2015

# Specific Sport Training Effect on FMS and Y Balance Scores

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## Introduction

The Functional Movement Screen (FMS) and Y-Balance Test (YBT) are functional measurement tools utilized for injury prevention, performance predictability, and as return to sport criteria. The FMS is comprised of 7 standardized tests of movement patterns that are rated from 0-3 and includes: Deep Squat, Hurdle Step, In-Line Lunge, Shoulder Mobility, Active Straight Leg Raise, Trunk Stability Push-Up, and Rotary Stability. The YBT is a measurement of single leg stance in the anterior, posteromedial, and posterolateral directions that is advocated for assessing dynamic balance. There lacks evidence that collegiate athletes in different sports that require specific training programs and physical attributes perform differently on functional screens.

## Purpose

The purpose of this study is to determine if collegiate athletes perform significantly different on the Functional Movement Screen and Y-Balance Test.

## Hypothesis

Collegiate baseball and basketball players will score better than XC runners on the FMS and Y-balance tests.

## Subjects

14 Division I Basketball players,16 Division I XC runners and 33 Division I & III baseball players


**Table 1: Group Descriptive Data**

| | Avg. Y Balance Composite Score | Avg. FMS Composite Score |
|---|---|---|
| Basketball (1) | 3.48 | 15.571 |
| XC (2) | 3.97 | 15.875 |
| Baseball (3) | 4.85 | 15.394 |

**Table 2: Post Hoc 1 Way ANOVA**

| Y Balance Composite Score | | p-value | FMS Composite Score | | p-value |
|---|---|---|---|---|---|
| Basketball (1) | | | Basketball (1) | | |
| | 2 | 0.576 | | 2 | 0.633 |
| | 3 | 0.077 | | 3 | 0.748 |
| XC (2) | | | XC (2) | | |
| | 1 | 0.576 | | 1 | 0.633 |
| | 3 | 0.233 | | 3 | 0.364 |
| Baseball (3) | | | Baseball (3) | | |
| | 1 | 0.077 | | 1 | 0.748 |
| | 2 | 0.233 | | 2 | 0.364 |

## References

1.Schneiders A, Davidsson Å, Hrman E, Sullivan S. *International Journal Of Sports Physical Therapy* 2011;6(2):75.
2.Gribble P, Hertel J, Plisky P. *Journal Of Athletic Training* 2012;47(3):339-357

## Methods

14 NCAA Division I basketball players, 16 NCAA Division I Cross Country Runners, and 33 NCAA Division III Baseball players were tested with the FMS and Y Balance tools. Scores were collected by a group of trained DPT students from the University of Dayton.

## Results

Post-Hoc 1 Way ANOVA data demonstrated no significant differences between groups on FMS or Y Balance scores. However, basketball Y Balance scores were collectively lower than the Cross Country runners and Baseball players, which indicates higher FMS scores for the Basketball players.

## Discussion

In this exploratory pilot study, no significant differences were found in FMS or YBT scores between sports. Because it was fond that there are differences among averages between teams, a larger study that is able to randomly pool athletes from different schools in the same division may provide more useful information. It is important to understand the sport specific performance requirements and training type among different sports when considering utilization of the FMS and YBT for injury prevention, performance predictability, and as return to sport criteria.