



The Berlin School of Movement Science (BSMS), graduate school of the Humboldt-Universität zu Berlin, is offering a

PhD position with focus on muscle and tendon adaptation in youth athletes

for a period of 3 years hosted at the Department of Training and Movement Sciences of the same university starting in February 2018.

Project description

The purpose of the research project focuses on the adaptation of muscle and tendon in youth athletes. In young, growing athletes, the development of muscle and tendon tissue is influenced both by maturation and mechanical loading. Recent evidence suggests that the interaction of these two driving stimuli could increase the risk of developing imbalances between the strength capacity of muscles during adolescence. However, to date no information is available on the effect of maturation and training in prepubertal children. Therefore, it is important to deepen our understanding of muscle and tendon adaptation during prepubertal maturation, not only with regard to the properties of the muscle-tendon unit as a determinant of sports performance, but also in respect of injury prevention.

The project aims to determine the development of muscle strength and architecture, and tendon mechanical properties of the plantar flexor and knee extensor muscle-tendon unit in prepubertal athletes and untrained children. Joint moments will be determined using dynamometry, inverse dynamics and electromyography, while muscle architecture and tendon elongation will be assessed using ultrasonography.

We are looking for a PhD candidate who is interested in muscle and tendon biomechanics and the development of the musculotendinous system.

Qualifications

- Candidates should hold an MSc or equivalent in Sports Science, Biomechanics, Engineering, Biology or Medical Sciences.
- A very good biomechanical background, together with direct experience in dynamometry and ultrasonography.
- Previous work human muscle architecture and tendon biomechanics in vivo will constitute an important reason for preference.
- Strong experience in the use of programming languages such as R or MATLAB are desired.
- Very good knowledge of the English language in speaking and writing is required.

Eligibility

- With the beginning of the scholarship the Master or equivalent studies must be completed.
- The latest degree may not date back longer than 6 years.
- At the time of the nomination the candidate may not be in Germany for more than 15 months.
- During the scholarship period, staying abroad is limited to 9 months in total and no longer than 3 months per year.

The position is funded with a DAAD scholarship (Graduate School Scholarship Programme) and it includes:

- Monthly scholarship of 1000.00 €.
- Health, accident and liability insurance.
- Funding of a German language course (2, 4 or 6 months).

Application procedure

The application can only be submitted electronically. It should be written in English and must contain the following:

- Letter of motivation
- Detailed curriculum vitae
- Letter of recommendation by two university professors from the home university, issued during the last 2 years (see the DAAD form attached)
- Copies of certificates or copies of translated documents:
 - o Copy of the school leaving certificate qualifying for admission to higher education in your own country

- Copies of certificates of annual examinations taken at the home university (transcripts of records)
- Copies of certificates of any academic degrees or advanced qualifications showing grades and explain the home's grading system
- Certificates of internships (when available)
- The master thesis (or equivalent) and any publications or manuscripts

Contact information for this position

Dr. Falk Mersmann (falk.mersmann@hu-berlin.de, +49 (0) 30 2093 46010)

We invite you to apply before the **30th September 2017**. Applications must be submitted as one pdf file containing all materials to be given consideration. Please send your application document via email to: falk.mersmann@hu-berlin.de

The Department of Training and Movement Sciences at the Humboldt-Universität zu Berlin provides basic and applied research in the areas of training and movement sciences as well as biomechanics. Our main research fields include adaptation mechanisms of mechanical and morphological properties of muscles and tendons, plasticity of movement control and interaction between the neuronal and musculoskeletal systems in order to increase human performance and improve life quality.