

# THE EFFECT OF THE BALANCE BOARD TRAINING FOR COLLEGIATE FOOTBALL PLAYERS WITH FUNCTIONAL ANKLE INSTABILITY

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## Introduction

Ankle sprains are the most common injuries in the football (soccer). Functional ankle instability (FAI) is cited as an after effect of an ankle sprain and is one of the causes of a relapse of an ankle sprain. Balance board training is featured as a way of rehabilitation for the FAI and the improvement of posture control has been reported. However, only a few studies of the effects tested from muscle reaction time (MRT) have been found. Therefore, the purpose of this study, verify the effects of the balance board training on the football players with FAI by the variation of MRT.

## Methods

The subjects were seven male collegiate football players with FAI. Karlsson score was used to evaluate FAI. Balance board training, standing on one foot, was proceeded for 12 weeks; five minutes a day and five days a week. MRT was measured by a trap door that simulated the mechanism of an inversion-ankle sprain. Electromyographical data (EMG) on the peroneus longus muscle (PL), the peroneus brevis muscle (PB) and the tibialis anterior muscle (TA) was recorded. MRT was defined as the length of time between when the Trapdoor had begun to tilt and the onset of muscle contraction.

## Results & Discussion

MRT of PB was significantly shortened after the training ( $51.5 \pm 20.1$ ms) compared with that of the pre-training ( $76.6 \pm 26.9$ ms) ( $p < 0.05$ ). As for the other muscles, there were no significance. Previous research reported that posture control was improved because of the training; it may be affected by shortening of the MRT of PB.

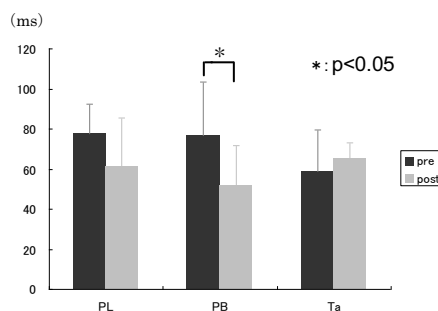


Figure 1. The difference of MRT

## Conclusion

As a result of the balance board training to the football players with FAI, MRT of PB was significantly shortened.

## References

1. Evert Verhagen et al. (2004).Am J Sports Med, 32(6):1385-93.