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THE NUMBERS

Short on Concussion Data, NCAA Sets Out to Get Some

Initiative aims to track athletes' head injuries from onset through recovery



The University of Maryland's Melo Trimble is helped off the court by head trainer Matt Charvat in the second half of a March Madness game last month after sustaining a head injury. He was later diagnosed with a concussion.

PHOTO: PAUL VERNON/ASSOCIATED PRESS



By

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The NCAA has had a concussion problem for years. But the organization has resisted issuing rules to diagnose and manage the debilitating brain injury, in part because it doesn't have enough scientific evidence upon which to base rules.

Now the National Collegiate Athletic Association is helping bankroll a project to

gather the information. In partnership with U.S. Department of Defense, it has launched a three-year, \$30 million project to track the effects of concussion using data from as many as 37,000 student athletes.

The study is one of several new NCAA-backed “big data” projects, according to Oliver Luck, the organization’s executive vice president of regulatory affairs. Other efforts include mandating schools to report to the National Center for Catastrophic Sport Injury Research, reviewing 30,000 electrocardiograms of student athletes to better identify cardiac abnormalities and conducting summits to examine injury, recovery and optimal training data related to a particular sport.

“It’s a fairly significant shift in the way the NCAA would like to look at issues,” said Mr. Luck, a former NFL quarterback who is the father of Indianapolis Colts quarterback Andrew Luck. “So many schools and coaches have knowledge of sports but have not been making decisions based on data. This is our effort to join that club” of institutions using data to inform decision making.

In the case of concussion, it also is a tacit acknowledgment the NCAA must address a problem that has led some athletes to sue and caused others to quit their sport rather than risk injury. Last year, the NCAA agreed to pay \$75 million to settle a class-action lawsuit over concussion-related claims.

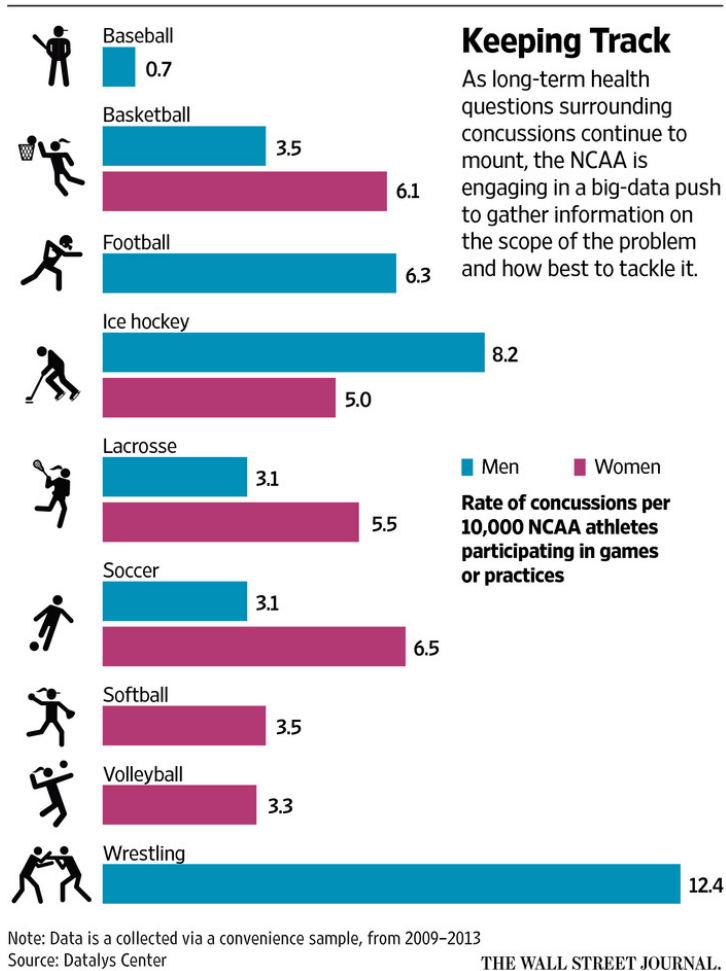
And the blows keep coming. Last month, University of Maryland freshman Melo Trimble hit his head twice in one game of the NCAA March Madness basketball tournament before a trainer led him, looking dazed, from the floor. He was later diagnosed with a concussion. A week later, Vanderbilt University quarterback Patton Robinette ended his Division I football career, saying his decision was influenced by having suffered a concussion on the field in September.

The new study aims to document the effects of concussion from onset through full recovery, providing the NCAA with the scientific evidence it says it lacks.

“The press, coaches and others talk as if we understand the natural history of concussion,” said Brian Hainline, a neurologist and the NCAA’s chief medical officer. “We’re giving recommendations without having definite answers.”

Traditionally, concussions have been diagnosed based on observable symptoms and what injured athletes volunteered about their condition. More recently, that approach has been augmented with baseline tests administered to athletes before a sports season begins to provide a point of reference in the event of injury.

The problem is athletes who want to get back in a game may inadvertently or



intentionally provide misleading information.

“If the person doesn’t drop to the ground and lie there unconscious, it’s not always clear whether they have a concussion,” said Thomas W. McAllister, chairman of the department of psychiatry at Indiana University School of Medicine, who is one of the principal investigators in the concussion study. “We rely on the athlete to self-report. Most don’t want to report.”

Indiana University, the University of

Michigan and the Medical College of Wisconsin are coordinating the study, which will include student-athletes attending the Army, Navy, Air Force and Coast Guard academies and about 30 different NCAA schools, phased in over the period. All NCAA-sanctioned sports will be included.

The DOD is interested in the research because military service personnel have a high incidence of concussion, most occur outside of combat and the injury is easier to study in a sports setting.

“Eighty percent of traumatic brain injuries in the military occur outside of the combat zone, with mechanisms that are similar to those experienced by collegiate athletes,” said Col. Dallas Hack, the brain health and fitness research coordinator of the U.S. Army Medical Research and Materiel Command who is leading the DOD’s participation in the concussion study. “Research in this cohort is much easier to accomplish logistically and will provide many of the answers that would help with the majority of brain injuries in servicemembers.”

Baseline data collected before a sport season begins will include tests of memory, attention and balance, medical history, and information on symptoms

associated with concussion such as depression and anxiety.

Athletes must consent to participate and may opt out at any time. Their identities won't be disclosed. Since August, 3,578 students have had baseline evaluations, Dr. McAllister said—and already 195 concussions have been diagnosed.

Once a concussion is diagnosed, the baseline tests are repeated five times over six months.

MORE NUMBERS

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Additionally, the University of North Carolina, UCLA, Virginia Tech and the University of Wisconsin, will

participate in advanced research of athletes who play football, soccer, ice hockey or lacrosse—sports with a high incidence of concussion.

These athletes will wear sensors in their helmets or, in non-helmet sports, somewhere on their body during games to count how often, how hard and from what direction they are hit, and in addition to the baseline information, they will have magnetic resonance imaging of the brain to monitor changes in structure and function; blood work to identify biomarkers that could be used as indicators of concussion or recovery; and genetic studies that may reveal whether some people are more susceptible to concussion or more readily recover afterward.

Data will be shared with the Federal Interagency Traumatic Brain Injury Research system operated by the National Institutes of Health.

It is too soon to predict how successful the research will be or how the NCAA will use the information produced by it and other big-data projects. But filling in gaps in knowledge with hard numbers, statistics and sound scientific research is the right call, and more than 450,000 NCAA athletes stand to benefit.

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