INFLUENCE OF ANKLE TAPING ON JUMP PERFORMANCE

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INTRODUCTION: The present study aimed to investigate the influence of prophylactic ankle taping on jump performance, in the push off and the landing phase, for healthy subjects, for three types of jump. Ankle sprains represent from 38 to 50% of the total sport injuries (Jones *et al.*, 2000). Functional taping and ankle braces are passive preventive measures frequently utilised in sports, however, studies on the influence of functional taping on sports tasks are scarce and most of them only analyse the passive ROM restriction (Hume and Gerrard, 1998).

METHOD: 12 healthy subjects (7 males, 5 female) were recruited. Following a subject-selected warm-up, subjects performed, taped and then un-taped, three each of countermovement jump (CMJ), 30 cm drop jump (DJ) and standing long jump (SLJ), using the arms, starting from/onto an AMTI force platform operating at 1000 Hz. A three-layer modified closed-basket inelastic taping technique was used on both ankles as shown in Figure one (Abian-Vicen *et al.,* 2008). Ankle and knee active range of motion (ROM) was determined using an inclinometer before and after ankle taping. CMJ and DJ height was calculated via force platform flight time and SLJ distance was manually determined.

Figure1 Three-stage modified closed-basket ankle taping technique

RESULTS: Ankle taping produced no associated effect on ROM on knee extension or flexion, nor ankle dorsiflexion and eversion. Taping did significantly ($p<0.01$) reduce ankle plantar flexion (5.75º) and inversion (7.25º) ROM. While ankle taping brought about an average 16% and 6% increase in jump performance for DJ and SLJ respectively, results were not statistically significant.

DISCUSSION: The use of prophylactic ankle taping had no short-term influence on jump performance of healthy young subjects. Further analysis will examine variability of take-off and landing forces to ascertain whether any performance benefits found through the use of taping could be associated with increased landing forces thus injury potential.

CONCLUSION: Ankle taping has been found for dynamical exercise to not reduce performance and potentially may be of benefit to some individuals but dependent on the level of ROM.

REFERENCES:

Abián-Vicén, J. et al. (2008). Ankle taping does not impair performance in jump or balance tests. *Journal of Sports Science and Medicine*, 7, 350 – 356.

Hume, P.A. and Gerrard, D.F. (1998) Effectiveness of external ankle support. *Sports Medicine*, 25, 285-312.

Jones, D., Louw, Q. and Grimmer, K. (2000) Recreational and sporting injury to the adolescent knee and ankle: prevalence and causes. *Australian Journal of Physiotherapy*, 46, 179-188.