

Brain Trauma: Moving the Focus From Play to Practice

On behalf of Johnston, Moore & Thompson

- November 22, 2010

Over the last few years, the focus on football-related [brain injuries](#) has been on safety improvements that can be made during the game. A recent study of three Division I college teams suggests, however, that the focus of concern should move from prevention on game day to prevention every day.

The total hits to the head experienced in practice are greater than the total of those experienced during games. The study measured hits to the head both qualitatively and quantitatively. The teams measured in the study experienced around 3,000 hits to the head during a full season of practice.

The study categorized the hits according to G's of force -- multiples of the force of gravity. The first category included blows of between 50 to 70 G's of force. These hits were labeled as "significant blows," and each team received around 2,500 of them during practices over the season.

The second category included hits in the range of force between 80 to 119 G's and was labeled "concussion-causing." The teams received around 300 concussion-causing hits during the season, and these are considered a possible source of mild traumatic brain injury.

Finally, the third, unlabeled category included hits at forces above 120 G's. Each team in the study experienced around 200 of these hits over the course of their practice season. Experts analogize hits at this level to crashing a car into a concrete wall at 40 miles per hour.

Concern over total hits has been magnified by the death of a University of Pennsylvania lineman who killed himself last spring. The young man had not suffered one diagnosed concussion, yet was diagnosed with early chronic traumatic encephalopathy (CTE). It is believed that his disease developed through innumerable sub-concussive hits he likely sustained while playing football.

Around 58 percent of reported sports-related [concussions](#) happen during practice. Some colleges have outfitted their players with special helmets to identify what practice drills create the greatest danger, so coaches and researchers can determine which drills could be adjusted to decrease the risk of brain injury.

The greatest concern about brain injury is with the generation of athletes in high school and younger. The extent to which concussions can create brain damage is not clear in young players.

A former Harvard lineman and co-founder of the Sports Legacy Institute commented that practices should be reinvented because brain trauma is not correlated to success in football.

Source: The New York Times, "[For Head Injuries, a Problem in Practice](#)," Alan Schwarz, September 16, 2010