afferent innervation, fascial tissue will register local swellings and microinjuries and responds with alterations in muscular tone which can lead to pain and injury. These insights already affect surgical and physical therapeutic methods. Minimally invasive and traumatic fascial manipulation techniques have been developed to release sticky adhesions. According to the principle of myofascial chains, the cause of local pain can be at a distant site within the body. This is a major challenge for the diagnosis and treatment of myofascial problems.

Boris Hinz (University of Toronto, Canada) introduced the molecular and cellular basis of myofascial regulatory processes. He is an expert on myofibroblasts, which are an intermediate form between fibroblasts and smooth muscle cells. Hyperactive myofibroblasts produce excess collagen, leading to scar tissue development which compromises tissue elasticity. A current research approach deals with the modification of the ‘cellular memory’ of myofibroblasts via differential expression of different micro-RNA-molecules (miRNA).

The second congress day focused on the understanding of „Biochemical and Hormonal Regulation of Connective Tissue“. Michael Kjaer and Mette Hansen (Copenhagen, Denmark) as well as Keith Baar (USA) and Wilhelm Bloch (Cologne) presented their lectures regarding basic, regulatory signal cascades within muscular connective tissue – especially after physical training. Mette Hansen presented data regarding gender-specific differences in the incidence and prevalence of tendon injuries. Wilhelm Bloch and Keith Baar gave lectures on bi-directional communication processes between cellular and extracellular components in myofascial tissue.

Regarding kinetic storage properties and myofascial power transmission, Yasuo Kawakami (Japan) presented his fundamental experiments, which further classical biomechanical knowledge. One of the highlights of the congress was again the talk of Benno Nigg (Canada) 'Running with or without Shoes'. Systematically, he pointed out the established criteria 'pro' barefoot-running and refuted them with research findings.

We received a lot of positive feedback about the half- and full-day workshops. Topics such as fascial manipulation methods e.g. 'Myofascial Release', are effective strategies for optimizing proprioception, for the treatment of chronic pain within the locomotor system and for enhancing athletic performance.

To sum up, the lectures in combination with the practically-oriented workshops bring fascia into the focus of sports medicine, rehabilitation and physical therapy: fascia are trainable, important for muscular power transmission, as a sensory organ, for storing elastic energy and frequently, they are accountable for pain symptoms.

Targeted fascia training is a new area within the field of Sports Medicine to treat and prevent facial pain syndromes and to increase overall physical performance. Aspects of overloaded collagenous connective tissue are increasingly investigated, to be able to give recommendations regarding dosage and frequency of fascial training. New technologies, like high-resolution ultrasound, make it possible to distinguish between 'healthy' and 'unhealthy' fascia and to examine the effects of fascial intervention methods.

The CONNECT congress provides a forum for researchers, clinicians and therapists to exchange ideas and discuss research findings. The feedback for CONNECT2017 turned out very positively altogether. We received several requests for a continuation of this event.

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