

Seasonal DXA-measured body composition changes in professional male soccer players

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Objective

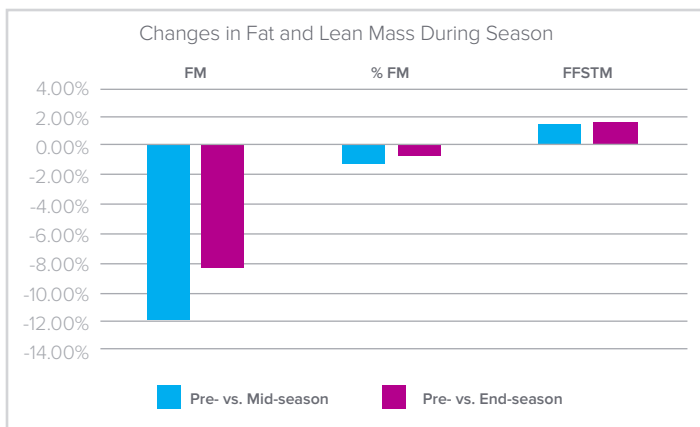
The purpose of this study was to evaluate the in season changes in body composition amongst professional soccer players. It is understood that accurate assessment of body composition is relevant to the player’s physiological status and performance. Furthermore, in season variables such as training, diet and stress of competition may play key roles in changes of an athlete’s body composition and performance.

Methods

Thirty-one players were evaluated at 3 points during the season (pre-, mid- and end-season) using both Dual-Energy X-Ray Absorptiometry (DXA) and anthropometric assessment. Two players, undergoing serious injury were excluded from the final analysis. Analysis included evaluation of whole body and regional body composition including fat mass, fat-free soft tissue mass, mineral mass and bone mineral density. All DXA scans during this data collection were performed by the same operator using the same equipment to ensure consistency.

Results

This study showed that the whole-body fat mass (FM) and %FM significantly decrease at mid-season (-11.9%; -1.3%, respectively) and end-season (-8.3%; -0.8%, respectively). At the same time the fat free soft tissue mass (FFSTM) significantly increase at mid-season (+1.3%) and end-season (+1.5%). Also noticed were significant changes in bone mineral content across all athletes. While body composition varied by player position, the in-season changes were similar across all positions.



	Pre-season	Pre- vs. Mid-season	Pre- vs. End-season
FM	8.6Kg	(11.9%)	(8.3%)
%FM	11.2%	(1.3%)	(0.8%)
FFSTM	64.8Kg	1.3%	1.5%

Summary

The conclusion of this study is that during the season professional soccer players undergo changes in their FM, FFSTM, and mineral mass. DXA scans can play a key role for coaches and trainers in evaluating and customizing an athletes training and diet programs and how they affect body composition.