

Athlete Profiling & Rehab for the Calf & Achilles Complex



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Colin Griffin is a strength and conditioning coach working as a rehabilitation specialist at the Sports Surgery Clinic in Dublin. He has over 15 years experience in high performance sport having represented Ireland at the 2008 and 2012 Olympic Games in the 50km walk and coached other Irish athletes to Olympic level.

Quick Takeaways

- Altering foot position can influence muscle activation and loading:
 - Externally rotated foot position = medial gastroc bias
 - Internally rotated foot position = lateral gastroc bias
 - Knee flexion with eccentric focus = deep fibres of achilles tendon
 - especially from soleus
- Soleus is the biggest force producer for supporting centre of mass and for forward and upward acceleration of centre of mass
- Cueing active dorsiflexion during the flight phase of pogo jumps provides length and pre tension of the calf muscle tendon unit to create increased stiffness at ground contact
- Soleus Timing of peak force = midstance gastrocnemius timing of peak force = toe off



Key Learnings

1 The Horizontal Rebound Test is superior to the Vertical Drop Jump Test in assessing power output at the ankle due to a reduced contribution from the hip and knee joints.

2 Heavy isometrics (1.5 x bodyweight) increase force output + stiffness of the Achilles tendon while supramaximal eccentric loading (2x bodyweight) is important for athletes requiring increased fascicle length for explosive actions

3 Longer isometric holds may be useful to reduce tendon pain but tendon stiffness adaptation can be achieved with short holds (at least 3 sec) at a very high intensity