

Function and plasticity of muscles and tendons

It is well accepted that tendon mechanical properties influence the function of the entire muscle-tendon unit. These properties affect force transmission and bear important implications on energy transfers between muscle fibers, tendon tissue and the body. For instance, the mechanical properties of the lower limb tendons are essential for muscle force production during locomotion. Ultrasonography has for two decades enabled measurement of tendon displacement and fascicle behavior during various tasks. Initially restricted to slow isometric contractions, ultrasonographic scans can nowadays take advantage of an increased time resolution to examine muscle-tendon function during dynamic movements such as walking, running and jumping.

The purpose of this session is to present the function and plasticity of the human Achilles tendon and to discuss implications for sport performance. The session will also give an introduction to ultrasound techniques to assess tendon properties and fascicle behavior during movements.

Muscle and tendon function - implications for everyday movements and sport performance

Prof. Dr. Kirsten Albracht, University of Applied Science Aachen

Training induced changes in the properties of the muscle-tendon unit

Prof. Olivier Seynnes, Norwegian School of Sport Science

Non-uniform biomechanical function in the Achilles tendon

Prof. Dr. Toni Arndt, The Swedish School of Sport and Health Science