

Simple test helps doctors catch more concussions on the field

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On the football field, sometimes the signs of a concussion are subtle. A player may have taken a tough hit but isn't showing symptoms yet, and either doesn't notice anything is wrong or won't report it for fear of being taken out of the game.

Devastating injuries can occur if a concussed athlete continues to play. Luckily, researchers at the University of Florida and New York University have discovered a simple way to improve sideline detection of concussions. In an article published this month in the journal *Neurology: Clinical Practice*, the researchers report that adding one simple test to a team physician's sideline repertoire detected 100 percent of concussions that occurred during games.

"We want coaches to realize that the sooner we get them out, the sooner they can get back to a healthy state," said one of the study's co-authors, Dr. James Clugston, a UF team physician and an assistant professor of community health and family medicine in UF's College of Medicine. "If an athlete is playing with a concussion, there is a greater risk of getting a worse injury. Most of the time that means it takes longer to get better. It's also possible to get post-concussive syndrome, or second-impact syndrome, which may be fatal."

Researchers studied 217 athletes on UF's football team as well as the UF women's lacrosse and women's soccer teams for 18 months. During that time, 30 of the student-athletes were diagnosed with concussions they incurred during game competition or practice, Clugston said.

In the study, researchers evaluated the King-Devick test. Developed more than two decades ago, this vision test was initially used to evaluate children for learning disabilities. In 2011, NYU researchers, led by Dr. Laura Balcer, published findings showing that the test helped detect brain injury in boxers and mixed martial arts fighters.

During the test, athletes read a series of a numbers arranged in patterns on three index cards. Their baseline score is taken prior to play and used later to measure against their scores after a potential injury. During the UF study, this test was used in addition to the two other measures team physicians already use to evaluate potential concussions.

Alone, the King-Devick test identified concussions 79 percent of the time, but when combined with the other two tests—which measure cognition and balance—the trio was 100 percent accurate in recognizing concussions.

"This is the first study that has shown that adding a vision test helps to identify more athletes with concussion and shows the vision-based King-Devick test is very effective in a college setting," said Balcer, a professor of neurology and population health at NYU.

According to a 2013 Institute of Medicine and National Research Council report, concussions occurred in college athletes approximately every 4.3 out of 10,000 times they were on the field, either to practice or play.

UF team physicians are now using the full trio of tests to identify concussions in many of their athletes. In addition, more studies are planned to evaluate other tests and continue improving ways to detect concussions in athletes, Clugston said.

"These [athletes](#) have many things they want to do in life," Balcer said.

"Protecting their brains is important."

Provided by University of Florida

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