Postconcussive symptoms are associated with compensatory cortical recruitment during a working memory task.


Source

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Abstract

BACKGROUND:

The severity of sports-related concussion is often characterized by the number and severity of postconcussive symptoms (eg, headache, dizziness, difficulty concentrating). Although the level of postconcussive symptoms after injury is believed to index the severity of the neurological insult sustained, studies examining the relationship between symptom severity and neural functioning in concussed athletes remain rare.

OBJECTIVE:

This exploratory study examined the association between self-reported symptom severity and functional activation on a working memory task in a group of 16 recently concussed student athletes.

METHODS:

Functional magnetic resonance imaging was used to examine the relationship of symptom severity to brain activation during a working memory task in 16 concussed subjects.

RESULTS:

Findings indicated that symptom severity was associated with regionally specific hyperactivation during a working memory task, even though symptom severity was not significantly related to task accuracy.

CONCLUSION:

The results add to a growing body of literature that demonstrates that functional neuroimaging may have the potential to serve as a sensitive biomarker of the severity of concussion and mild traumatic brain injury.