October 2025 / Vol 6

MSUS ACADEMY

NEWSLETTER

Case of the month

presented by
Dr. Jörg Dünkel

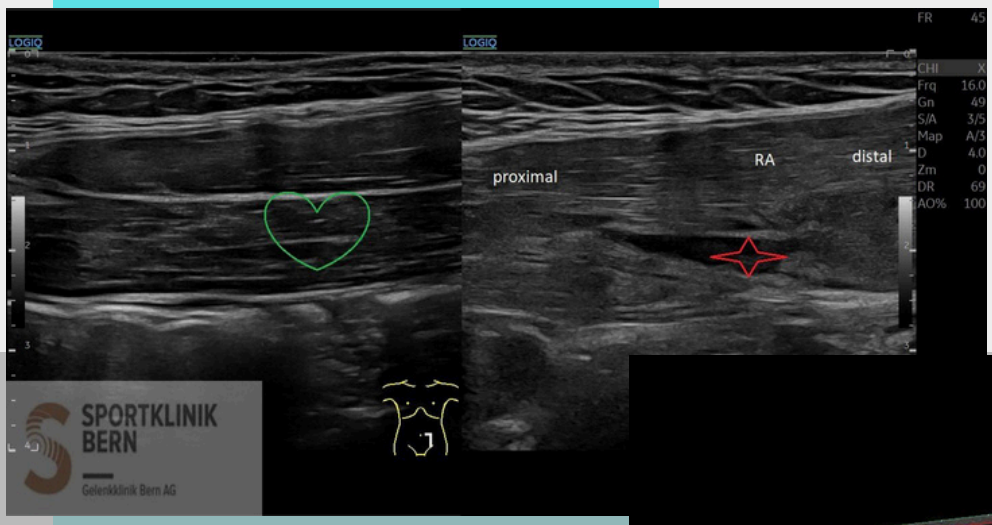
Further readings (free articles):

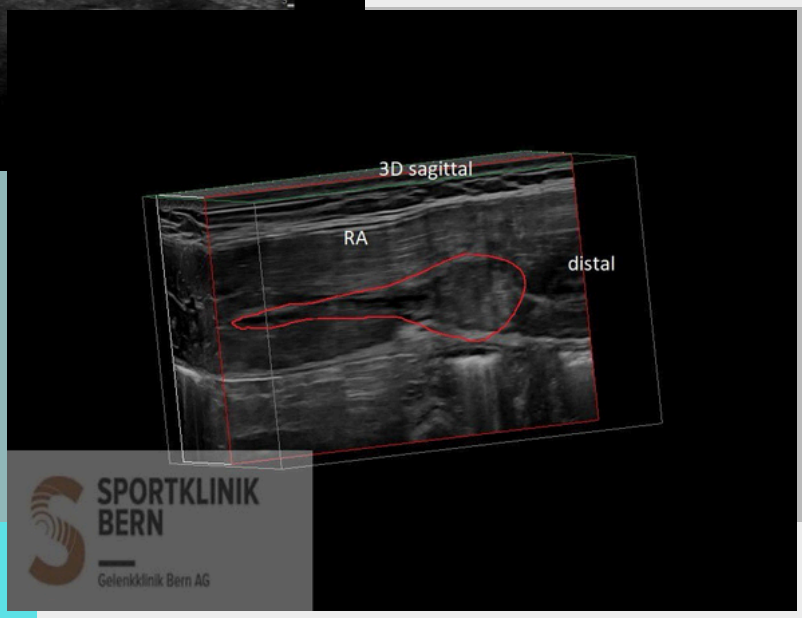
https://econtent.hogrefe.com/doi/epdf/10.1024/1661-8157/a003882

https://pmc.ncbi.nlm.nih.gov/articles/PMC11142968/pdf/132_2024_Article_4505.pdf

Muscle injuries are frequent in athletes and in the general population.
For therapy and prognosis, it is important to understand the total extent of the injury and to be aware of possible complications. In most cases, ultrasound is a useful tool for diagnostics of muscle injuries. However, muscle ultrasound is not as common as joint ultrasound; it is important to know the possibilities of high-resolution dynamic ultrasound in diagnostics and its limitations.

