Understanding Injury Risk in Girls' Youth Community Rugby: Findings from the WISGYR Project

Project Title: Welsh Injury Surveillance in Girls' Youth Rugby (WISGYR)

Research Partners: Bangor University & Welsh Rugby Union (WRU)

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Executive Overview & Strategic Rationale

Supporting the sustainable growth of female participation is one of World Rugby's primary development priorities. Historically, however, player welfare guidelines, coach education curricula, and injury prevention frameworks across the community game have relied on epidemiological evidence extrapolated from adult male, senior elite female, or youth boys' cohorts.

To close this evidence gap, World Rugby funded researchers from Bangor University, partnered with the Welsh Rugby Union (WRU), to deliver the WISGYR Project. Over three full seasons (2023/24 to 2025/26, preceded by a 2022 pilot), the project tracked match injuries, recovery times, and contact situations across under-8s to under-18s throughout Wales. Its objective was to benchmark match injury incidence, severity, burden, and mechanisms, establishing the foundational evidence required to guide targeted, female-specific player welfare interventions.

Surveillance Scope & Methodology

Surveillance was conducted in accordance with the international consensus statement for injury surveillance in rugby union (Fuller et al., 2007) and recommendations for community rugby (Brown et al., 2019).

- **Injury Definition:** Standard 24-hour time-loss definition (any injury preventing a player from taking a full part in planned rugby training or match play for more than 24 hours from the day sustained).
- **15-a-Side Cohort:** Tracked **41 unique teams (83 team-seasons)** across 679 matches, encompassing **8,573 player-match-hours** of exposure.
- **Rugby Sevens Cohort (Value-Add Dataset):** Captured tournament surveillance across **188 teams**, 541 fixtures, and **1,630 player-match-hours**.

The Bangor research team maintained weekly active follow-ups with club and school primary contacts and parents to log team exposure hours, mechanism codes, anatomical locations, clinical diagnoses, and precise return-to-play dates.

1. 15s Injury Rates Align with Community Benchmarks

Overall match injury incidence in girls' 15s community rugby was **27.9 per 1,000 player-hours**. This rate is broadly comparable to community adult men (29.2/1,000 h) and youth boys (30.6/1,000 h), and slightly lower than community adult women (32.4/1,000 h).

Injury incidence rose markedly across developmental age grades: rates were low in Minis (U8–U12: 8.4/1,000 h), increasing substantially through Junior rugby (U13–U18: 35.4/1,000 h) and peaking at U18 (52.6/1,000 h). Positional demands showed comparable risk between forwards (26.9/1,000 h) and backs (25.5/1,000 h).

2. Rugby Sevens Represents an Epidemiologically Distinct Code

Sevens recorded more than double the overall match injury incidence of 15s (**58.3 vs 27.9 per 1,000 h**), with injury burden reaching **1,803 player-days lost per 1,000 hours** (compared to 982 in 15s). Concussion incidence was notably elevated at **19.6 per 1,000 hours** (accounting for 34% of all Sevens injuries), compared to 8.3 per 1,000 hours in 15s.

The elevated incidence in Sevens reflects its spatial characteristics: higher running velocities, increased frequency of open-field one-on-one collisions, and reduced defensive proximity relative to the 15-player format.

3. Tackle Dynamics Diverge by Rugby Format

The tackle contest was the predominant mechanism across both game forms, accounting for 54% of injuries in 15s and 65% in 7s, alongside roughly two-thirds of all concussions.

- In 15s, injury propensity was slightly higher for the **tackler (28%)** than the **ball carrier (26%)**, mirroring patterns in youth male rugby.
- In Sevens, the dynamic inverted: **being tackled accounted for 39% of injuries compared to 26% when tackling**. In open-field evasive collisions, ball carriers face substantial deceleration and altered body orientation upon impact.

4. Knee Ligaments and Head Injuries Dominate Severity

While moderate injuries (8–28 days absence) formed the largest proportion by frequency (57% in 15s; 67% in 7s), **joint ligamentous sprains (primarily knee and ankle) and concussions drove over 50% of all player-days lost**.

- In 15s, knee injuries generated the greatest anatomical burden (250.1 days/1,000 h), followed by the head/face (227.5 days/1,000 h).
- In Sevens, knee injuries similarly represented the highest single-site burden (437.0 days/1,000 h).

Practical Implications for Player Welfare

1. **Contact Coaching (Attacking & Defending):**

Current contact-safety curricula rightly focus on tackler head placement and body height. The WISGYR data indicates that coach education must equally emphasise ball-carrier preparation—specifically pre-contact bracing, falling mechanics, and rolling safely under momentum in high-speed, open-field contests.

2. **Mandating Female-Specific Neuromuscular Warm-Ups:**

Given the high burden of lower-limb ligament sprains (2,950 total days lost in 15s; 1,294 in 7s), structured neuromuscular training protocols (such as World Rugby's *Activate*) should be embedded as non-negotiable preparation before training and matches to build multi-planar knee and ankle stability.

3. **Format-Specific Tournament Governance for Sevens:**

Given the elevated injury and concussion rates per hour of exposure, youth Sevens cannot simply follow standard 15s welfare guidelines. Age-grade tournament scheduling requires defined standards, including mandatory minimum inter-match recovery windows and maximum match-exposure caps per tournament day.

4. **Empirical Reassurance for Pathway Growth:**

Confirming that community girls' 15s rugby has an overall injury incidence (27.9/1,000 h) lower than senior community women (32.4) and youth boys (30.6), with entry-level Mini rugby proving very safe at just 8.4 injuries per 1,000 hours and zero reported time-loss injuries in under-8s. This provides unions, schools, and parents with objective confidence regarding the safety of the grassroots game for girls.