

# Scientists call on sporting authorities to take concussion seriously

For football and rugby authorities, this is a headache that is not going away



Both the Irish Rugby Football Union and the International Rugby Board have recently put in place protocols to assess the severity of head shocks.

Photograph: Niall Carson/PA Wire

Michel Destrade

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Two researchers from the University of Birmingham have unveiled a series of biological tests to diagnose concussions in sports injuries.

Prof Tony Belli from the school of clinical and experimental medicine, and Dr Michael Grey, a reader in motor neuroscience, argued that neither Fifa nor the [International Rugby Board](#) were doing enough to protect players both on the pitch and in their later years from the dangers of traumatic brain injury.

In Ireland, the problem of [concussion](#) is a sensitive issue, particularly following the death of 14-year-old Carrickfergus schoolboy Ben Robinson in 2011, due to brain swelling after he received three head blows during the same rugby match.

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## ‘Sandbagging’

Prof Belli and Dr Grey argue these psychological tests are not accurate enough. There is strong evidence that players determined to keep on playing can fool these tests through “sandbagging”, they said. This technique involves underperforming in the tests before the matches, so that a later impairment goes undetected after an accident.

Instead, the researchers propose that the tests be based on biology and physics. They are currently conducting a survey of 40 young players to measure if their brain-nerve-muscle channels react more slowly following a concussion that has been diagnosed beyond any doubt by using an MRI test.

The proposed testing requires equipment the size of a large fridge. “It is not perfect but it is more portable than an MRI. It can be transported to a dedicated room close to the pitch,” the researchers said.

At the same time they are trying to determine specific “bio-markers” of concussion through urine, blood and other tests. Further down the line, these chemicals could be identified within minutes on the pitch side using a breath test, said Prof Belli.

## Football headers

In addition to accidental concussions caused by collisions, football also includes headers that can impact gravely on the brain of young players. “I do not think there is sufficient evidence to suggest an outright ban on headers for schoolchildren, but we are definitely moving in that direction,” said Prof Grey.

Prof Michel Destrade is head of applied mathematics at [NUI Galway](#) and is currently a Media Fellow at *The Irish Times*, on placement from the [British Science Association](#) and Science Foundation Ireland