

Effect of the use of patellar strap and sports tape on pain in patellar tendinopathy

Astrid de Vries, Inge van den Akker-Scheek, Ron Diercks, Henk van der Worp, Johannes Zwerver

Center for Sports Medicine, University Medical Center Groningen, University of Groningen, The Netherlands

Conclusion

In athletes with patellar tendinopathy the use of a patellar strap or sports tape results in significant and clinically relevant lower VAS pain scores during functional tests with high patellar tendon load.

Introduction

Numerous athletes with patellar tendinopathy (PT) use a patellar strap or sports tape during sports aiming to reduce their pain. To our knowledge no scientific evidence supporting the use of these orthoses in this common overuse injury is currently available.

Aim

The aim of this study was to investigate the effect of wearing a patellar strap or sports tape on pain in athletes with PT. The secondary aim was to investigate if specific patient characteristics are related to the effectiveness of the orthoses.

Methods

- Randomized controlled crossover experiment with 4 conditions: patellar strap, sports tape, placebo, control (figure 1)
- Athletes with symptomatic PT
- 3 functional tests: single leg decline squat (1x and 10x), countermovement jump, triple hop test
- Main outcome: VAS pain score
- Mixed model analysis (primary aim) and linear regression analysis (secondary aim)

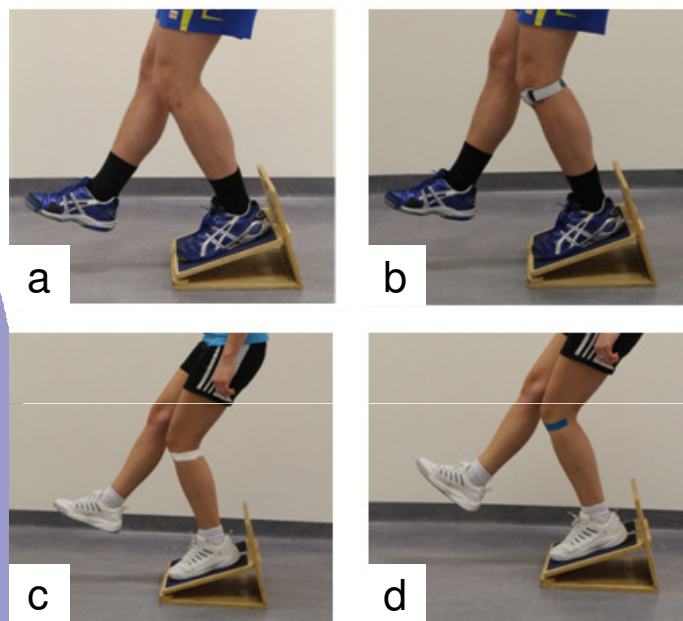


Figure 1: the four conditions tested in the study: a) control condition, b) patellar strap condition, c) sports tape condition and d) placebo condition

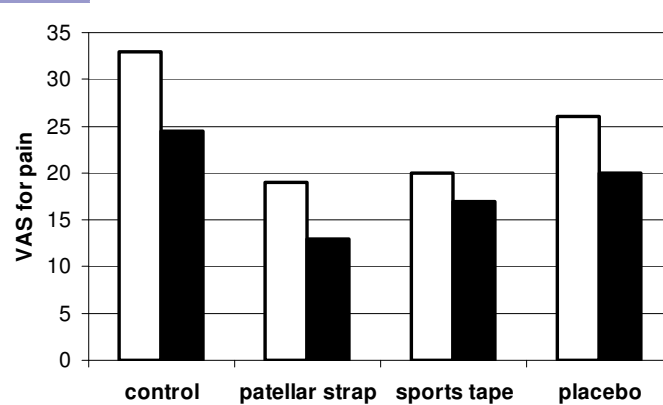


Figure 2: VAS score for the four conditions during the 10x single leg decline squat (white bars) and the one-legged counter movement jump (black bars)

Results

97 athletes were included in the analysis; 61% male, age 27.0 y (SD 8.1), VISA-P 58.5 (SD 12.7).

Largest effect patellar strap and sports tape on pain during 10x single leg decline squat (14 and 13 mm reduction vs. control ($p < 0.05$) and 7 and 6 mm vs. placebo ($p = 0.33$ and $p = 0.32$) (figure 2).

A reduction of 11.5 mm ($p = 0.06$) was found for the patellar strap condition compared to the control condition during the one legged counter movement jump.

Females benefit more from sport tape compared to males. No other predictors of effectiveness were identified.

Discussion

The use of a patellar strap or sports tape results in significant and clinically relevant ($>12\text{mm}$) lower VAS pain scores during functional tests with high patellar tendon load like the single leg decline squat. Part of the effect can be a placebo effect. Females seem to benefit more than men from the use of sports tape. Further research is required to establish whether these effects also can be observed in sport specific situations.

Reference: de Vries AJ, van den Akker-Scheek I, Diercks RL, Zwerver J, van der Worp H. Effect of patellar strap and sports tape on junper's knee symptoms: protocol of a randomised controlled trial. J Physiother. 2013 Dec; 59(4):270.