



FASCIA NEWS - October 2019

A sporadic newsletter from the Fascia Research Group, University of Ulm

Dear colleagues,

We are pleased to share with you some new information relating to the field of fascia. We start with organizational matters right at the beginning; scientific news follow afterwards.

Fascia congress recordings

A large number of keynote presentations from the last international Fascia Research Congress have recently been made available at <https://vimeo.com/ondemand/frc5> . Among them particularly popular: the lectures by Dan Lieberman (anthropological aspects), Carla Stecco (Matrix Biology) and Neil Theise (Interstitialium). Members of <http://www.fasciaresearchsociety.org> receive particularly favourable conditions.

Fascia now in BODY WORLDS exhibitions

Thanks to an initiative of our Ulm-based FR Group, a particularly exciting project is currently underway in cooperation with the Institute for Plastination founded by Gunther von Hagens: it is the first attempt in the history of anatomy with usage of dissection and plastination to three- dimensionally

represent the body-wide fascia network as the main focus of attention. While in most anatomical preparations it was 'peeled away' using a scalpel to make the individual structures (muscles, nerves, vessels, organs) more clearly visible, this project is developing a novel preparation technique to emphasize the architecture of the surrounding and connecting tissues. A first partial preparation has already been presented at www.fasciacongress.org . Users of iOS (Apple) devices can view this free of charge: -> download the app *OtoCast* -> Location: *Berlin* -> *Fascia in a new light*.

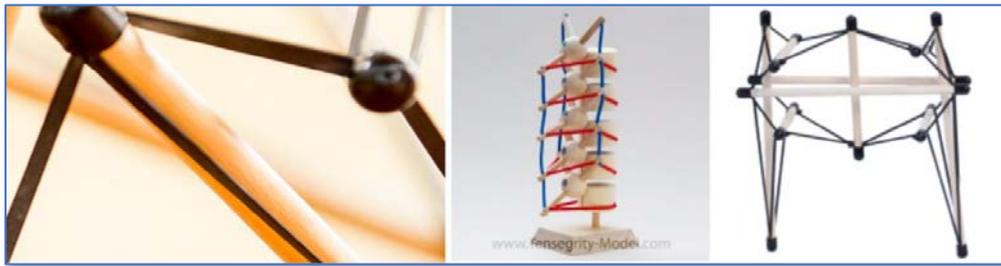
Currently, the first single exhibits of the project can be seen as a special highlight in the stationary BODY WORLDS exhibitions in Berlin and Heidelberg. Others are intended to follow. Information about further developments and backgrounds of the current project can be found at <http://www.fasciaresearchsociety.org/plastination>



Two recommended fascia films

Part 1 of the spectacular feature film 'The Secret Life of Fascia' is now available at <http://www.secretlifeoffascia.com> . This should not be confused with the ARTE TV documentary about fascia, which focuses on the scientific aspects of research and which can be found free of charge on Youtube under the

keyword "Mysterious world under the skin" (e.g. https://youtu.be/bWU_DnC9t4I , other language options are listed on <https://www.fasciaresearch.de/media-reports/tv-video-reports>). As different as the films are in their emphasis, they are of both of high quality and at the same time informative for most interested parties.



Tensegrity teaching tools

For lovers of the Tensegrity concept, new model variants are now available at www.fascialnet.com



Active fascial contractility

After almost 10 years of preparatory work, our research department in

Ulm successfully published its work on '*active fascial contractility*' in April 2019 in a highly ranked physiological journal. Some of the highlights in short form:

- Fascia can actively stiffen with the help of smooth muscle-like cells - so-called myofibroblasts. The more densely a fascia is colonised by these cells, the more pronounced their ability to contract. We have observed a particularly high density of myofibroblasts in the

human lumbar fascia and in the intramuscular perimysium (fascial envelope around muscle fibre bundles) in general.

- In the time window from seconds to a few minutes the contractions are so small that they are not able to cause a short-term and immediate biomechanical effect. However, a longer-term contraction - together with the matrix remodeling caused by these cells - can trigger a distinct contracture, which can lead to a massive tissue stiffening similar to a frozen shoulder over a period of weeks/months.
- One of the substances that most clearly triggers this stiffening tendency is the cellular messenger TGF- β 1. Interestingly, its expression in the human body is influenced by the sympathetic nervous system, which is why we postulate a possible interaction between chronic stress and fascial stiffening tendency.

