

NEWS
For Immediate Release
August 3, 2005

Contact: Michael L.J. Apuzzo, MD
Office: (323) 442-3001
Email: apuzzo@hsc.usc.edu

Contact: Brian J. O'Malley
Office: 856-770-0276
Cell: 856-264-8979
Email: brian@fourDcom.com

Concussions in Youth Athletes a Public Health Threat

LOS ANGELES – High school athletes with a history of two or more concussions are at risk for long-term cognitive impairment, and a widespread lack of knowledge regarding concussive symptoms and treatment pose a public health threat for sports participants according to a study published in the August edition of *Neurosurgery*, the official journal of the Congress of Neurological Surgeons.

Researchers Dr. Rosemarie Scolaro Moser, Dr. Philip Schatz, and Dr. Barry Jordan analyzed data from neuropsychological tests administered to 223 high school student athletes ages 13 – 19. Results were divided into four groups according of concussive history: no concussion, one concussion, two or more concussions and concussions sustained one week prior to testing.

Scores for attention, concentration, processing speed and mental flexibility were significantly lower for athletes with two or more concussions and students concussed just a week before.

The findings indicate young athletes with a history of repeated concussion suffer diminished cognitive ability for the long-term.

The cumulative grade point averages (GPAs) of the multiple concussion group and the recently concussed group were also notably lower than other groups. The data could signify a possible link between a history of repeated concussions and low GPAs.

Many athletes described concussive episodes, as defined by the American Academy of Neurology, without realizing they had sustained a concussion. Parents in attendance during the interview phase of the study were surprised to hear their children's accounts of headache, dizziness and fatigue after receiving a hard hit in a game, and often said it was the first time they heard about the symptoms.

"Many kids may not report possible concussive symptoms, especially if they want to stay in the game," said lead study author, Dr. Moser from her office in Lawrenceville, NJ. "When the scenario includes coaches, parents and athletes unaware of the symptoms and causes of concussion, in addition to a complete

lack of baseline evaluations, it isn't difficult to see how this grew into a large public health threat."

The members of the repeat concussion group averaged two years more athletic participation in the sports of ice hockey, field hockey, lacrosse and soccer than the other children.

The findings support earlier studies suggesting the brain is vulnerable to concussion during crucial developmental stages and a repeat concussion sustained before the first is healed could result in permanent, negative consequences.

"This study indicates the youth brain is more vulnerable to cerebral concussion than athletes at the collegiate and professional level," said Dr. Schatz of Saint Joseph's University in Philadelphia. "Previous research has shown that concussive episodes during critical stages of brain development impair the brain's neuroplasticity, or its ability to organize and reorganize connections in response to experience or incoming sensory information."

The article's authors are urging school districts to provide pre-season baseline testing for young athletes in addition to education and prevention programs. They say the current lack of knowledge about concussions and inadequate assessment and management systems are too great a risk to an athlete's health.

Neurosurgery's Editorial Board Principal for Sports, Robert C. Cantu, MD of Emerson Hospital in Concord, MA, cautions that there is no "magic number" of concussive episodes to suit every athlete.

"The determining factors are the number of episodes, how close they occurred to one another and their severity," Dr. Cantu said. "Adequate recuperative time must to be allowed based on those considerations, but as this study readily illustrates, the current model for youth athletics does not provide the necessary data to make an appropriate assessment. That has to change."

###

Neurosurgery, the Official Journal of the Congress of Neurological Surgeons is the most complete publication about the contemporary field of neurosurgery. Members of the Congress and non-member subscribers receive 4,000 pages per year of the latest science, technology, medicine and full-text online access to the world's most recent neurosurgery information. **Neurosurgery's** editorial office is located in Los Angeles, CA and is published by Lippincott Williams & Wilkins of Philadelphia, PA. Visit www.neurosurgery-online.com for more information.