

PEOPLE WITH ACHILLES TENDINOPATHY DISPLAY GREATER FORCE FLUCTUATIONS THAN CONTROLS AT LOW FORCE LEVELS

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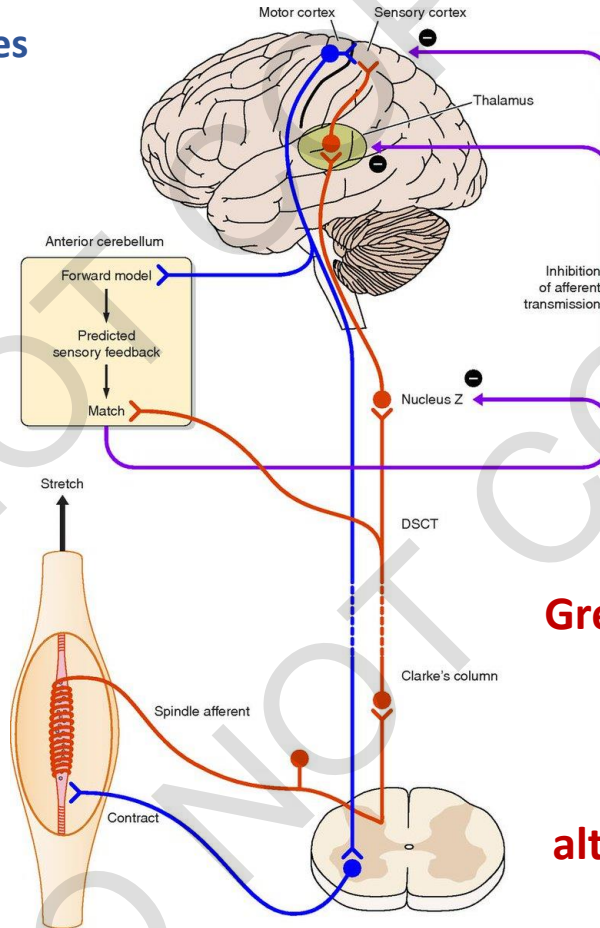


Dawson Kidgell

Background

- Achilles tendinopathy (AT) is associated with reduced maximal planterflexor torque (Mahieu 2006; O'Neill 2015)
- Emerging evidence of proprioceptive and motor impairment in lower limb tendinopathy (Groot et al. 2015, Torres et al. 2016, van Dieen et al. 2018)

increased motor excitability Achilles
(Chang et al. 2015)



**Greater error in load sensing in
patellar tendinopathy
(Torres et al. 2016)**

**altered golgi tendon function?
altered tendon stiffness?**



Aims

To compare **muscle force control** in AT and control group

To investigate whether torque, pain and muscle force control change following a loading task

