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De Vries, Astrid J.; den Akker-Scheek, Inge van; Diercks, Ronald; Zwerver, Johannes; der Worp, Henk van

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# Effect of patellar strap and sports tape on jumper's knee symptoms: protocol of a randomised controlled trial

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

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

## Abstract

**Introduction:** Patellar straps or sports tapes are commonly used by athletes with patellar tendinopathy in order to reduce pain and to continue sports participation. Currently, there is no scientific evidence for the effectiveness of a patellar strap or sports tape in the management of this common injury. **Aim:** To investigate the effect of the use of a patellar strap and sports tape on pain and sports participation in subjects with patellar tendinopathy. **Design:** The study is divided into two parts: a randomised controlled crossover experiment and a randomised controlled trial (parallel group design). **Participants and setting:** 140 patients diagnosed with patellar tendinopathy recruited from sports medical centres and physiotherapist practices. **Intervention:** In the first part of the study, participants serve as their own control by performing three functional tests under four different conditions (patellar strap, sports tape, placebo tape, and no orthosis). In the second part, participants keep a log for two weeks (control week and intervention week) about the pain experienced during and after sports and their level of sports participation. In the intervention week participants will use the orthosis assigned to them during

training and competition. **Measurements:** The amount of pain (both parts of the study) and sports participation (second part only) will be measured. **Analysis:** To analyse the effects of the orthoses a Linear Mixed Model will be used. **Discussion:** The knowledge gained in this study can be used by practitioners in their advice for athletes with patellar tendinopathy about using patellar strap and sports tape during sports.

**Trial registration:** Dutch Trial Register (NTR). **Registration number:** NTR 3660. **Prospective registration:** Yes. **Funded by:** The Netherlands Organisation for Health Research and Development (ZonMw). **Approval number:** 75020020. **Anticipated completion:** June 2014. **Correspondence:** Astrid J. de Vries, Center for Sports Medicine, University Medical Center Groningen, Hanzeplein 1, 9700 RB Groningen, The Netherlands. Email: a.j.de.vries02@umcg.nl

**Full protocol:** Available on the eAddenda at [jop.physiotherapy.asn.au](http://jop.physiotherapy.asn.au)

## Commentary

Athletes with patellar tendinopathy often wear a patellar tendon brace while playing sport. The anecdotal effectiveness of these braces in reducing pain and allowing continued sporting participation requires evaluation via well-designed and adequately controlled clinical trials. There is a plausible mechanism for the pain relieving effect of a patellar tendon strap with finite element modelling of knee radiographs indicating that patellar tendon straps can reduce tendon strain at the classic site of patellar tendinopathy (Lavagnino et al 2011).

This well designed protocol proposes investigating pain levels while performing aggravating activities under four intervention conditions (patellar tendon brace, patellar tendon taping, placebo taping, control). A placebo taping condition is a key strength of the proposed study, however as participants may accurately distinguish between active and placebo taping, evaluating allocation concealment success at study completion would be worthwhile (for discussion see Schulz et al 1995). As exercise-based treatments that are effective during the off-season (Bahr et

al 2006) do not work during the competitive season (Visnes et al 2005), in-season pain relief strategies are needed. This study will determine whether patellar tendon straps or taping can deliver short-term pain relief for athletes who continue to compete in jumping sports. If patellar tendon straps or taping are shown to reduce pain, future studies could examine whether their use can optimise outcomes from exercise-based rehabilitation. An interesting clinical question for future studies is whether patient compliance with exercise-based rehabilitation can be improved through providing a pain-relieving adjunct intervention.

**Jamie Gaida**

*Department of Physiotherapy, Monash University,  
Australia*

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