In this case we show a muscle injury of the rectus abdominis muscle
https://x.com/SportklinikBern/status/1943389549024903517





Interview with
Dr. Jörg Dünkel

Dr Jörg Dünkel @SportklinikBern
Sportklinik Bern - MSUS Academy - EFSUMB Learning Center
- Team Doctor BSCYB www.sportklinikbern.ch

MSUS Academy: As a sports physician, you are constantly confronted with acute injuries. How important is ultrasound in your daily work?
JD: By and large, the sporty patients are keen to have a ultra-quick diagnosis and a direct treatment so that they can return to sport as fast as possible. Ultrasound is direct available and provides the chance to reveal a great number of injuries of the muscles, tendons and even joints. Furthermore, after making the diagnosis the therapy can be started right away. You also have the chance to perform a functional assessment or visualise inflammation of the tissue. Especially in the field of muscle injuries ultrasound has a high value for diagnosis and treatment.
In these cases, high-resolution ultrasound allows the visualization of the majority of muscle injuries. At the same time, complications such as hematomas, calcifications, or seroma formation can be detected and immediate therapeutic intervention, such as puncture or, if necessary, infiltration with PRP or Traumeel, can be performed.
This also applies for other injuries in tendons and joints.

MSUS Academy: In an excellent review article [https://pubmed.ncbi.nlm.nih.gov/38739271/], you describe the importance of high-resolution dynamic sonography in diagnostics, treatment and monitoring of muscle injuries. Can you explain a T-junction lesion and how you treat it?
JD: The T-Junction injury is the confluence of the epimyseal surfaces of the caput breve and caput longum. It is a musculotendinous (MT) junction of these two muscles which form the distal tendon in the end. Injuries in this area are severe connective tissue injuries and require a longer healing period as regular MT injuries. Depending on the extent of the lesion it may take up to 8-12 weeks for recovery. Too early loading has the high risk of a reinjury with even longer healing times. The treatment is of cause physiotherapy and in these special cases I recommend PRP injections due to the high risk of reinjuries. In my experience you can achieve a lower Re-injury rate and support a proper healing. Unfortunately, we have no good studies on this.

MSUS Academy: You are very active on social media, which means that others can learn from you. Thank you for that! A question about your cases: should hematomas be aspirated in cases of muscle injuries, or not?
JD: n my experience hematoma should always be aspirated to reduce complications and promote the healing. They can form a fibrotic scar formation and lead to functional problems in the affected area. According to the “IOWA muslcle injury return to play protocol” hematomas should be aspirated over 3-5 ml.

MSUS Academy: Finally, do you have any advice for young colleagues in training using musculoskeletal ultrasound?
JD: Scan as often as you can. Compare to the contralateral side to reveal differences and learn about normal anatomic structure to understand how injuries present in MSK. If you are in doubt add an MRI to compare your findings with the MRI. But not everything you see in MRI is pathology and not everything you see in ultrasound is visible in MRI as the resolution of the ultrasound is higher. Additionally, you can perform dynamic examinations, visualize inflammation with PWD and measure the elasticity of tissue which is not possible in the MRI. Stay curious and follow the right channels in social media to keep you updated and informed of all new developments. And most importantly enjoy the beauty and possibilities of ultrasound.

