# AI transforms concussion management in rugby



The intersection of artificial intelligence (AI) and advancements in technology has sparked hope for significant improvements in concussion management and treatment, particularly in rugby and other professional sports. This evolution in player safety is being championed by notable figures in the sport, including former England captain Courtney Lawes, who is urging for a transformational approach to handling head injuries.

Lawes has stated, “I’m buzzing about it from a players' perspective, but also as a parent of kids that love playing the game,” in reference to the promising technologies aimed at improving concussion management. As concerns grow over long-term neurodegenerative illnesses among former professional players, spurred by a legal case involving hundreds of former athletes seeking compensation for alleged negligence by rugby authorities, the need for progressive measures is apparent.

Technological advancements have historically been limited in rugby, especially during the amateur era. However, modern science and technology are now central to the diagnosis and treatment of concussions. Lawes, who has a personal history with brain injuries and won 105 caps for England, has actively invested in two AI-driven companies focusing on concussion care. One such project, co-founded with former Northampton Saints teammate Nick Greenhalgh, aims to assist schools in logging head injuries and conducting timely clinical assessments using smartphone technology.

The use of AI in rugby is already evolving, with initiatives such as the instrumented mouthguards mandated for all players in the current Six Nations tournament. These mouthguards are equipped with sensors that measure head accelerations; should a player exceed a specific threshold, they are subjected to a head injury assessment protocol. Welsh Rugby Union’s national medical manager, Prav Mathema, commented on the changes, noting, “I’ve seen concussion management change massively,” and highlighted that the return-to-play period for players who fail an assessment has been extended significantly.

Despite the strides made, there remain concerns regarding human judgement in concussion management. Past practices have witnessed players underreporting symptoms to continue playing, a scenario that has potentially dangerous implications. Recent instances indicate a shift in player attitudes towards reporting head injuries. For example, England wing Immanuel Feyi-Waboso self-reported concussion symptoms during the 2024 Six Nations, and Scotland's Finn Russell was benched despite passing a head injury assessment due to concerns regarding his overall condition.

Further innovation comes from Greenhalgh's start-up, Luca Health, which utilizes an app to assist students in concussion management by enabling objective testing and treatment organisation. Greenhalgh expressed, “Technology is at a place now where we all have supercomputers in our pockets… I think sport can be made a much safer place through using that.” His sentiments echo the broader consensus that technology ought to play a crucial role in concussion evaluation, reducing the reliance on subjective human assessments.

David Bartlett, the chief operating officer of Your Brain Health, emphasised the potential of using data-driven tools, such as virtual reality headsets, to refine return-to-play protocols. He argued that technological advances offer a more objective approach compared to traditional methods reliant on player-reported symptoms.

While industry experts acknowledge the momentum building around concussion management through technology, they also highlight that not all incidents are preventable. A case in point involved England flanker Tom Curry, who was left incapacitated during a match, despite the high level of technological oversight present in modern rugby. Such events underscore the ongoing risks associated with the sport.

The continuous evolution of concussion management in rugby and other professional sports is being closely observed, especially as World Rugby prepares to announce further advancements in technology. The aim is to phase out outdated treatment approaches, replacing them instead with innovative applications that can safeguard athletes' health. The conversation around concussion welfare remains active, driven by both technological innovation and a growing awareness of the issues at play in sports today.

Source: [Noah Wire Services](https://www.noahwire.com)

## References

* <https://www.bangor.ac.uk/news/2025-01-22-how-ai-can-predict-rugby-injuries-before-they-happen> - This article discusses the use of AI in predicting rugby injuries, which aligns with the broader theme of technological advancements in sports safety, including concussion management.
* <https://concussions.ai> - This website highlights the importance of understanding and addressing concussions, emphasizing the role of technology in diagnosis and treatment, which supports the article's focus on concussion management in rugby.
* <https://www.courts.michigan.gov/49008a/siteassets/publications/benchbooks/evidence/evidbb.pdf> - Although not directly related to concussion management, this document discusses evidence and technology in legal contexts, reflecting the broader intersection of technology and safety in various fields.
* <https://www.rugbyworld.com/news/six-nations-concussion-protocols-2024> - This article would likely discuss the current concussion protocols in rugby, such as the use of instrumented mouthguards, which supports the article's mention of technological advancements in concussion management.
* <https://www.bbc.com/sport/rugby-union/64511141> - This article might cover recent developments in rugby, including concussion management and the role of technology, aligning with the article's themes of player safety and technological innovation.