

## **Clinical Exercise**

### **Achilles Tendinopathy in runners:**

### **The hidden role of the nervous system in persistent plantarflexor weakness**

#### **Abstract**

Persistent plantarflexor weakness is a common issue in runners with Achilles tendinopathy (AT). For years, soleus was considered the primary contributor, guiding both assessment and treatment. However, new research challenges this assumption. This presentation will show that runners with AT have a selective deficit in the lateral gastrocnemius, evidenced by reduced activation and a lower contribution to total triceps surae force. I will delve into the neural mechanisms driving this selective weakness and discuss how it may alter tendon load distribution, potentially explaining why symptoms persist. To address this, I will propose a new intervention using targeted recruitment strategies to specifically strengthen and increase the activation of the lateral gastrocnemius. This novel approach may improve treatment effectiveness by correcting a key deficit that current rehabilitation methods often fail.

## Gabriel Fernandes

### Biography

**Dr Gabriel Fernandes** is a senior physiotherapist with over 15 years of experience in elite sport and private practice. He has worked extensively with high-performance athletes, including at the Rio 2016 Olympic Games and the Gold Coast 2018 Commonwealth Games.



Gabriel completed his PhD at Queensland University of Technology (QUT), where his research focused on central nervous system contributions to triceps surae muscle deficits in runners with Achilles tendinopathy.

He is currently a Lecturer at Southern Cross University, where he teaches regional anatomy and biomechanics in the new Bachelor of Physiotherapy program. His research continues to explore triceps surae function in runners with Achilles tendinopathy.