Methods

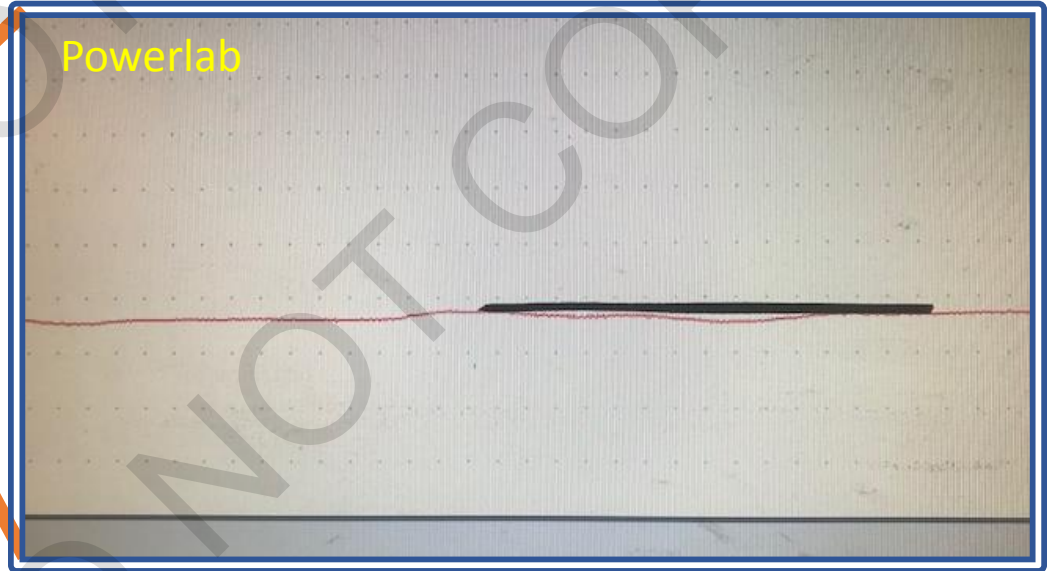
Inclusion criteria

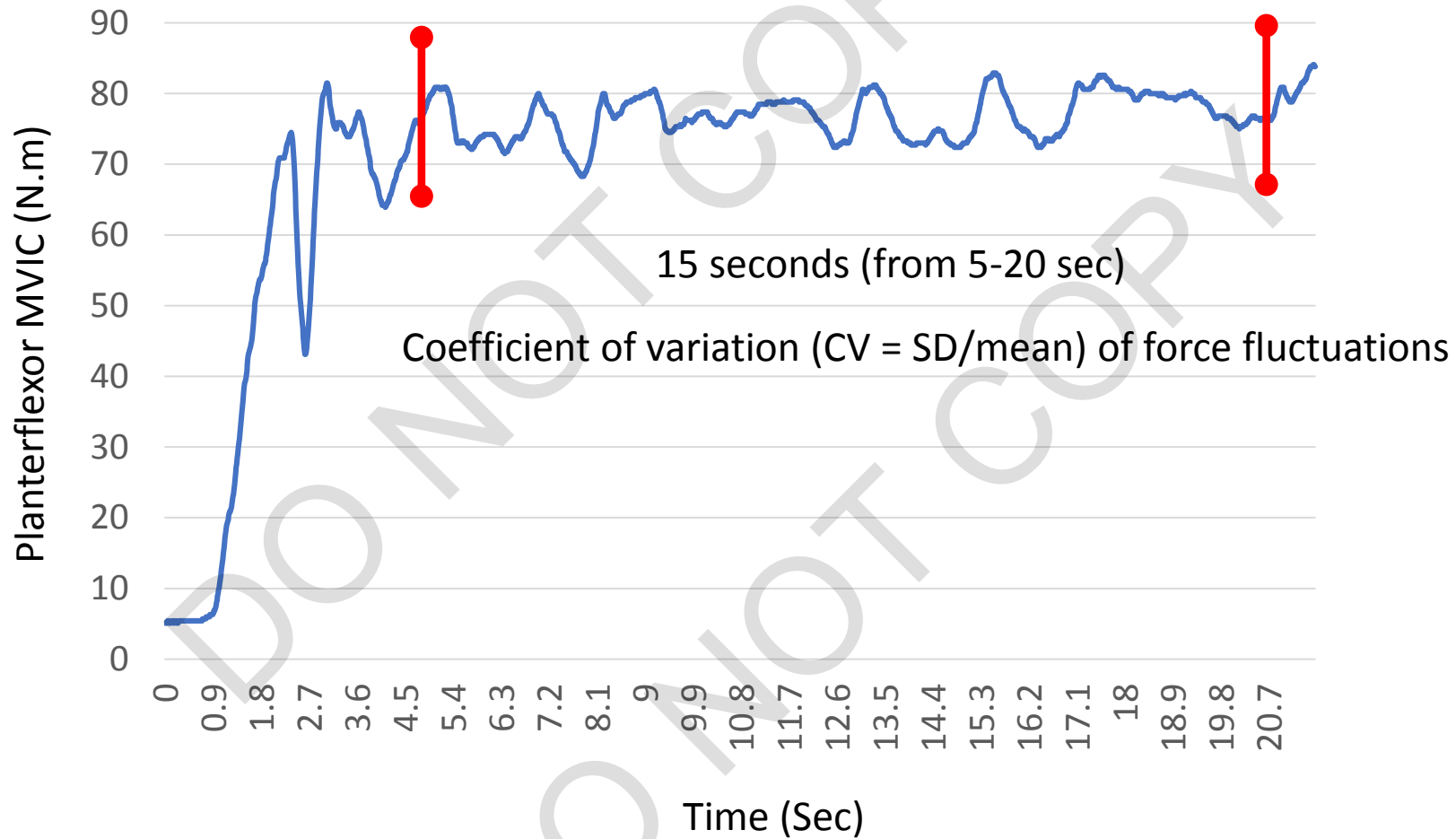
- Men
- 18-60 years old
- ***Achilles tendinopathy***
- Localised midportion Achilles pain
- >3 months
- Gradual onset pain
- Pain aggravated during or after weight-bearing activity

