

The Effect of Taping with Tension on Mechanical Displacement of the Skin and Change in Pain Perception

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BACKGROUND

Functional Fascial Taping (FFT) has been shown to reduce low back pain significantly more than placebo taping in a randomized controlled trial. Functional Fascial Taping (FFT) applies tape with tension to the skin, which involves a number of mechanical loads, such as stretching, compression, and displacement. However, the mechanism of pain relief from taping is not known. The aim of this study was to examine the effect of taping with the mechanical displacement of the skin on change of pain perception.

METHODS

Twenty-one active healthy volunteers (11 males and 10 females) with mean (SD) age 33.1(10.2) and body mass index (BMI) (SD) 23.1(2.5) participated in this single group study with repeated measures. All participants received three different taping procedures: no tape, taping with tension, and taping without tension. The order of three taping conditions was randomized. Skin displacement was measured during taping with tension. A pressure algometer was used to measure the level of pain perception before and after the three taping conditions. The rubber tip of the algometer was located over the right posterior superior iliac spine with the rate of pressure at 30 kPa/s and size at 1 cm². Five trials within each taping condition were done. The mean value of the five trials was regarded as the mean pressure pain threshold (PPT). The participants were blind to the values of their PPT during the experimental period.

RESULTS

The mean skin displacement in the condition of taping with tension was 2.58±0.49cm. There was no significant correlation between skin displacement and age ($r = -0.22$, $p > 0.05$), gender ($r = 0.19$, $p > 0.05$), and BMI ($r = 0.16$, $p > 0.05$). There were significant differences in PPT between taping with tension and taping without tension ($p = 0.00$) and no tape ($p = 0.00$). No significant difference in PPT between no tape and taping without tension was found ($p > 0.05$).

CONCLUSIONS

The results indicate that taping with tension increases the threshold of pressure pain perception. Therefore, stretch and compression caused by taping with tension could disturb the nociceptive signal transmission and alter pain perception.