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### Original Research

## Investigation of Baseline Self-Report Concussion Symptom Scores

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### Abstract

**Context:** Self-reported symptoms (SRS) scales comprise one aspect of a multifaceted assessment of sport-related concussion. Obtaining SRS assessments before a concussion occurs assists in determining when the injury is resolved. However, athletes may present with concussion-related symptoms at baseline. Thus, it is important to evaluate such reports to determine if the variables that are common to many athletic environments are influencing them.

**Objective:** To evaluate the influence of a history of concussion, sex, acute fatigue, physical illness, and orthopaedic injury on baseline responses to 2 summative symptom scales; to investigate the psychometric properties of all responses; and to assess the factorial validity of responses to both scales in the absence of influential variables.

**Design:** Cross-sectional study.

**Setting:** Athletic training facilities of 6 National Collegiate Athletic Association institutions.

**Patients or Other Participants:** The sample of 1065 was predominately male ( $n = 805$ ) collegiate athletes with a mean age of  $19.81 \pm 1.53$  years.

**Main Outcome Measure(s):** Participants completed baseline measures for duration and severity of concussion-related SRS and a brief health questionnaire.

**Results:** At baseline, respondents reporting a previous concussion had higher composite scores on both scales ( $P \leq .01$ ), but no sex differences were found for concussion-related symptoms. Acute fatigue, physical illness, and orthopaedic injury increased composite SRS scores on both duration and severity measures ( $P \leq .01$ ). Responses to both scales were stable and internally consistent.

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Confirmatory factor analysis provided strong evidence for the factorial validity of the responses of participants reporting no fatigue, physical illness, or orthopaedic injury on each instrument.

**Conclusions:** A history of concussion, acute fatigue, physical illness, and orthopaedic injury increased baseline SRS scores. These conditions need to be thoroughly investigated and controlled by clinicians before baseline SRS measures are collected.

**Keywords:** [baseline evaluation](#), [factorial validity](#), [Postconcussion Symptom Scale](#)

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