Exclusion inclusion

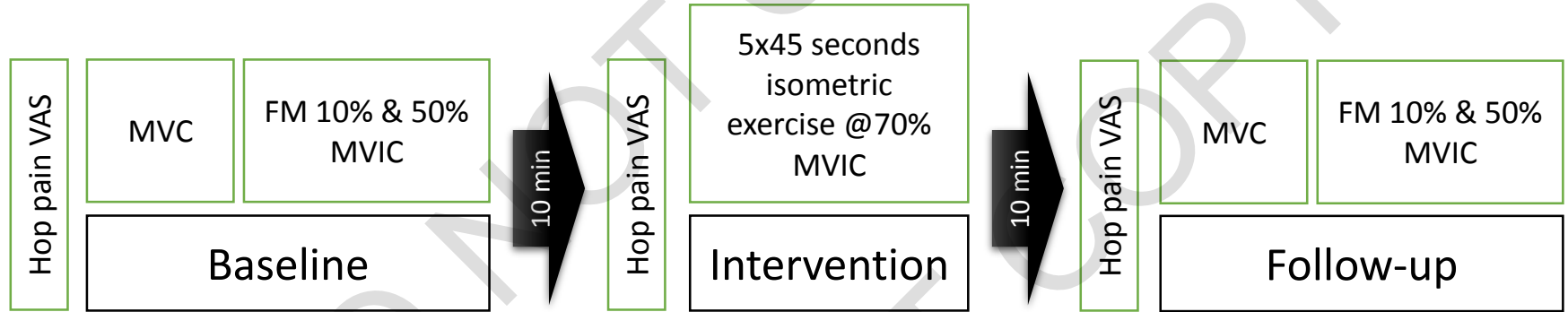
- Previous surgery/rupture on symptomatic limb
- Inflammatory arthropathy
- Other previous lower limb surgery
- Other current lower limb conditions
- Injections into/around the Achilles last 3 months
- Pain during the force matching task

- Maximal voluntary isometric contraction (MVIC)
- Force match (FM) 10% & 50% of MVIC (random order)
- 2 familiarisation and 2 trials