MSUS
Publication of the month

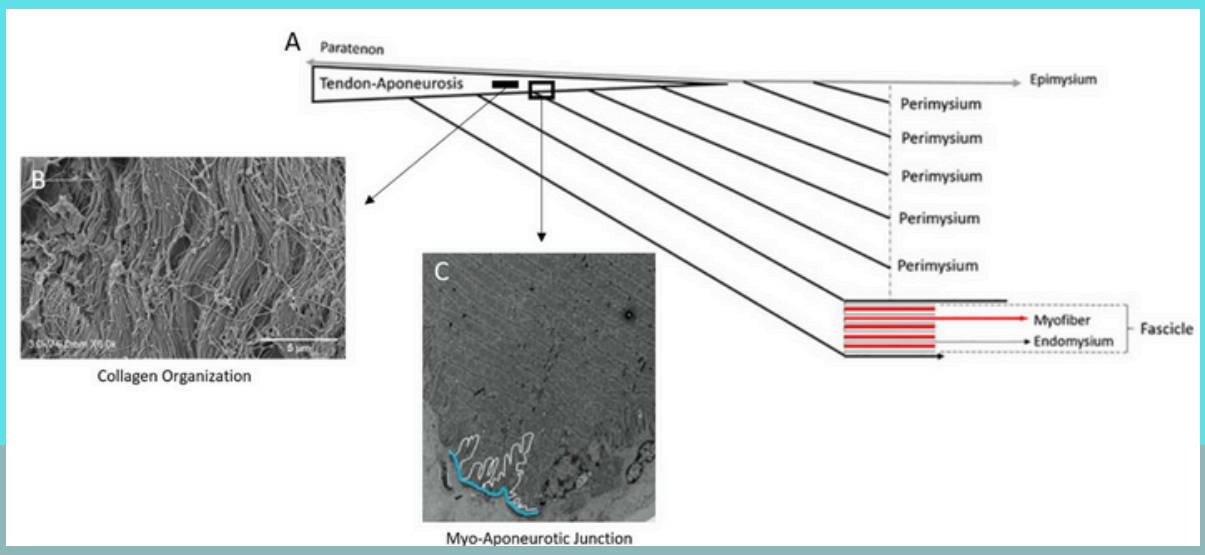
https://link.springer.com/content/pdf/10.1186/s40798-024-00789-3.pdf

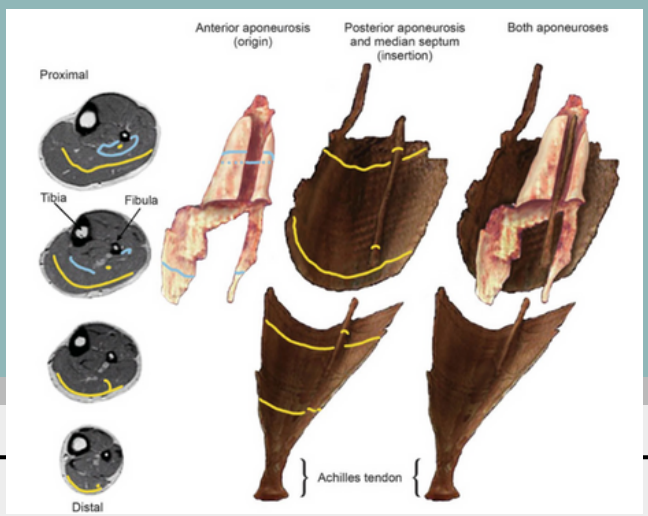
REVIEW ARTICLE Open Access

The Structure, Function, and Adaptation of Lower-Limb Aponeuroses: Implications for Myo-Aponeurotic Injury

Scott Hulm[1,2*], Ryan G. Timmins[1,2], Jack T. Hickey[2,3], Nirav Maniar[1,2], Yi-Chung Lin[1,2], Katherine R. Knaus[4], Bryan C. Heiderscheit[5], Silvia S. Blemker[6] and David A. Opar[1,2]

The aponeurosis is a large fibrous connective tissue structure within and surrounding skeletal muscle and is a critical component of the muscle–tendon unit (MTU). Due to the lack of consensus on terminology and the heterogeneous nature of the aponeurosis between MTUs, there are several questions that remain unanswered. For example, the aponeurosis is often conflated with the free tendon rather than being considered an independent structure. This has subsequent implications when interpreting data regarding the structure, function, and adaptation of the aponeuroses from these studies. In recent years, a body of work has emerged to suggest that acute injury to the myo-aponeurotic complex may have an impact on return-to-sport timeframes and reinjury rates. Therefore, the purpose of this review is to provide a more detailed understanding of the morphology and mechanical behaviour common to all aponeuroses, as well as the unique characteristics of specific lower-limb aponeuroses that are commonly injured. This review provides the practitioner with a current understanding of the mechanical, material, and adaptive properties of lower limb aponeuroses and suggests directions for future research related to the myo-aponeurotic complex.





MSUS News

Course calendar
https://www.irheuma.com/de/#courses

SGUM • ÖGUM • DEGUM
Ultraschall Dreiländertreffen
Davos 29. – 31.10.2025

https://ultraschall2025.ch/programm/

MSUS Image Database

https://www.flickr.com/photos/127475534@N05/

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