Normative Balance Error Scoring System (BESS) results in the high school male athlete

Timothy Duer, PT, MS, CSCS, SCS

1 Nemours, AI duPont Hospital for Children, Center for Sports Medicine, Wilmington, DE.

OBJECTIVES
• The BESS has been shown to be a reliable tool in sideline assessment of balance, and is often used as an assessment tool for post-concussion balance.
• As same subject baseline comparison is not typically available, subject scoring is compared to normative data; however, this data is limited in the adolescent athlete.

METHODS
• Data was collected through retrospective analysis of athlete BESS scores gathered as part of a preseason comprehensive baseline concussion program.
• Further analysis was done with student’s t-test for comparison of subjects age 13-16 versus ages 17-18.

SUBJECTS
• 545 male high school athletes tested prior to participation in contact sports of the fall, winter and spring seasons.
• Subjects were between 13-18 years old, mean age of subjects was 15.4 years +/- 1.2.

RESULTS
• Mean total BESS score for the group as a whole was 14.9 +/- 6.4
  • Firm 4.2 +/- 3.1
  • Foam 10.7 +/- 4.3
• When BESS total results for ages 13-16 (mean=15.3 +/- 6.5, n= 428) are compared to ages 17-18 (mean =13.6 +/- 5.9, n=117), a significant difference is noted (p=0.008).

CONCLUSIONS and DISCUSSION
• The significant difference in performance of the younger versus older high school athlete is consistent with the ongoing vestibular system development in the younger group.
• Further study may be warranted to assess the impact, not only age, but also of preferred sport on BESS performance.

CONTACT INFORMATION
TDuer@nemours.org