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Background The risk of injury in professional rugby union is high compared with other sports. Modifiable risk factors such as training load provide an attractive target for risk management.

Objective To explore the influence of training load and other known risk factors on soft tissue injury risk.

Design Observational cohort.

Setting Thirteen professional (English Premiership) rugby clubs over two seasons.

Patients (or Participants) During two seasons, 433 and 569 players were recruited, resulting in 1002 player-seasons from 696 unique players.

Interventions (or Assessment of Risk Factors) Training load metrics (Session Rating of Perceived Exertion), previous injury, previous concussion, match minutes, age and position.

Main Outcome Measurements Soft tissue injury hazard (daily risk).

Results Age and position were unclear risk factors for injury (p-values: 0.20–0.49 for age and 0.40–0.97 for position). Players without a previous injury were at the lowest risk of subsequent injury, while the greater the number of previous injuries, the greater the risk for subsequent injury. Playing ‘moderate-high’ and ‘high’ match minutes was associated with a lower risk of injury than players with ‘low’ match minutes. Unexpectedly, having a previous concussion was associated with a lower risk of injury than players without a previous concussion. For training load measures, 3-day acute load showed no clear relationship with injury risk, while moderate-high 14-day chronic loads (248–337 daily AU) demonstrated a ‘likely’ harmful effect on injury risk (Relative Risk: 1.4, 95% CI: 1.1–1.8).

Conclusions Clear associations between injury risk and chronic training load measures were identified, as well as associations with previous injury, previous concussion and match minutes. These findings support the need for careful individualised load management and athlete profiling to include other risk factors (e.g., previous injury, previous concussion and match minutes). This should be undertaken to inform risk management decisions in athlete training programmes.

083 WORKLOAD WEIGHTED FOR TISSUE DAMAGE RESULTS IN HIGHER ACUTE:CHRONIC WORKLOAD RATIO FOR INJURED VS. UNINJURED ATHLETES

Background Risk of overuse injury is often monitored through the acute:chronic workload ratio (ACWR), where workload is the quantity or magnitude of loading cycles. However, weighting the loading magnitude by raising it to a power equal to the slope of the stress-life curve for the tissue may give a better estimate of the damage accumulated due to workload.

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