

Study finds head impacts in contact sports may reduce learning in college athletes

May 16 2012

A new study suggests that head impacts experienced during contact sports such as football and hockey may worsen some college athletes' ability to acquire new information. The research is published in the May 16, 2012, online issue of *Neurology*, the medical journal of the American Academy of Neurology.

The study involved [college athletes](#) at three Division I schools and compared 214 athletes in [contact sports](#) to 45 athletes in non-contact sports such as track, crew and Nordic skiing at the beginning and at the end of their seasons. The contact sport athletes wore special helmets that recorded the acceleration speed and other data at the time of any [head impact](#).

The contact sport athletes experienced an average of 469 head impacts during the season. Athletes were not included in the study if they were diagnosed with a [concussion](#) during the season.

All of the athletes took tests of thinking and memory skills before and after the season. A total of 45 contact sport athletes and 55 non-contact sport athletes from one of the schools also took an additional set of tests of concentration, [working memory](#) and other skills.

"The good news is that overall there were few differences in the test results between the athletes in contact sports and the athletes in non-contact sports," said study author Thomas W. McAllister, MD, of The Geisel School of Medicine at Dartmouth in Lebanon, N.H. "But we did

find that a higher percentage of the contact sport athletes had lower scores than would have been predicted after the season on a measure of new learning than the non-contact sport athletes."

A total of 22 percent of the contact sport athletes performed worse than expected on the test of new learning, compared to four percent of the non-contact sport athletes.

McAllister noted that the study did not find differences in test results between the two groups of athletes at the beginning of the season, suggesting that the cumulative head impacts that contact athletes had incurred over many previous seasons did not result in reduced thinking and [memory skills](#) in the overall group.

"These results are somewhat reassuring, given the recent heightened concern about the potential negative effects of these sports," he said. "Nevertheless, the findings do suggest that repetitive head impacts may have a negative effect on some athletes."

McAllister said it's possible that some people may be genetically more sensitive to head impacts.

Provided by American Academy of Neurology

Citation: Study finds head impacts in contact sports may reduce learning in college athletes (2012, May 16) retrieved 27 April 2024 from <https://medicalxpress.com/news/2012-05-impacts-contact-sports-college-athletes.html>

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