Results At 10% of MVC, CSAs were significantly smaller throughout the gastrocnemius tendon compared to those at rest, but there were no significant differences in the Achilles tendon CSAs (Figure 1A). At 20% and 30% of MVC, the gastrocnemius tendon CSAs remained significantly smaller throughout its length (Figure 1B and C). At 20% of MVC only the proximal CSA of the Achilles tendon was significantly smaller compared to that at rest (Figure 1B). At 30% of MVC, CSAs in the proximal region (5 scans) of the Achilles tendon were significantly smaller compared to those at rest (Figure 1C).

Discussion Reductions in tendon CSA as a result of tensile loading applied by muscle contraction were assumed to represent regional-specific longitudinal elongations, i.e. as the tendon is stretched it becomes thinner. Contrary to our initial hypothesis, the largest deformations did not occur in the region of smallest tendon CSA, but were instead tendon-specific with greater deformations in the gastrocnemius tendon compared to the Achilles tendon. This occurred despite presumably lower forces acting on the gastrocnemius tendon, which discusses a reduced stiffness and modulus in the gastrocnemius tendon compared to the Achilles.

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REFERENCE

Abstract 87 Figure 1 Stimulus response curves shown for a control participant and a participant with PT. The y axis is the motor evoked potential as a percentage of Mmax obtained by direct stimulation of the femoral nerve.

The x axis is the percentage stimulator output.

These changes were positively related to symptom duration ($r^2 = 0.57$) – the longer the duration of symptoms, the more pronounced the increase in cortical excitability.

Discussion People with PT have increased corticospinal excitability affecting motor control. Differences identified indicate that symptom duration impacts cortical excitability. It may be important to measure and consider these cortical changes in the rehabilitation of people with PT.

REFERENCE
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EXERCISE REDUCES PAIN IMMEDIATELY AND AFFECTS CORTICAL INHIBITION IN PATELLAR TENDINOPATHY

Introduction Patellar tendinopathy (PT) affects the ability to jump and land due to pain and associated corticospinal changes to motor patterning.

Whilst eccentric exercise is commonly used in rehabilitation, it can be painful to complete. PT tendinopathy is especially problematic in competitive season, during which there are constant time and performance pressures. Where eccentric exercise has been completed in the competitive season, there has been poor adherence due to pain and either no benefit [Visnes, 2005] or worse outcomes [Fredberg, 2008]. There is a need for interventions that reduce pain.
Patellar Tendinopathy: Looking Outside The Tendon

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