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# An online survey using social media investigating the use of kinesiology type tape and McConnell type tape with clinicians who treat cycling related knee pain

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## Abstract

**Background:** The Tour de France will undoubtedly showcase various cycling related injuries in its Yorkshire opening stages in 2014. Patello-Femoral Pain (PFP) is responsible for over 25% of all road cycling injuries and over 65% of injuries in the lower limb (Callaghan, 2005: Journal of Bodywork and Movement Therapies, 9, 226-236). Alongside trauma related pain it remains the main injury affecting experienced and elite cyclists and is commonly treated using taping (broadly categorised into McConnell and kinesiology type tape - KTT). To date it is unknown as to the extent and rationale behind the use of tape in cycling related knee pain.

**Purpose:** To determine clinicians' current use of taping in elite and experienced cyclists with cycling related knee pain in order to inform a 3D motion analysis study into current taping techniques. To date very little work has been undertaken in this area and although it is presumed that taping is used extensively throughout cycling, it is unknown as to how much it is actually used and the rationale behind its use.

**Methods:** An online survey (Survey Monkey™) determined current taping techniques used by clinicians treating elite and experienced cyclists. A preferred taping application was determined and reported from a choice of 4 (fig 1). Data were collected from clinicians (n=30), identified as having an area of special clinical interest in cycling related knee pain within the target group. Recruitment was predominantly through the social network Twitter™. Data collected included; treatment methods, clinical taping usage, specific applications, perceived effectiveness of treatment, clinical rationale, formal training, clinical importance and outcome measures.

**Results:** The data collected indicated a clear preference from clinicians for the use of KTT (figure 2) at >80%. 59% of clinicians used taping to manage pain, 46% for re-aligning patella, and 29% for activation of musculature, (figure 3). Clinicians preferred to initially apply tape, then test in-situ before re-applying (74%) and adapt to each cyclist (87%) - (figure 4). Reported outcome objectives were predominately pain management and biomechanical changes. When asked to score the effects of clinical taping, participants felt that pain; biomechanical changes and proprioception were effective to 'some degree' (figure 5). Proprioception was considered very influential by over 50% (figure 5). Reasons for use that scored highly were clinical effectiveness, ease of use and longevity (figure 6). Rating of efficacy and effectiveness scored high in 'success of outcome', 'repeatability & reliability', and 'comfort' (figure 7). >50% felt that placebo had some effect (figure 5).

**Discussion:** KTT is clearly the tape of choice in cycling today. This is in contrast to the use of McConnell type tape in traditional physical therapy setting. There was considerable variability in clinician's reasoning for taping use, reflecting gaps in the current knowledge base. Its clinical adaptation usage is in line with previous work by McConnell even though its longevity and comfort appears to separate its practice in cycling. The reported perception of placebo effect from KTT tape is an intriguing adjunct to the findings and should be considered in future research designs for effectiveness using this type of tape. This (placebo effect) was specified as a separate effect from that of proprioception however, which scored highly as a clinical effect. Notably, proprioception in cycling has not been effectively measured to date. Interestingly, clinicians felt it was an effect to some degree (fig 5) whilst also scoring it as not at all important clinically (Figure 7). The use of social media to recruit participants establishes a new and innovative approach to recruitment. This can be seen as timely due to its prevalence in today's society and increased use amongst clinicians globally for both networking and evidence based practice debate and knowledge transfer.

**Conclusions.** KTT appears the preferred application in cycling related knee pain. The data provide a clear rationale for the testing of specific taping techniques and indicate how clinicians are currently using taping in the treatment of cycling related knee pain. These results give a clear focus for a follow up study, which would aim to determine the biomechanical efficacy and clinical effectiveness of KTT. This work would determine any biomechanical changes in the PFJ during cycling as well as looking at any effects from neutral and no tape. In addition, a focus on pain and placebo would be interesting outcome measures of future work.



Please look at the photos of 4 different kinesiology type taping techniques below and then answer the single answer question afterwards.  
Thank you for participating.

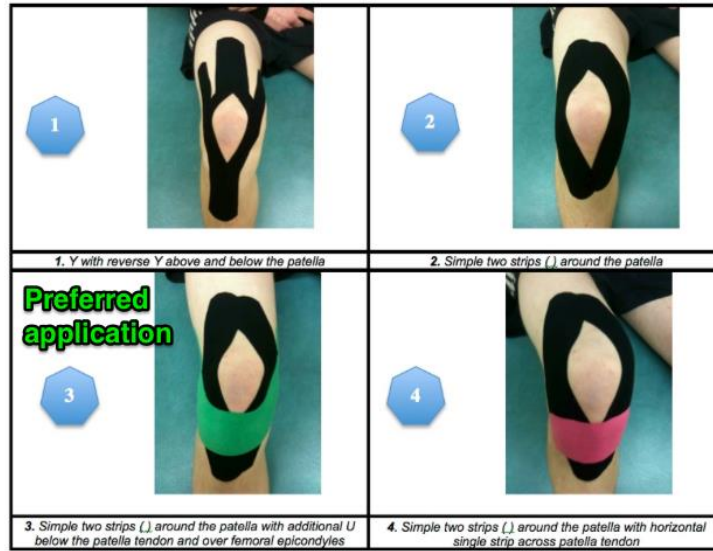


Figure 1. Preferred application indicated and other choices in question.

