

Rugby's implementation lessons: the importance of a 'compliance wedge' to support successful implementation for injury prevention

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World Rugby (the world governing body for rugby) has been committed to evidence-based risk management of concussion since introducing an off-field assessment in 2012. That year, the Concussion in Sports consensus meeting recommended the SCAT3 as a standardised assessment for concussion in sport. The SCAT3 and SCAT5 are the basis for the World Rugby Head Injury Assessment (HIA) protocol.¹

World Rugby faced two significant obstacles when aiming to implement a concussion risk management plan: (1) the global nature of the game—rugby is played in over 120 countries, and (2) rugby is a limited-interchange sport (players unable to return to play), rather than free-interchange sport (unlike many other team sports). As a limited-interchange sport, rugby needed to change the game's laws (rules) to allow temporary substitution for head injury.

THE WORLD RUGBY RESEARCH UNIT

The World Rugby Research Unit (WRRU) comprises sports medicine doctors with significant on-field experience working with a team of sports scientists, academic researchers and rugby administrators. This tripartite approach is supported by Hanson *et al*² who proposed using three complementary expert groups, termed as content experts (researchers), process experts (clinicians) and context experts (members of sporting bodies) to close the gaps between injury prevention research and safety promotion practice.²

The WRRU has a primary goal to improve player welfare and safety in rugby. It has recognised that the critical driver of change in managing injuries and in particular head injuries within the sport should be based on 'evidence, not emotion'. Figure 1³⁻⁹

outlines the research framework that has driven changes in the process of concussion diagnosis, management, and more recently, prevention within rugby. An important measure of our concussion management interventions is the reduction in the number of concussed players returning to play following a head injury. Prior to our research-driven programme beginning in 2012, 57% of rugby union players who had a concussion returned to play,¹⁰ compared with 11% in our latest study covering the 2015–2018 period.⁷

Eight years of concussion management experience has taught us that while a multi-disciplinary implementation approach engages stakeholders, a compliance strategy (often a more onerous undertaking) is needed to change behaviour more effectively. We have progressively learnt that a successful compliance strategy requires 'visible' actions or 'reinforcement from authorities' within the sport. We termed these interventions, 'compliance wedges', and our experience is that their use has substantially contributed

to improved implementation across our global sport.

WHAT IS A COMPLIANCE WEDGE?

The compliance wedge is a subtle tool used to reinforce a behaviour change early in the implementation process. All or specific stakeholders may be targeted by compliance wedges. Since commencing this project, we have used the following compliance wedges to achieve improved outcomes:

- ▶ Catchcry 1—'player welfare is number 1 priority'—this was successfully negotiated as a World Rugby business priority and was used to influence administrators to support a law change to introduce temporary substitution for head injury.
- ▶ Catchcry 2—answer with evidence, not emotion—presented to the World Rugby Executive Committee as the priority philosophy for managing player welfare issues. The evidence supporting the reliability of the HIA process reinforced this off-field assessment during a period of intense media scrutiny.

World Rugby's decision to retain central control of competition access to the HIA process has provided a significant opportunity to implement compliance wedges with practitioners, coaches, competitions and administrators. The ability to allow or withdraw access to the HIA process has meant World Rugby could enforce such measure as:

- ▶ The introduction of Player Welfare Standards, now a legal requirement for competitions. This means World

RUGBY RESEARCH-DRIVEN CONCUSSION MANAGEMENT

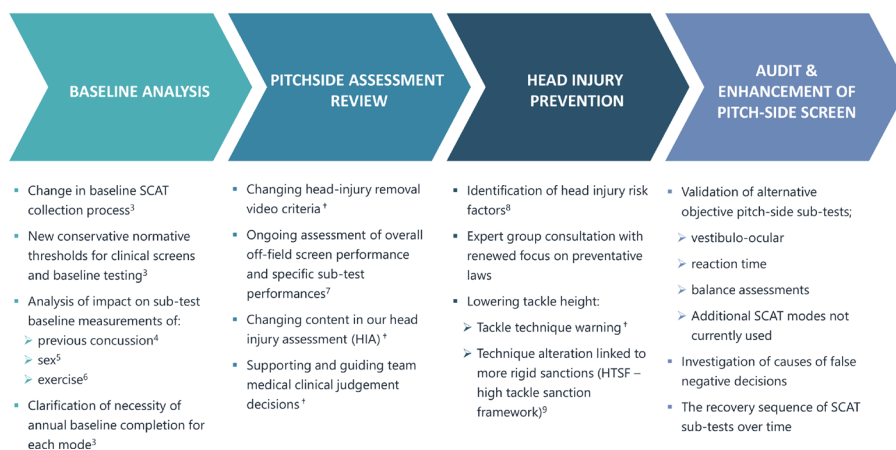


Figure 1 World Rugby Research Unit (WRRU) concussion diagnosis, management and prevention research. Published studies are referenced, †—indicates data available at <https://playerwelfare.worldrugby.org/?documentid=module&module=24>. HTSF, High Tackle Sanction Framework; SCAT, Sport Concussion Assessment Tool.

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Rugby sets medical, education and compliance standards for all participating medical practitioners and teams through this agreement.

- Introduction of the CSx App—an online HIA tool that reinforced procedural compliance, facilitated uniform assessment of head injuries in rugby, underpinned research and improved data collection consistency.

COMPLIANCE WEDGE APPLICATION

At the Rugby World Cup in Japan in 2019, we introduced a concussion prevention strategy called the High Tackle Sanction Framework (HTSF) aimed at lowering the tackle height to reduce concussion risk.⁹ This strategy focused on referee sanction interpretation and enforcement to lower the tackle height. Despite not using a specific ‘concussion wedge’, this strategy was successful leading to a 37% reduction in tackle concussion rates (when compared with global elite rugby competition in 2018).⁹

Our explanation for the success of the HTSF during Rugby World Cup (RWC) without a more directed compliance wedge focused on concussion reduction was the unique nature of this RWC competition, the closed format of the competition, easy accessibility to all referees and team doctors and the intense media scrutiny.

In domestic rugby, away from the RWC spotlight and without an identified compliance wedge, we face a dilution of the advantages of the HTSF as a concussion prevention strategy. Rugby is geographically diverse and independently administered, with regional nuances in how it is played and officiated. Hanson *et al*² highlighted that a centrally driven injury prevention strategy’s success would be dependent on stakeholder support and input into implementation.

Acknowledging this, World Rugby must now work to bring the game’s stakeholders into the implementation process; to help identify the most effective compliance wedge(s) to change behaviour and advance injury prevention strategy.

Acknowledgements We would like to acknowledge and sincerely thank the team doctors and medical practitioners for their help in facilitating collection of head injury assessment (HIA) data.

Contributors MR and ECF conceived of and wrote this editorial. ECF is the guarantor. All authors had full access to all of the data in the study and can take responsibility for the integrity of the data and the accuracy of the data analysis. The manuscript has not been published elsewhere and is not being considered for publication elsewhere.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests ECF and MR are employed by World Rugby, the governing body for rugby union worldwide.

Patient consent for publication Not required.

Provenance and peer review Not commissioned; externally peer reviewed.



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To cite Raftery M, Falvey ÉC. *Br J Sports Med* 2022;**56**:1–2.

Accepted 22 January 2021
Published Online First 3 February 2021
Br J Sports Med 2022;**56**:1–2.
doi:10.1136/bjsports-2020-103454

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