Brain damage among footballers linked to raised risk of dementia

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Professional footballers may be at an elevated risk of dementia because of the cumulative brain damage from headers, collisions and other knocks over decades of playing the game, according to the first study of its kind.

There have been many cases of prominent retired players developing Alzheimer’s disease, including three members of England’s 1966 World Cup-winning team.

In 2002 a coroner investigating the death of Jeff Astle, the former West Bromwich Albion striker, recorded that he had died of “industrial disease” after hearing that repeatedly heading heavy leather balls had caused trauma in his brain.

Beyond these anecdotal reports, however, there is little hard evidence of a link between dementia and football. Now a team of British researchers has found the first signs that seasoned footballers may pick up a type of progressive brain damage normally associated with former professional boxers.

The scientists carried out post-mortem examinations on the brains of six former players who had died in their sixties with dementia after an average of 26 years in the game.

Four of the brains showed the hallmarks of gradual percussive brain damage, which is known as chronic traumatic encephalopathy (CTE). This two-thirds proportion compares with one in eight in the general population.

Although definitive large-scale studies into the link between football and dementia still need to be carried out, the Football Association has met the authors of the study and said that it was taking the findings seriously.

The FA’s head of medicine, Charlotte Cowie, said that the association had already begun funding another project looking at whether retired players were at greater risk of various brain diseases than the population at large.

Rugby union and American football have changed some of their rules on tackling after a series of studies linked concussion to a range of neurodegenerative problems but the situation in association football is much more poorly understood.

Don Williams, a consultant neurologist at the Cefn Coed hospital in Swansea, said that the project had begun in the Eighties when the son of an ex-footballer with advanced dementia asked whether the disease could be connected to his father’s career. “The brain is a delicate structure,” he said. “It’s got the consistency of blancmange or, in the words of Alan Turing, it has the texture of the porridge they used to serve up in his public school. I thought it was a real possibility that the brain could be damaged by repeatedly heading the ball over a long period of time.”

The six retired footballers’ brains collected by Dr Williams over the following three decades were analysed by researchers at University College London. The CTE in the footballers’ brains tended to be much more aggravated than normal.

Huw Morris, professor of clinical neuroscience at UCL, who was involved in the research, said that many important questions remained, including whether amateur footballers were also at risk, what kind of role CTE might play in causing dementia, and how the rules of the game could be changed to protect players if the theory was confirmed by further evidence.

The findings are published in the journal *Acta Neuropathologica*.

**Analysis**  
Jack Charlton. Nobby Stiles. Danny Blanchflower. The list of more than 300 retired English footballers with Alzheimer’s disease reads like a boy’s sticker album from the Sixties.

Rugby Union and American football have begun to get to grips with the toll that decades of heavy contact sport can take on the brain. Why, some bereaved families ask, is soccer still mired in denial?

The answer is that it remains almost entirely unclear how bad football’s brain damage problem is — or whether there is a problem at all. Dementia affects one in 14 over-65s and one in six over-80s. There is so little useful epidemiological data on football as a risk that we have no idea if those fractions are really any different for former players.

It may sound logical that colliding with a pound of speeding leather dozens of times a day would have come with a price for the heroes of 1966. Yet the study is the first to look systematically at what actually happens in the brain, and the sample size is small enough to count with your fingers.

Nobody knows if the harm is done by headers, clashes or simply the jerky rollercoaster of sudden deceleration. Nobody knows if things are any different in the modern game and nobody even knows if this pattern of brain damage causes dementia.