

'Walk and think' test could be key to concussion care

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(HealthDay)—Can you spell words backwards while you're walking?

Successfully performing that simple [test](#) of cognition could help decide whether a concussed [athlete](#) is safe to return to play, new research shows.

If the athlete can't simultaneously walk and think in this way, they may not be fully recovered from a [concussion](#) and could be at risk for another injury if they resume playing sports, the researchers found.

"If we can determine that athletes have recovered this ability after concussion, they may be less likely to get re-injured," explained study lead author David Howell. He's an athletic trainer and lead researcher for the Sports Medicine Center at Children's Hospital Colorado, in Aurora.

As his team explained, young athletes who've had a concussion are typically given the green light to return to sports if they pass tests that assess balance, vision, movement, and the ability to think and reason.

But some experts believe those tests might not detect continuing problems that could still increase the risk of another injury.

The new study included 41 male and female high school and college athletes who suffered a concussion while playing basketball, football, hockey or soccer, but eventually returned to play.

The athletes were given what's known as a "dual-task gait test," which measures the ability to walk and think at the same time. In the test, a person would be asked to walk normally while completing a mental task spelling a word backwards, reciting the months of the year in reverse order, or subtracting by 7's beginning at 99.

Dual-task gait tests have long been used to monitor patients with progressive brain diseases such as Parkinson's and Alzheimer's.

The athletes in the new study were tested in this way three weeks after

their concussion and again when they were given the OK to return to play.

The study seemed to show that scores on the dual-task test did reflect potential cognitive damage. Within a year of returning to play, 15 of the athletes suffered another injury, Howell's team noted—four had another concussion and others had knee dislocations, or hip or ankle sprains. Between their first and second dual-task gait tests, the injured athletes' scores fell, but there was no change among the non-injured athletes.

The study was presented Thursday at the National Athletic Trainers' Association (NATA) meeting, in New Orleans. Because the findings haven't yet been published in a peer-reviewed journal, they should be considered preliminary.

Still, the findings suggest that "walk and think" tests might be an important addition to the protocol for determining when an athlete can return to play after a concussion, the researchers said.

"Athletic trainers are concerned about the safety of athletes and, along with coaches and parents, want to be sure these students are fully healthy before they return to play," Howell said in a NATA news release.

"Our study is the first to test the theory that subsequent injury risk is related to motor function and/or attentional deficits, which can be measured using dual-task tests," he added.

"This early research sheds light on the complexities of the recovering brain and suggests that dual-task gait may be a paradigm worth looking at to reduce the risk of injury before clearing an athlete to return to play," Howell said. "The next step is to translate this research into something [athletic trainers](#) can easily use to assess athletes."

Two experts in concussion care agreed that the findings could help keep injured athletes safe.

The study findings "suggest that the currently used criteria used to determine 'return to play' may be inadequate," said Dr. Raj Narayan, chair of neurosurgery at Long Island Jewish Medical Center in New Hyde Park, N.Y.

Rosemarie Basile, a neuropsychologist at Staten Island University Hospital in New York City, agreed.

"Even once an athlete has been deemed recovered [from concussion] and cleared to return to sports, subtle symptoms can remain that may pose a risk for future injury," said Basile, who directs psychological services at the hospital.

The "walk and think" test "serves as a kind of brain 'stress test,'" Basile explained. And while the study population was small, she said the findings "highlight the need for continued research on more sensitive methods for predicting who may be at risk for further concussion."

More information: The American Academy of Family Physicians has more on [concussion](#).

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