RESEARCH WITH PLYMOUTH UNIVERSITY

A randomised crossover trial investigating actual & perceived changes in peak knee extensor torque following Kinesio Tape® application

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Purpose and existing literature (KT = Kinesio tape)

Aktas and Baltaci (2011)
KT ***does improve*** peak knee extensor torque 180°/s (*P* = 0.031) 60°/s (*P* = > 0.05)

Wong *et al.* (2012)
KT ***does not improve*** peak knee extensor torque (*P* = > 0.05) but does decrease time to reach (*P* = 0.03)

Csapo and Alegre (2015)
Meta analysis
Very small population effect (r = 0.05)

Placebo response has been specifically identified as an area that requires further investigation (Vercelli *et al.,* 2013)

No studies comparing strength and perceived strength following KT application were found following multiple database searches

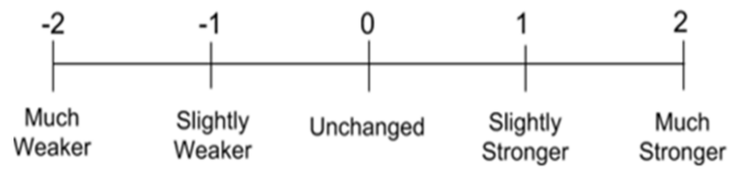
Is there a correlation between actual and perceived changes in peak knee extensor torque following Kinesio Tape® application?

- Primary aim
  - to determine whether there is a *correlation* between actual and perceived changes in peak knee extensor torque following kinesio taping ®
- Secondary aim
  - to determine the extent to which kinesio taping improves peak knee extensor torque

Design and methods (GRCS = Global Rating of Change Scale)

Information + consent form
↓
Biodex fitted + practice attempt
↓
3 contractions no tape (minute rest)
↓
3 contractions - taping condition one (sham or actual)
↓
GRCS – taping condition one
↓
Break
↓
3 contractions - taping condition two (sham or actual)
↓
GRCS – taping condition two
↓
Debrief

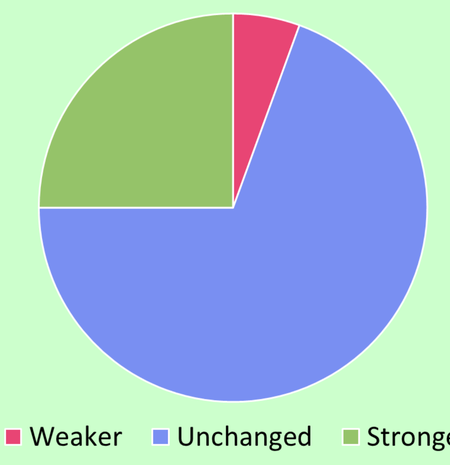
GRCS: "With respect to trials performed without tape, how would you describe your leg when the tape was applied?"



Inclusion Criteria	Exclusion Criteria
• Participate in at least an hour of sporting activity per week • Aged 18-30	• History of traumatic injury or surgery in the lower limb • Sensory deficit of the lower limbs • Current lower limb pain • Allergy to tape/adhesive material

Results

Sham perception



K tape perception

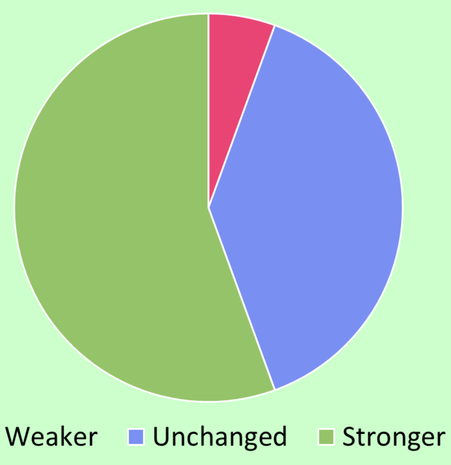


Table 1. Correlation of actual and perceived peak torque (N=36)

Output	Spearman's correlation	
	Correlation Coefficient (r_s)	Sig. (2-tailed)
Sham tape / GRCS	0.133	0.438
Kinesio Tape / GRCS	-0.142	0.408

Conclusions:

- **KT improves perceived knee extensor torque**
- **KT does not improve actual peak knee extensor torque**
- **Changes in perceived and actual torque do not correlate**

1 → 2 → 3

1. KT should not be used to enhance strength
2. Belief does not impact efficacy
3. High performance sport potential exception

Considerations and Implications

Psychological benefits may play a greater role in affecting actual strength output when applying it to more functional movement within the context of real life competition.

Although it appears any such effect is small, the slimmest of margins can make a difference in elite, high performance sport.

It is also unclear whether changes in perception may benefit performance when combined with other treatments.

References:
Aktas, G. and Baltaci, G. (2011) 'Does kinesiotaping increase knee muscles strength and functional performance', *Isokinetics and exercise science*, 19(3) pp. 1-7.
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Wong, O., Cheung, R., and Li, R. (2012) 'Isokinetic knee function in healthy subjects with and without Kinesio taping', *Physical Therapy in Sport*, 13(4) pp. 255-8