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Pro soccer players at greater risk for neurodegenerative diseases, study finds

By

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Former professional soccer players in Scotland developed dementia and other neurodegenerative diseases at significantly higher rates than the general population, according to a study published Monday that adds to the growing body of research that suggests years of exposure to heading in the sport may have negative impacts later.

The study, published in the *New England Journal of Medicine*, is the largest to date focused on any connection between soccer and dementia. Researchers at the University of Glasgow examined the medical records of more than 7,600 Scottish men who played professional soccer and were born between 1900 and 1976, and compared them to 23,000 similar men from the general population.

The former soccer players were less likely to die of heart disease and some cancers, researchers found, but were 3 1/2 times more likely to die of neurodegenerative diseases such as Alzheimer's, ALS and Parkinson's. The overall risk of developing these diseases was still relatively low, with 1.7 percent of the soccer players dying from neurodegenerative disease, compared to 0.5 percent in the general population, researchers found.

But the higher rates of neurodegenerative diseases across the board — ranging from a fivefold increased risk of Alzheimer's disease to a twofold increased risk of Parkinson's disease — probably will increase calls for rule changes in European soccer similar to those implemented in the United States in 2015, with heading banned for children 10 and under.

“This study looked at players born right up to 1976, so footballers playing in the last decade or so. That makes this research as relevant to those playing today in the modern era as it does to the players we studied. And until there is meaningful change across sport, we must assume that the risk remains real,” said Willie

Stewart, a neuropathologist and associate clinical professor at the University of Glasgow who led the study, which was funded by the Football Association, soccer's governing body in Britain, and the Professional Footballers' Association, the union for professional players.

The study did not examine potential causes for the increased rates of neurodegenerative diseases, but in an accompanying editorial in the *New England Journal of Medicine*, one of the nation's leading researchers of chronic traumatic encephalopathy, the neurodegenerative disease believed to be caused by years of exposure to repetitive head impacts, including concussions, pointed to heading.

"It appears that it is not just the 'big hits' resulting in symptomatic concussions that increase the risk of neurologic disorders later in life," wrote Bob Stern, a neuropsychologist at Boston University who, like the authors of the study, expressed caution that the study's findings shouldn't be generalized to apply to the millions of adults and children who play soccer in the recreational and amateur ranks.

In statements, representatives of both the Football Association and the Professional Footballers' Association expressed concern but did not call for rule changes for the sport's younger ranks.

"The whole game must recognise that this is only the start of our understanding and there are many questions that still need to be answered," said Greg Clarke, chairman of the Football Association. "It is important that the global football family now unites to find the answers and provide a greater understanding of this complex issue."

Chris Nowinski, chief executive of the Concussion Legacy Foundation, a nonprofit that advocates for rule changes in sports to reduce head impacts, renewed his call for European soccer authorities to implement rule changes similar to those in place in the United States.

"This has to start a global conversation on whether children should be exposed to the same risks as professional athletes," said Nowinski, who advocated for such rule changes in 2013 in a meeting with members of the UK Parliament.

"I cannot find a reason why you need children heading a soccer ball before 14 if we know exposure . . . increases their risk of developing brain disease in the future," Nowinski said.

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