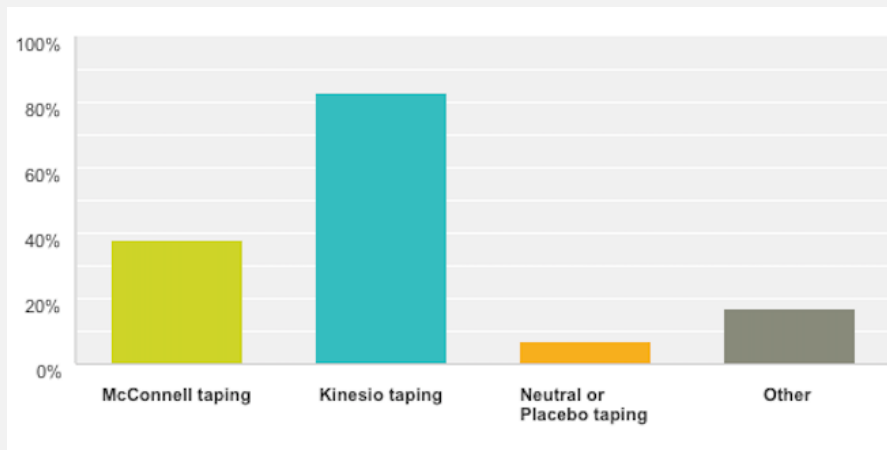


Figure 2. Preference for clinical taping use.

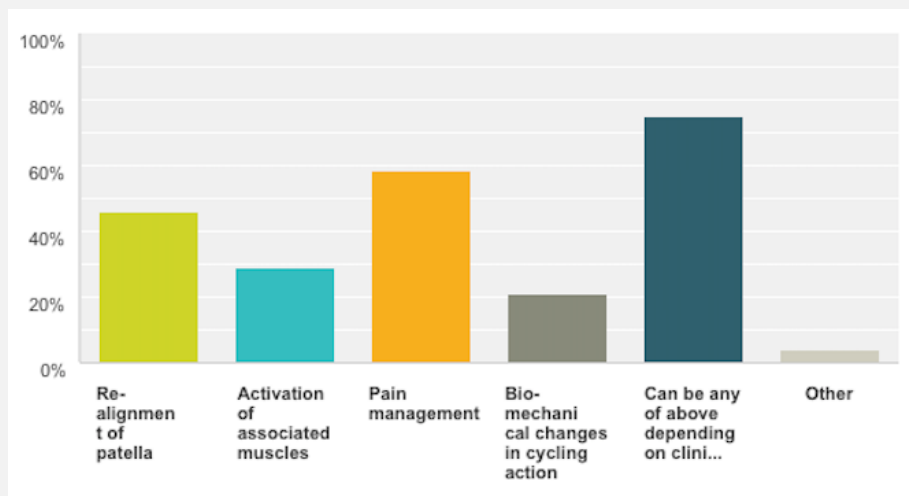


Figure 3. Use of taping for cycling related knee pain.

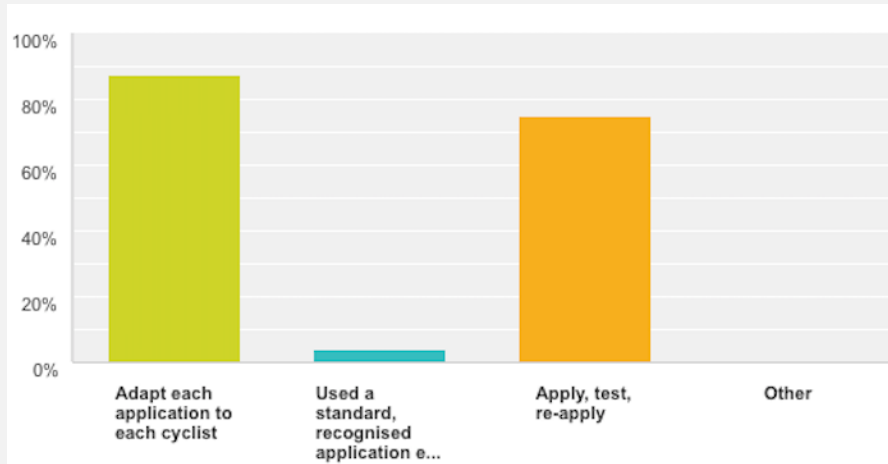


Figure 4. Application of taping.

