

In-depth diagnosis

Tests give clear-cut answers for concussions

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After generations of applying a mixed bag of solutions to the sports concussion scenario, sports medicine communities across the nation have taken the issue from a haze into sharp focus via the Immediate Post-Concussion Assessment and Cognitive Tool.

Through the North Colorado Sportsmedicine Clinic, ImpACT is being used to evaluate every District 6 student-athlete.

A concussion, commonly referred to as a ding or bell ringer, has the high risk of a catastrophic result, especially when the student-athlete is allowed to return too soon.

The ImpACT program is widely used at every level of competition, including the National Football League, NASCAR, Major League Baseball and the National Hockey League.

"Frankly, before this testing program, I don't think our sports medicine community has done a very good job of treating concussions," said Tracy Damrell, athletic trainer/program coordinator for North Colorado Sportsmedicine. "The ImpACT test takes a lot of the guesswork out of treating concussions."

ImpACT, a computer program, is primarily designed to determine the severity of a concussion and when a student-athlete should be released to continue competing. The program is marketed by the Department of Health and Human Services Centers for Disease Control and Prevention.

The CDC has also developed a tool kit -- Heads Up: Concussion in High School Sports -- which is used by athletic trainers at Greeley Central, Greeley West and Northridge. Athletic trainers at the University of Northern Colorado also use the ImpACT program.

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Central senior Jarrod Magnuson, 18, takes the ImpACT test Friday at the North Colorado Sportsmedicine in the Rehabilitation Building on the North Colorado Medical Center Campus. Magnuson suffered a concussion last year while playing football and the test evaluates how his brain reacts.

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The cost has been absorbed by private donations and the generosity of North Colorado Medical Center and North Colorado Sportsmedicine, which administers the test free of charge.

It measures verbal and visual memory, motor speed, reaction time and impulse control, and it's stressed that a student-athlete who has suffered a concussion -- from mild to severe -- should be treated via the ImPACT program within 48 to 72 hours.

TEST PREVENTS FURTHER DAMAGE

To date, ImPACT tests have been performed on 665 District 6 student-athletes, and Damrell said his staff has treated 19 student-athletes since the winter sports season started in an effort to avoid "second-impact syndrome." The situation references a potentially fatal syndrome caused by the effect of second concussion that occurs when a student-athlete is still symptomatic from an earlier concussion.

Typically, for years, when a student-athlete suffered a concussion, they were evaluated on the sideline, where it was often prematurely determined how soon the player could return to the playing field.

"Statistics show that 50 percent of athletes who have a concussion, then have another one without the first one being treated properly, result in death," said Brian Freeman, a certified athletic trainer at North Colorado Sportsmedicine. "Everybody wants to return to the field as soon as possible, and it's a risk not worth taking."

Several national studies conducted by Dr. Bennet Omalu, a Pittsburgh neuropathologist, make claims that multiple traumatic concussions have contributed to early dementia, severe depression and death.

Omalu has studied the brains of former Steelers who experienced severe depression -- Terry Long, who committed suicide at age 45, Mike Webster, who died at 50 with a heart attack and Justin Strzelczyk, who died at 36 in an accident while eluding police. He also studied the remains of former Philadelphia Eagles defensive back Andre Waters, who committed suicide at 44.

A Feb. 2007 story in the St. Petersburg (Pa.) Times, Omalu said brain damage would have produced dementia and depression in all four cases.

He also stated that "Waters had the brain tissue of an 85-year-old man with early symptoms of Alzheimer's."

NFL SETS TREATMENT STANDARDS

At a concussion summit conducted by Leigh Steinberg, a sports agent, and former

NFL Hall of Fame quarterback Warren Moon, it was determined that 350,000 athletes suffer varying degrees of head trauma playing sports in the United States. That figure only relates to athletes who have lost consciousness. The figure jumps to 3.8-million for athletes who have concussions but don't lose consciousness.

Steinberg represented Moon, who suffered six concussions in his career, as well as former Dallas Cowboys quarterback Troy Aikman and former San Francisco 49ers quarterback Steve Young, whose careers were cut short due to multiple concussions.

The NFL, in particular, has established more stringent procedures when treating concussions.

Before the Super Bowl, the Boston Globe and New York Times published reports from former Patriots linebacker Ted Johnson, who claimed he was rushed back into action before he had recovered from a concussion.

Johnson said a series of subsequent concussions forced him to retire, and has contributed to his battle with depression.

"I don't shave, don't shower, don't brush my teeth -- you just don't care," Johnson told Bryant Gumbel in a segment of HBO's Real Sports.

TEST BASED ON REACTION TIME

The situation can become more complex when a student-athlete is unwilling to report any symptoms or other findings related to a concussion, knowing it could prevent the amount of time they're sidelined.

"With the ImPACT test, you can't lie," Damrell said. "You can't fake it. It measures reaction time to within 1 one-thousandth of a second."

Freeman and Damrell confirmed an area cheerleader has been under their care for nearly a year and has not been cleared to return to action.

"Legally, we can't reveal a name, but she suffered a significant concussion, and the status of when she can return is still pending," Damrell said. "There is nothing more nerve-racking for us than to put an athlete back on the field too soon."