The full text is freely available at

<http://www.frontiersin.org/articles/10.3389/fphys.2019.00336>

Anatomical evidence on myofascial chains of the arm

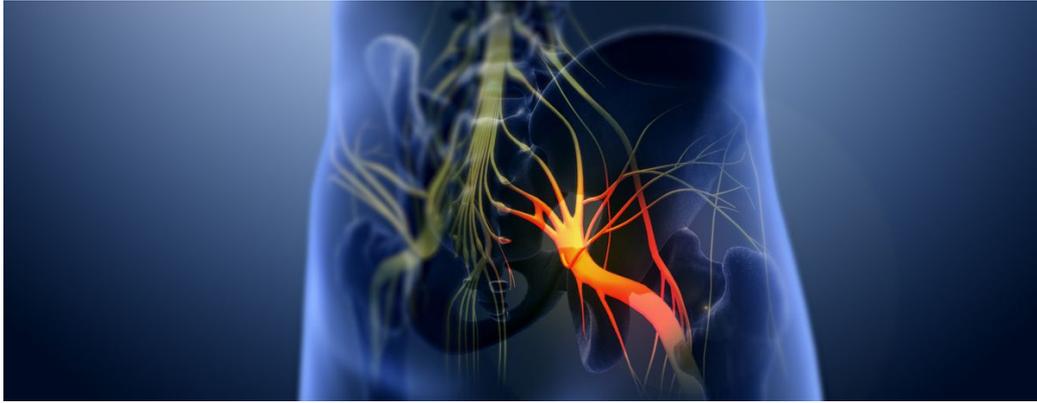


From the different longitudinal myofascial chains postulated by the American author Thomas Myers (Anatomy Trains'), a part of these chains had been subjected to a critical anatomical examination already in 2016 (see

<http://www.ncbi.nlm.nih.gov/pubmed/26281953>).

This evidence check was recently extended to the myofascial chains of the upper limb. The new examination found evidence for three chains. These are partly – but not fully – congruent with three of the four chains postulated by Myers. More at

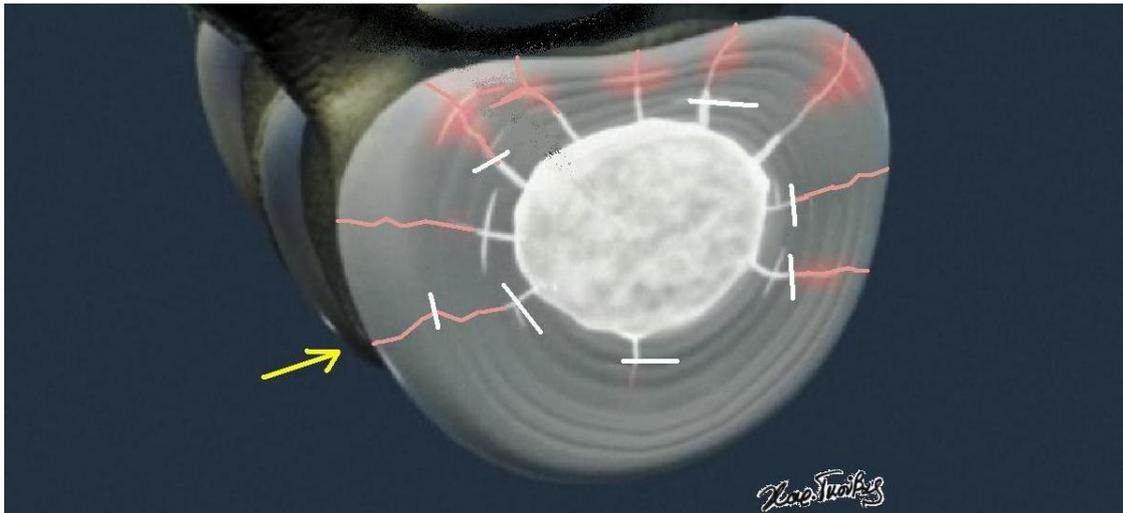
<http://www.ncbi.nlm.nih.gov/pubmed/31226229>



Nerve stretching better than muscle stretching?

When maximum hip joint flexion is severely limited in a straight leg bending maneuver, this is usually primarily attributed to shortened hamstring muscles. However, as a new study suggests, this limitation in mobility could be more likely due to a shortened sciatic nerve cord. Using shear wave sonoelastography, the stiffness of the posterior thigh muscles as well as the sciatic nerve bundle, i.e. a finger-thick "collagen reinforced neurovascular bundle" within the leg, was measured. After a targeted stretching of this bundle (in a modified 'slump position') it was shown that this intervention alone could produce a significant increase in the maximum hip flexion mobility without reducing the stiffness of the posterior thigh muscles (in contrast to the stiffness of the sciatic nerve tract, which was clearly reduced). To what extent this highly interesting finding can also be generalized to other movement restrictions in the human body will certainly be investigated in further studies in the near future.

