

Workload Measurement for Reducing Overuse Injury Risks among Fast Bowlers: A Systematic Review

BIDYASHREE UPADHYAYA¹, JOYDIP SAHA²

ABSTRACT

Introduction: Fast bowlers face a significantly higher risk of overuse injuries. Evidence suggests that injury rates across all age groups correlate more closely with the frequency of bowling sessions and the year-round nature of the T20 format than with the intensity of a single match.

Aim: To explore different methods to measure workload of fast bowlers.

Materials and Methods: We searched multiple databases, including PubMed Central, ScienceDirect, Cochrane, and Embase, in accordance with PRISMA guidelines. The search strategy utilised Boolean operators (AND, OR) and MeSH terms such as 'cricketers,' 'fast bowlers,' 'training,' 'practice,' and 'workload management'. Total 12 articles were identified in the database and following the removal of duplicates and application of specific inclusion and exclusion criteria, 4 articles were selected.

Results: This synthesis identifies workload volatility and acute-on-chronic spikes as the primary drivers of injury pathogenesis. Evidence

confirms that injury risk is not merely a function of cumulative volume but of "under-preparation," particularly when transitioning from T20 to First-class formats. Clinically, exceeding 234 deliveries in 7 days increases Lumbar Stress Fracture (LSF) odds 11-fold while bowling >100 overs in 17 days correlates with an 80% increase in absolute injury risk. Monitoring via an exponentially-weighted 9:21 day ratio (acute vs. chronic) proved most effective for capturing fatigue within schedules. Maintaining a stable, moderate-high chronic base of 21–28 overs/week significantly attenuates risk by fostering 'injury resiliency'. To detect harmful week-to-week spikes (e.g., >22 overs/week) and implement phased 'loading bridges' during format changes.

Conclusion: Evidence supports maintaining a stable chronic base of 21–28 overs/week and utilising an exponentially-weighted 9:21 day monitoring ratio. Preventing 'under-preparation' during format transitions clinically paramount to reduce high incidence of LSF.

Keywords: Cricket sport, Fractures, Resilience, Workload.

PARTICULARS OF CONTRIBUTORS:

1. Postgraduate Student, Department of Sports Science, Abhinav Bindra Sports Medicine and Research Institute, Bhubaneswar, Odisha, India.
2. Associate Professor, Department of Movement Science, Abhinav Bindra Sports Medicine and Research Institute, Bhubaneswar, Odisha, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Joydip Saha,
Associate Professor, Department of Movement Science, Abhinav Bindra Sports Medicine and Research Institute, Bhubaneswar-751024, Odisha, India.
Email: joydipsaha77@gmail.com