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Use caution with computerized concussion test, researcher says

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Newly published research from an international team featuring UT Arlington assistant professor Jacob Resch has reaffirmed questions about portions of the popular computerized concussion assessment tool ImPACT.

When administered as it is in a clinical setting, the test possessed strong reliability on some evaluation factors. But, on other factors, it miscategorized healthy participants as impaired as much as 46 percent of the time.

Authors say the study illustrates the need for multiple types of concussion assessments. The research was published online May 31 in the *Journal of Athletic Training*. Jacob Resch, assistant professor in UT Arlington's College of Education and Health Professions and director of the UT Arlington Brain Injury Laboratory, is the lead author on the paper "ImPact Test-Retest Reliability: Reliably Unreliable?"

"This research confirms previous findings about ImPACT, and that is especially noteworthy in light of a recent study that found that athletic trainers who use computerized neurocognitive testing choose ImPACT," Resch said. "We hope this study re-emphasizes the importance of using multiple measures such as balance and a thorough clinical examination to assess concussed athletes."

ImPACT, which stands for Immediate Post-Concussion Assessment and Cognitive Testing, includes tests and retests that are used to monitor

concussion recovery from a neuropsychological viewpoint. Researchers found that the retests miscategorized healthy participants as impaired from 22 to 46 percent of the time. The most unreliable portions of the tests had to do with verbal and visual memory.

Resch and fellow researchers tested 91 men and women separated into two groups. Participants were ages 19 to 24. Researchers used different time ranges to assess test-retest reliability for each group.

ImPACT is widely used in professional and school settings. Test makers have said it is intended to be used alongside other assessments, but researchers worry schools with limited resources will see it as a single solution.

"Clinicians should recognize that a computerized neuropsychological test such as ImPACT is only one component of a concussion-management protocol and use all appropriate tools in clinical decision making and making a return-to-play decision," the paper said.

Provided by University of Texas at Arlington

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