Effect of Ankle Taping On Vertical Jump Performance Before and After Participation in Basketball Drills

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Introduction

Ankle taping has been shown to effectively restrict ankle range of motion (ROM)[1] and is a common method of preventing and treating ankle injuries.[2] However, ankle taping may effect exercise performance, specifically vertical jump height.

Purpose

This study investigates the effect ankle taping has on countermovement vertical jump performance pre- and post-exercise.

Procedure

- Ten Division III male collegiate basketball players consented to participate in this study.
- Ten minute general dynamic warm-up preceded the testing.
- Three baseline countermovement jumps were performed on the Just Jump mat without ankles taped (jump heights were recorded to the nearest centimeter).
- Both ankles were then taped by a certified athletic trainer using a figure 8's and heal lock method.
- Three countermovement vertical jumps were performed with the ankles taped.
- Four intense basketball related drills involving running, shuffling, change of direction, and jumping were performed for fifteen minutes to simulate a game or practice conditions.
- Ten minute rest period followed the basketball drills to allow for adequate recovery.
- Three countermovement vertical jumps were performed post-exercise with the ankles taped.

Results

One-way repeated measures analysis of variance (ANOVA) with a Bonferroni confidence interval adjustment revealed significant differences between the three trials ($F(2, 18) = 37.87$, $p < .001$).

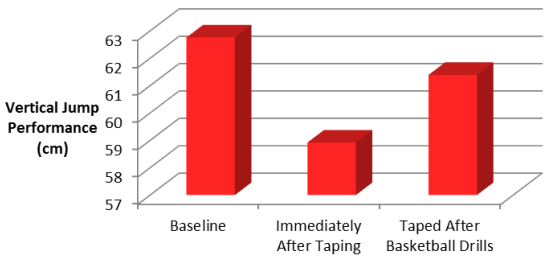

Figure 1. Comparisons of average vertical countermovement jump without ankle taping, immediatly after ankle taping, and after ankle taping with basketball specific drills

	Vertical Jump Performance
Baseline	62.76
Immediately After Taping	58.92
Difference Between Baseline and Immediately after Taping	3.84*

Table 1. Average vertical jumper performance (cm) for baseline and immediately after taping. * indicates significant results ($p < 0.05$)

	Vertical Jump Performance
Baseline	62.76
Taped Post Drill Performance	61.39
Difference Between Baseline and Taped Post Drill Performance	1.37*

Table 2. Average vertical jump performance (cm) baseline and post-drill performance * indicates significant results ($p < 0.05$)

Discussion

Ankle taping results in a significant reduction in countermovement jump height compared to baseline.

After 15 minutes of basketball specific drills, countermovement jump height with the ankle taped continued to be significantly reduced compared to baseline.

Conclusion

This study shows ankle taping does have a detrimental effect on vertical jump performance in male collegiate basketball athletes, both immediately after ankle taping and after fifteen minutes of basketball specific drills.

Literature cited

1. Ambegaonkar, J., Redmond, C., Winter, C., Cortes, N., Ambegaonkar, S., Thompson, B., & Guyer, S. (2011). Ankle stabilizers affect agility but not vertical jump or dynamic balance performance. *Foot & Ankle Specialist*, 4(6), 354-361.
2. Cordova, M., Ingersoll, C., & LeBlanc, M. (2000). Influence of ankle support on joint range of motion before and after exercise: A meta-analysis. *Journal of Orthopaedic & Sports Physical Therapy*, 30(4), 170-182.

Acknowledgments

Thank you to the University of Saint John's Basketball Team and Coach Jim Smith for their cooperation and participation in our study.