Protocol

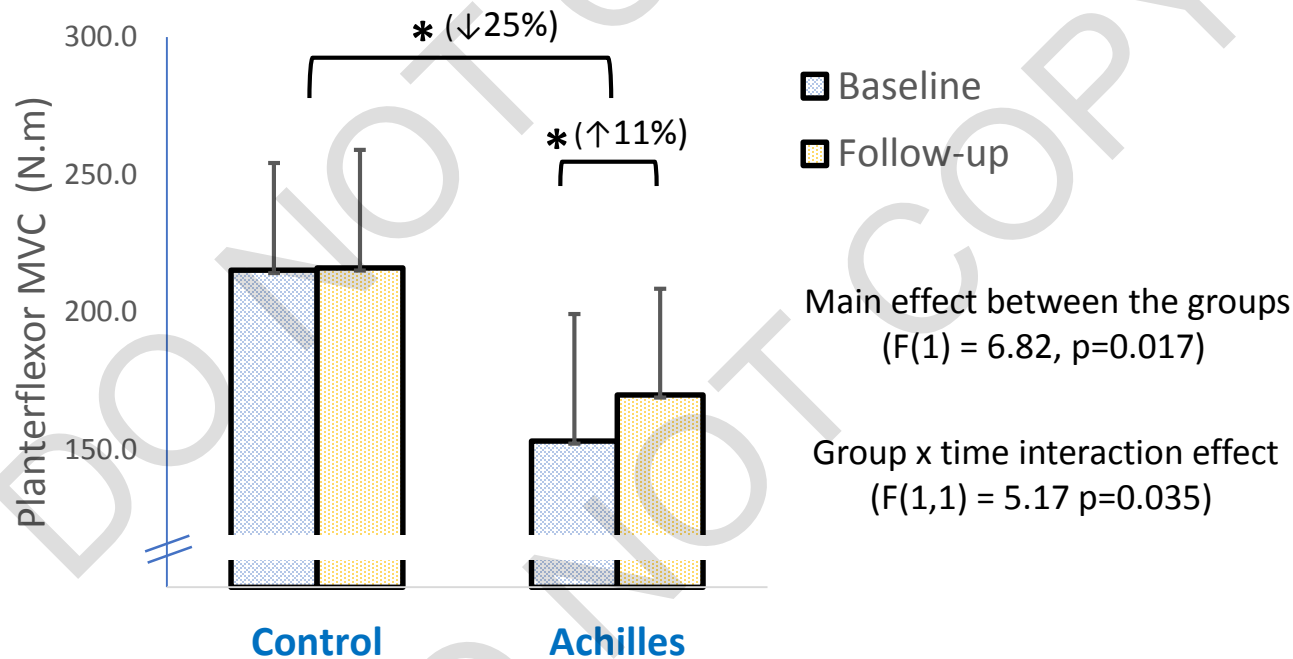


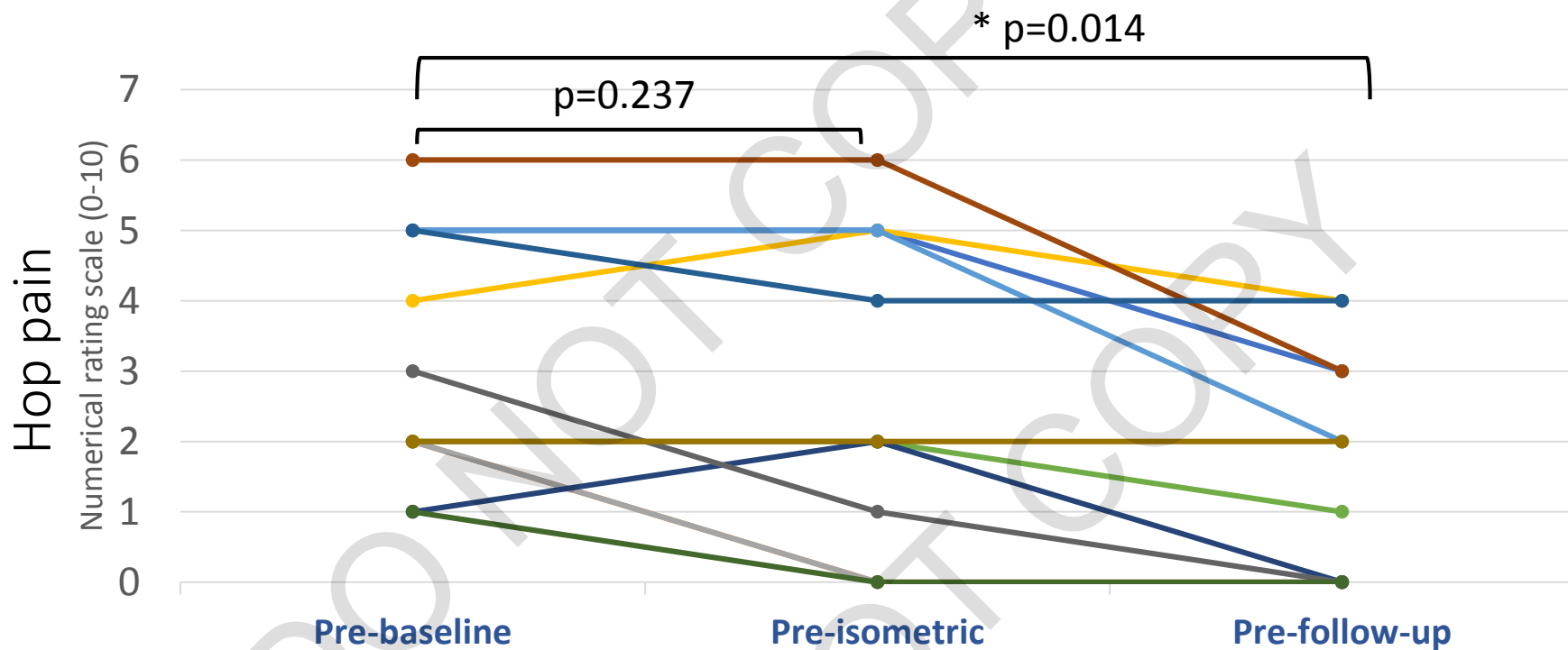
Results

	Achilles tendinopathy	Healthy control
N	11 (6 bilateral)	11
Age (yrs)	36 (8.7)	42 (10.2)
Weight (kg)	81.2 (15.1)	85.6 (11.1)
7-day activity (kCal per kg)	280.5 (36.5)	293.8 (38.1)
VISA-A (0-100)	68.0 (16.8)	99.2 (1.5)*
Hop pain (0-11)	3.2 (1.8)	0 (0)

