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Concussions in High School Sports: Study Reveals Symptom Differences in Male and Female Athletes

***Results presented at National Athletic Trainers' Association
Second Youth Sports Safety Summit in Washington, D.C.***

DALLAS, December 7, 2010 – According to “Sex Differences in Concussion Symptoms of High School Athletes,” a new study to be published in the January 2011 issue of the *Journal of Athletic Training*, the National Athletic Trainers' Association's scientific publication, male and female high school athletes present different types of symptoms after experiencing a sport-related concussion. While males report more cognitive symptoms, females report more neurobehavioral and physical symptoms. Even with these symptomatic differences, the time needed for recuperation before returning to play did not differ by gender, according to the report.

Results of the study were advance released today at NATA's second Youth Sports Safety Summit in Washington, D.C., at the Cannon House Office Building. The program was supported by the Youth Sports Safety Alliance, comprising 40 sports and health organizations.

Although males continue to participate in sports at a higher rate than females (in 2008 41 percent of high school athletes were female), female athletes are now more likely than male athletes to suffer sport-related concussions. “As more girls and young women participate in rough-and-tumble sports, understanding possible differences in concussion symptoms between the two genders has become increasingly important,” said R. Dawn Comstock, PhD, associate professor at The Ohio State University College of Medicine, an author of the study and Summit speaker.

Currently there are more than 7 million high school students participating in organized interscholastic athletics in the United States each year. An estimated 1.6 to 3.8 million sport-related concussions are sustained every year, with an average of 21 percent occurring in high school athletes. In fact, more than 5 percent of all high school athletes who participate in football, lacrosse, hockey and other contact sports suffer a concussion each year.

Concussions: An Elusive Diagnosis with Gender Differences

“Diagnosing sport-related concussions is one of the most difficult tasks faced by sports medicine clinicians,” Comstock added. “No biological markers exist to detect concussion, so diagnosis largely depends on a patient's own report. Diagnosing concussion is further complicated by the tendency of many athletes to underreport or hide symptoms from their doctors, athletic trainers, coaches and parents.”

The study found no difference in the number of symptoms reported by males and females; however, athletes often reported different types of symptoms, depending on their gender. For example, males reported amnesia and confusion/disorientation more frequently than females; females reported more drowsiness and greater sensitivity to noise than males.

“Physicians, athletic trainers, coaches and parents should understand that each symptom of a possible concussion must be evaluated, monitored and fully resolved, before an athlete returns to play,” said Comstock. “Ongoing neurocognitive assessments, balance measurements, symptoms, a physical examination and other criteria can be used collectively to evaluate concussions and ensure an athlete – whether male or female – is ready to return to the playing field.”

Participants in the study included those high school athletes who sustained concussions while involved in interscholastic sports practice or competition in nine sports (boys’ football, soccer, basketball, wrestling and baseball, and girls’ soccer, volleyball, basketball and softball) during the 2005-06 and 2006-07 school years. A total of 812 sport concussions were reported (610 males, 202 females). “Sex Differences in Concussion Symptoms of High School Athletes,” will be published in the January 2011 issue of the *Journal of Athletic Training*.

The second Youth Sports Safety Summit was designed as a follow-up to the inaugural Summit held in January in Sacramento, Calif. The program, “One year later: a report card on the youth sports safety crisis,” included medical presentations and select case histories on sudden cardiac arrest, exertional heat illnesses, brain injury/concussion and sickle cell trait, all of which reinforced the vital need for continued research, education and improved youth sports safety legislation.

For more information on the Summit and the Youth Sports Safety Alliance, please visit www.youthsportssafetyalliance.org.

National Athletic Trainers’ Association (NATA) – Health Care for Life & Sport

Athletic trainers are health care professionals who specialize in the prevention, diagnosis, treatment and rehabilitation of injuries and sport-related illnesses. They prevent and treat chronic musculoskeletal injuries from sports, physical and occupational activity, and provide immediate care for acute injuries. Athletic trainers offer a continuum of care that is unparalleled in health care. The National Athletic Trainers’ Association represents and supports 32,000 members of the athletic training profession. NATA supports the Athletic Trainers’ Equal Access to Medicare Act (H.R. 1137). Visit www.nata.org

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