
ORIGINAL RESEARCH

EFFECTS OF A SEASON OF SUBCONCUSSIVE CONTACT ON CHILD- SCAT3 SCORES IN 8-12 YEAR-OLD MALE ATHLETES

David Jennings, PT, DPT, LAT, ATC¹
Pat Sells, DA, CCES¹
Jenni Allison, PT, DPT¹
Kasey Boyd, PT, DPT¹
Dave Frommert, PT, DPT¹
Chelsea Kessler, PT, DPT¹
Lindsey Merryman, PT, DPT, LAT, ATC¹
Joe Muchmore, PT, DPT¹
TJ Odom, PT, DPT¹
Ryan Salmon, PT, DPT¹
Kevin Robinson, PT, DSc, OCS¹

ABSTRACT

Background: Each year, over 173,000 children and adolescents visit emergency departments due to sports and recreation related concussions, an increase of 60% over the last decade due to the rise in the number of children participating in sport. While numerous authors have sought to address the epidemiology of concussions across multiple age groups who participate in contact sports, a recent review of literature did not reveal a substantial amount of published articles that addressed the issue of subconcussive contact. Multiple tools have been developed to assess acute episodes of concussion. Among the assessment protocols many include an assessment of balance, short and long term memory recall, and balance. The Child-SCAT3 was designed specifically to evaluate concussions in children 5-12 years of age.

Objective: The purpose of this study was to determine the effect of a season of subconcussive contact on Child-SCAT3 scores in 8-12 year old males compared to their age matched peers who participated in non-contact sports. A secondary purpose was to evaluate how scores of the sub- components of the Child-SCAT3 compare between contact and non-contact athletes.

Design: A prospective cohort study was performed of 71 male athletes (58 football, 13 baseball) ages 8-12 (contact mean age 10.30 years, SD 1.20; non-contact mean age 10.03 years, SD 1.26) over the course of a season.

Methods: Portions of The Child-SCAT3 were administered and scored in pre-adolescent athletes prior to and following a season of participation in football (contact sport group) and baseball (non-contact sport group). The outcome measures of interest included the portions related to Cognitive ability, Balance, and Coordination.

Results: No statistically significant differences were found in group, time or time and group interaction for any of the utilized portions of the Child-SCAT3. Statistically significant differences were found between groups for preseason cognitive orientation and postseason immediate memory. Cognitive orientation and coordination were also found to be statistically significantly improved across both groups over the course of the season.

Limitations: This study was potentially limited by the number of control subjects tested.

Conclusions: A season of subconcussive contact in football was not detrimental to cognitive and balance scores on the Child-SCAT3.

Level of Evidence: 3

Key words: Child-Scat3, football, subconcussive contact

CORRESPONDING AUTHOR

David Jennings, PT, DPT, LAT, ATC
Belmont University
School of Physical Therapy
1900 Belmont Blvd.
Nashville, TN 37212
Phone: 615-460-6727
E-mail: David.L.Jennings1@gmail.com

¹ Belmont University, School of Physical Therapy, Nashville, TN USA