TACSM Abstract

Soccer Fatigue's Effect on Standardized Assessment of Concussion (SAC) Test

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ABSTRACT

The Standardized Assessment of Concussion (SAC) assessment tool was developed to objectively assess an athlete's cognitive functioning on the sideline in order to properly determine safe return to play for an athlete following a possible concussion. It is intended to administer a baseline SAC test to athletes during exercise, but often it is administered at rest. **PURPOSE:** the purpose of this study is to explored the relationship between soccer fatigue and cognitive function as it relates to sideline concussion assessment in order to help sports medicine clinicians make return to play decisions after a possible concussion. **METHODS:** Seventeen (n=17) collegiate soccer players volunteered for this study. Each signed a university-approved informed consent prior to testing. Pre-test measures included the following: medical questionnaire, height (in), weight (lb), age (y). Subjects completed a warm-up and then ran the Yo-Yo Intermittent Recovery (Yo-Yo IR) test until failing twice. At three times during the testing the subjects' had their heart rate ($b*min.^{-1}$) assessed and were administered a version of the SAC test: before warm-up (baseline), immediately following the Yo-Yo IR test (post-exertion), and 20 minutes after the Yo-Yo IR test (recovery). A dependent samples T-test statistical analysis was conducted using the baseline, post-exertion, and recovery SAC scores. Level of statistical significance was set *a priori* at p= 0.05. Clinical significance was set at a decrease of one or more points. **RESULTS:** Demographic means (SD) were the following: gender, 7 female, 10 male; age, 19.8 (1.4); height, 69.12 (3.8); weight, 154.5 (22.9). The mean (SD) SAC scores were—baseline, 25.7 (2.0); post-exertion, 25.0 (2.4); recovery 25.9 (1.5). There was no statistical difference between baseline and post-exertion SAC scores (p = 0.26), baseline and recovery SAC scores (p = 0.61), or post-exertion and recovery SAC scores (p = 0.16).**CONCLUSION:** Although mean scores did not statistically vary, clinically significant individual fluctuations were observed. Until further studies are completed, sports medicine clinicians should follow SAC protocols by administering baseline SAC tests while athletes are exercising and should never base return to play decisions solely on SAC scores, but rather an array of evaluation tools.