Not so long ago, it was a diagnosis that was barely mentioned. Now it feels like there’s a plague of concussion in modern sport, with endless news articles and commentaries on the injury and its consequences. There are calls for heading to be banned in children's football and for parents to think again about letting their sons and daughters play rugby. Most recent is an award-winning Hollywood movie on the subject starring Will Smith, imaginatively titled Concussion, which launches in the UK on February 12. So why all the fuss? Should we all be wearing helmets?

Concussions were traditionally seen as causing short-term functional problems like memory loss and impaired concentration. Now people are becoming increasingly aware that they result in structural damage, in particular to fine nerve-cell fibres called axons deep inside the brain.

A further common misperception is that you need to be knocked out to be concussed. In truth, as little as 10% of concussion is associated with loss of consciousness. Concussion is any disturbance in brain function caused by injury, either through direct contact with the head or through whiplash as a result of a blow somewhere else on the body.

The long list of signs and symptoms includes headaches, seizures, memory loss and visual disturbance, of which the commonest is headaches. Symptoms can be delayed, presenting hours or even a day after the event. Yet recent data shows that concussed athletes remaining in play are at increased risk of further injury. This can include non-brain injuries, although they particularly run the risk of worsening their brain injury if they sustain another blow – including the rare complication "second impact syndrome", which can lead to severe complications and even death. "If in doubt, sit it out," is the advice in all sports at all levels.

Increased dementia risk

Specialists are becoming more aware of the fact that brain injury, including even concussion, i

ncreases the
risk of degenerative brain disease leading to dementia. Originally thought to be exclusive to retired boxers, this dementia was for many decades recognised as punch-drunk syndrome or dementia pugilistica
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But as the new Will Smith film makes clear, just over a decade ago we began to see cases of the same pathology in other athletes exposed to repetitive concussions, including rugby and soccer. The film tells the story of the first case described in American footballers, and the strug gle of
pathologist Dr Bennet Omalu (Will Smith) to raise awareness of the condition with the National Football League (NFL).

Following the recognition that it is brain injury rather than a single sport that carries the risk of this degenerative brain disease, the condition is now referred to as chronic traumatic encephalopathy (CTE). But despite increasing reports of CTE in a growing list of sports, as yet there is no diagnostic test. So far, all cases diagnosed have been at post-mortem examination. This has included over 100 former NFL players, for instance .

Undoubtedly there have been many more cases of CTE diagnosed as an alternate dementia. With current best estimates suggesting between 5% and 15% of dementia may be brain-injury related, there are probably many people living now with CTE without knowing it. Do you know a former rugby or soccer player with dementia? With the Six Nations annual rugby tournament getting underway again
, it is a sobering thought.

What’s the cure?

We are inevitably only at the beginning of understanding CTE. This will gradually change through programmes of research in sports concussion and the pathology of CTE like my one in Glasgow. As this knowledge grows, targets for treatments might emerge, which may also help us treat other similar degenerative brain diseases such as Alzheimer’s.

In the absence of a full understanding of the risk factors and with no diagnostic tests or treatments, CTE is one condition that seems best managed by the mantra “prevention is better than cure”. The simplest and most effective way of reducing the incidence of this form of

dementia might just be to lower the risk of concussion and become better at recognising and managing the injury.

In the meantime, while there may be anxieties about the risks of concussion, there remains no doubt about the lifelong health benefits of sport. As such, my view is that we should continue to encourage wider participation in sport, while promoting better recognition and management of the inevitable concussions. This includes being aware that despite all the technology and research invested in headgear, it still provides no meaningful protection against concussion. But if we approach the problem with the best available knowledge, we can get the benefits of sport while reducing the risks from concussion.

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Read more http://theconversation.com/concussion-horror-of-sports-related-brain-damage-is-only-now-emerging-54139