<http://www.ncbi.nlm.nih.gov/pubmed/30266928>



Hydration of vertebral disc rings

The human intervertebral discs are known to be surrounded by a multi-layered mantle of tight fascial connective tissue ('annulus fibrosus'). It is generally assumed that the tearing resistance of this mantle influences the susceptibility to herniated discs. In a biomechanical experiment with fresh intervertebral disc mantles from sheep, it was investigated how the water content in this fibrous tissue affects its tensile strength. Clear result: a less hydrogenated mantle seems to tear more easily

<https://doi.org/10.1016/j.jbiomech.2019.04.008> . Our suggested conclusion:

A comprehensive back prevention training should also include a targeted re-hydration of this tissue by means of different sponge- deformation techniques.

Roller massage attenuates the effects of long sitting

Using the new IndentoPRO device for measuring tissue stiffness, colleagues at the University of Chemnitz were recently able to demonstrate that the back muscles tend to stiffen after prolonged sitting (here >4 hours). A subsequent roller self-massage led to a significant reduction in the previously increased tissue stiffness in the back. The 29 test persons carried out the 8-minute self-treatment of the back while

standing with the help of a 'BLACKROLL Duo Ball' between the wall and their own back. In the light of literature references to an increased susceptibility to pain in myofascial stiffness, the authors propose to interrupt sitting office work with regular back-breaks, in which roller self-massage is used as a possible preventive measure in addition to active exercises, based on their encouraging findings.

<https://doi.org/10.1016/j.apergo.2019.102947>

FASCIAL EVENTS

- **Course with Prof. Paul Hodges** (Australia) on "*Current concepts of posture and movement control in the lumbar region*" in Munich, Germany, Oct 21.-23, 2019
<http://somaticsacademy.com/classes/weiterbildungen-im-netzwerk>
- **Munich symposium for posture and motion control.** Nov. 23, 2019. Including update fasciae as well as the topic pain therapy in the movement medicine <https://ghbf.de/symposium>
- **Congress: Fascia @ Sea** '*Where science meets manual medicine*'. 17-Jan. 17-19, 2020, Scheveningen, Netherlands
<https://www.pro-osteo.com/courses/internationaal-congres-fascia-sea-where-science-meets-manual-medicine/>
- **Fascial Anatomy with Prof. Carla Stecco & Dr. Robert Schleip.** Jan. 27-31, 2020, Plastinarium in Guben/Germany
<https://app1.edoobox.com/SuSch/Anatomy/Kurs.ed.351139>
- **British Fascia Symposium,** May 16-17, 2020, Solihull, U.K.
<http://www.fasciasymposium.co.uk>
- **Functional anatomy with Prof. A. Vleeming & Prof. H. Lexy,** at the Charité Berlin, May 21.-24, 2020
[http://www.fasciaresearch.de/32.%20Anatomiekurs 2020.pdf](http://www.fasciaresearch.de/32.%20Anatomiekurs%202020.pdf)
- **Workshops in USA with Dr. Robert Schleip:** 1) July 10.-12, 2020, '*Fascia as an emotional and sensory organ*', Los Angeles <https://michelebond.com/fascia-education> 2) July 15-16, 2020, workshop in Gainesville, Florida (topic still open, info at <mailto:tjasaclmt@gmail.com>). 3) July 17-19, 2020, '*Fascia as an emotional and sensory organ*' together with Thomas Myers in Boston <http://www.anatomytrains.com>

- **Biotensegrity Conference**, Sept. 11-13, 2020, Prague.
<http://www.biotensegrityeurope.com>
- **Connective Tissues in Sports Medicine**, Congress at the Technical University Munich, with Prof. A. Arampatzis, Prof. M. Kjaer, and others. March 26-27, 2021. Safe the date! Web announcement to follow.
Internat. Fascia Research Congress, Montreal, Sept 13-15, 2021
<http://www.fasciacongress.org>

So far the latest news from the fascia research field as seen through the perspective of the small Fascia Research Group at Ulm University.

Fascianatedly yours

Dr. Robert Schleip and Fascia Research Team