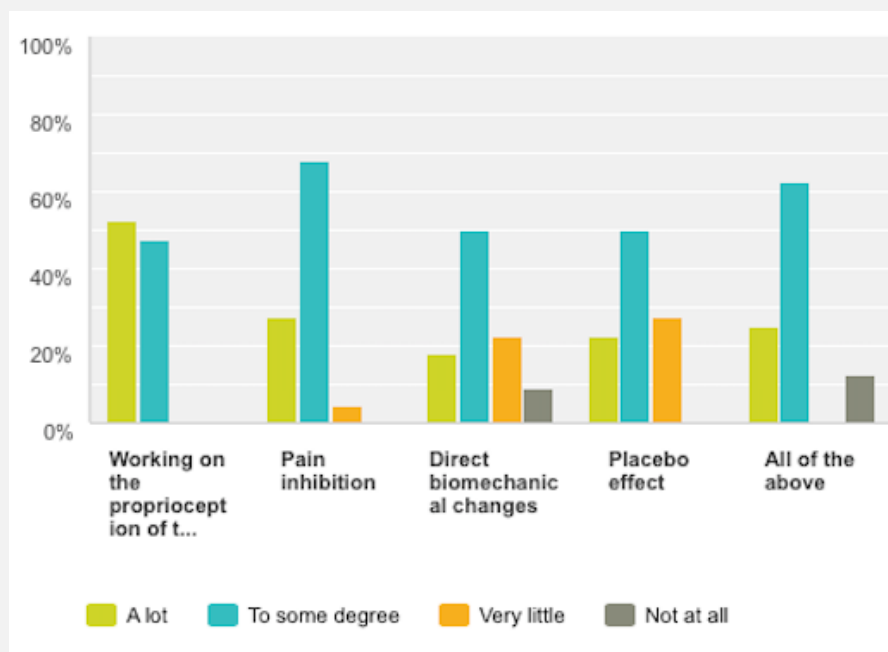


Figure 5. Effects of clinical taping use with cycling related knee pain.

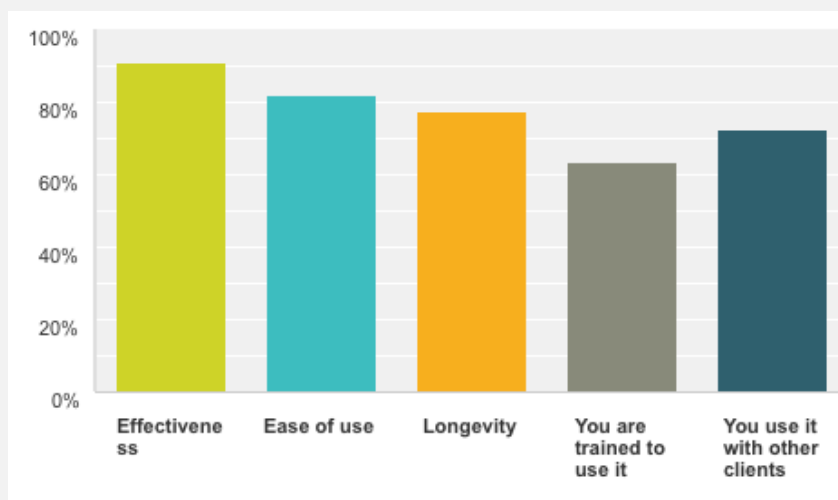


Figure 6. Importance of use of KTT.

	Not at all important	Quite important	Important	Very important	Total
That it works	0.00% 0	4.35% 1	26.09% 6	69.57% 16	23
That it is comfortable for the cyclist	0.00% 0	0.00% 0	47.37% 9	52.63% 10	19
That it is reliable	0.00% 0	4.76% 1	42.86% 9	52.38% 11	21
Other	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0
How it works	4.35% 1	39.13% 9	39.13% 9	17.39% 4	23
That it is easy and quick to apply	4.55% 1	18.18% 4	59.09% 13	18.18% 4	22
That it is repeatable	4.35% 1	13.04% 3	34.78% 8	47.83% 11	23
Why it works	8.70% 2	30.43% 7	43.48% 10	17.39% 4	23
That it initiates biomechanical changes around the knee	13.04% 3	43.48% 10	21.74% 5	21.74% 5	23
That the cyclist likes the look of it	30.43% 7	21.74% 5	43.48% 10	4.35% 1	23
That it looks good to you	34.78% 8	34.78% 8	30.43% 7	0.00% 0	23
That it has a placebo effect	47.83% 11	30.43% 7	21.74% 5	0.00% 0	23

Figure 7. Rating efficacy and effectiveness of KTT.

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