*Mann Whitney U, $p < .05$

Maximal voluntary isometric contraction





Baseline FM

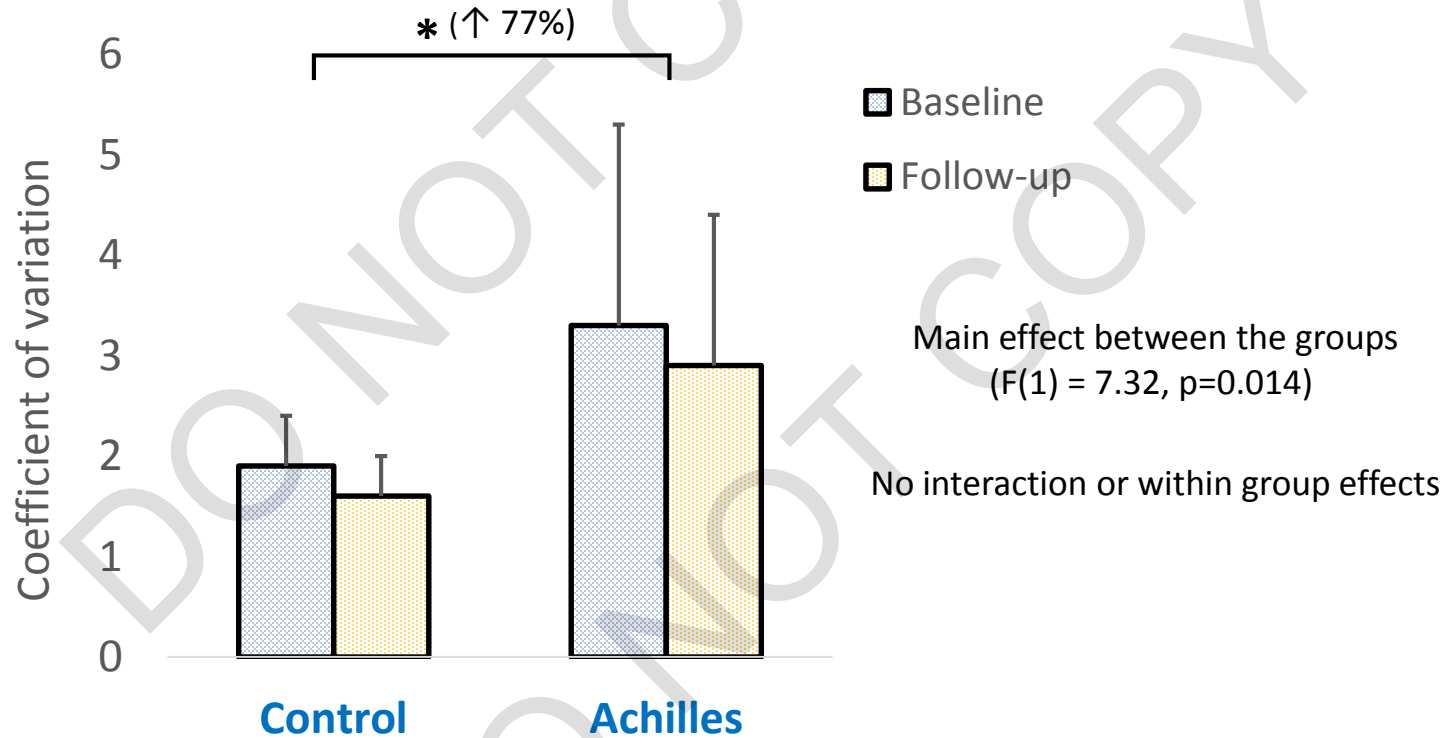
10 min

Intervention

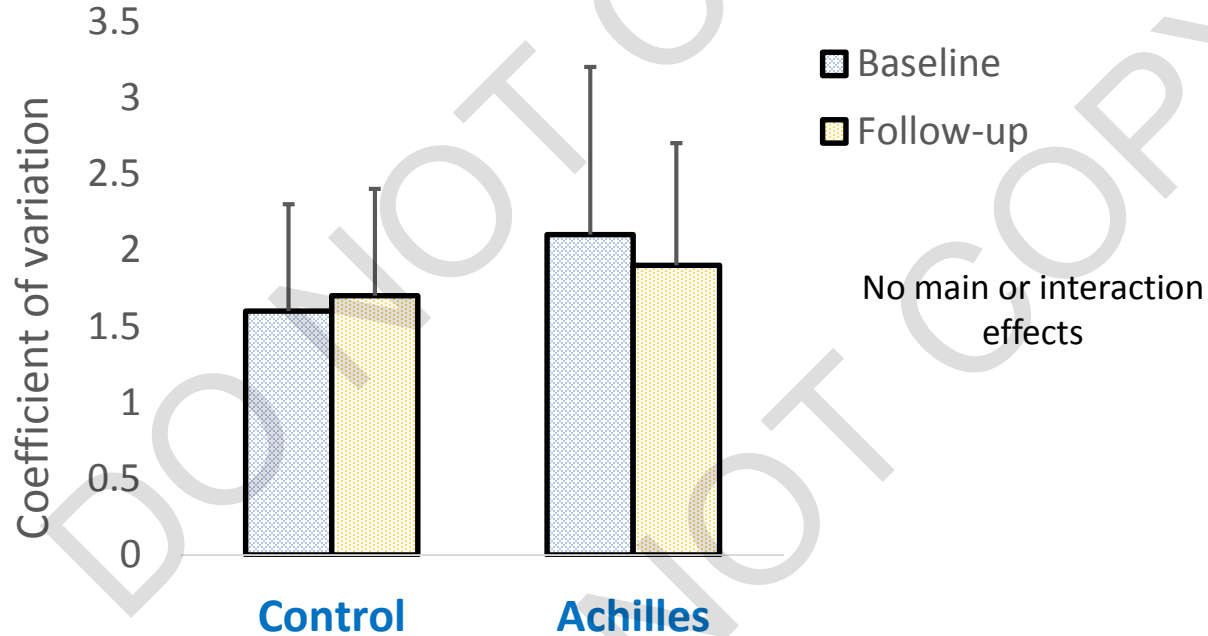
10 min

Follow-up FM

Force match 10%



Force match 50%



Discussion

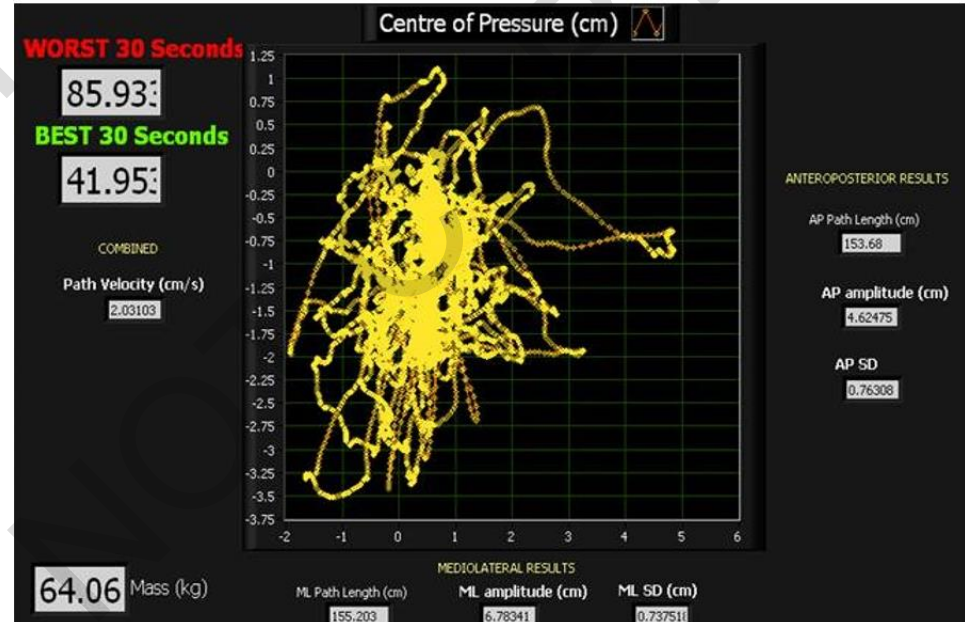
Low load motor
impairment in Achilles
tendinopathy

Do these changes relate to
function?

What are the mechanisms?

Do these changes require
specific interventions?

Altered sensory input leading
to altered motor command



Thank you

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