

The Effect of Spatting on Speed, Agility, Power and Balance

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Introduction

Ankle spatting is a popular prophylactic application of tape over the shoe used to decrease the number and severity of ankle injuries. Studies on ankle spatting are uncommon, but have shown that spatting restricts range of motion and resists loosening more effectively than traditional taping. The general consensus in the athletic community is that ankle spatting facilitates performance but, to date, no research has been done to support this contention.

Purpose

The aim of the study was to determine the influence of ankle spatting on athletic performance as it relates to speed, agility, power, and balance among competitive athletes and recreationally active individuals. We hypothesized that ankle spatting will negatively effect speed, agility, power, and balance.

Methods

- ❖ Division III collegiate male football players and recreationally active individuals
- ❖ Randomly ordered application:
 - ❖ Bare ankle
 - ❖ Ankle brace
 - ❖ Ankle brace and spat
- ❖ 5 minute warm-up
- ❖ Randomly tested:
 - ❖ Balance (Biodex SD)
 - ❖ Vertical jump (Vertec)
 - ❖ T-test
 - ❖ 40-yard dash (Brower Timing System)



Statistical Analysis

The primary dependent variables were the height of vertical jump, T-test time, 40-yard dash time, and balance test score. The primary independent variables were treatment, which included bare ankle, ankle brace, and ankle brace with spat. Differences in the primary outcome variables between bare ankle treatment, ankle brace, and ankle brace with spat were determined using a repeated measures analysis of variance corrected for multiple comparisons using the Bonferroni method in which the within subjects variable was treatment. Non-parametric repeated measures comparisons for balance index stability scores were analyzed using the Friedman's Test.

Results

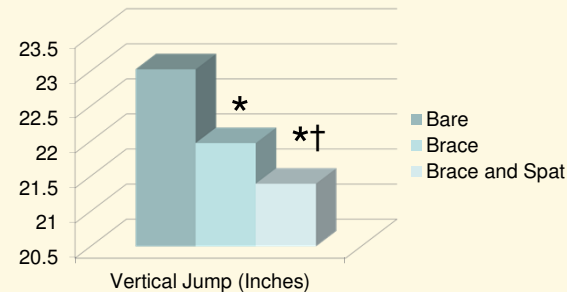


Figure 1. Intra-subject vertical jump height (bare vs. brace vs. brace and spat). *P<0.05 vs. bare, †P<0.05 vs. brace

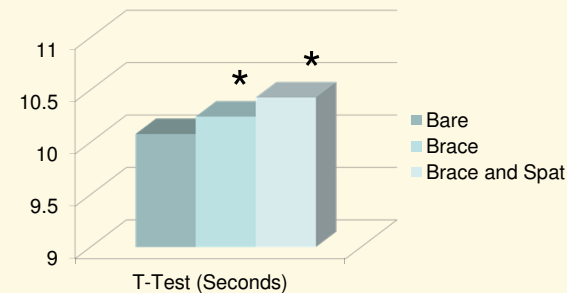


Figure 2. Intra-subject T-test time (bare vs. brace vs. brace and spat). *P<0.05 vs. bare

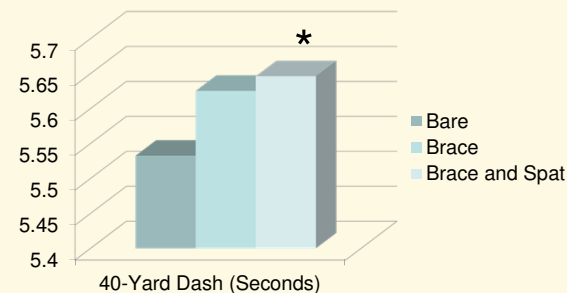


Figure 3. Intra-subject 40 yard dash time (bare vs. brace vs. brace and spat). * P=0.05 vs. bare

Discussion

There seems to be a trend that performance on the field may be effected with more restriction of the ankle joint. Spatting resulted in the worst test performance in our subjects, while bare ankles, with no restriction, had the best performances as a whole.

An inch higher in vertical jump for a football player could be the difference in making an interception or the receiver catching a pass. Similarly, increases in athletic performance in the T-test and 40-yard dash are crucial to performance in football, and other sports.

Our results indicate that there was no statistical difference in balance between each application. We noted that when spatting, the athletes had to use the hand rails more often and corrected their balance by deviating at the hip and knee. One of the limitations of this study was the inclusion of subjects in whom spatting is not applicable.

Further evaluation should be done on the effects of performance by focusing on football players since it is more applicable to this population. This should be done in an environment that is closer to that which they participate in (i.e. grass, turf, cleats, pads, etc.) It may also be helpful to incorporate a psychological evaluation or survey to have input on how it feels to the subject.

Conclusion

Our findings suggest that spatting may have a negative effect on performance. The benefits and drawbacks of spatting the ankle joint with respect to injury prevention and performance should be weighed appropriately before an athlete elects to spat and brace. Further research should be conducted to study the effects of spatting on injury prevention to establish if these effects offset the results on performance.



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