

Editorial Commentary: Rehabilitation of the Overhead Throwing Athlete Requires Supervision of Mechanics, Velocity, and Total Workload



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Abstract: Rehabilitation of the baseball athlete requires understanding of the unique injury profile of throwers and the pathologic conditions specific to the throwing motion. To optimize performance recovery, consideration must be given to age of the athlete, mechanics of throwing, velocity or effort of the throw, and total workload over time, with careful attention to minimize spikes in workload. Rehabilitation success of junior throwers is variable and likely relates to lack of high-level supervised throwing programs and mechanical analysis. Given the epidemic of elbow injuries in our younger athletes, efforts to standardize rehabilitation metrics for progression will be of significant value.

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Baseball is a sport with long-held traditions and unwritten codes of conduct. In many ways, rehabilitation of the baseball athlete follows much of the same historical precedence. As the injury profile of throwing athletes contains a unique set of pathologic conditions specific to the throwing motion, rehabilitation must also be specialized to optimize performance recovery. Although the real-world experience of experts in the field cannot be discounted, scientific study is important to help refine and optimize protocols for post-injury recovery. In addition, while professional athletes have unlimited access to trainers and therapists with specific baseball knowledge, many youth and

amateur athletes are left to craft their own recovery protocols with varied success.

In the study “Interval Throwing Programs Can Be Equivalent to Pitching Over Five Innings at Distances Beyond 150 Feet,” the authors Carr, Manzi, Estrada, Dowling, McElheny and Dines have examined the valgus torque on the elbow during the long toss phase of rehabilitation and compared to in-game scenarios to create an equivalent value of the number of innings pitched.¹ The findings represent one important factor in regard to progression of recovery after elbow injury or surgery. Yet as with pathogenesis of the injury, the success and rate of recovery are multifactorial problems. Additional considerations include the age of the athlete, mechanics of throwing, velocity or effort of the throw, and total workload over time, with an effort to minimize spikes in workload at any given time point.² One of the most difficult portions to control is the velocity or effort of the throw, which can be highly variable from athlete to athlete and difficult to measure in a long toss situation.

For the high-level amateur athlete or professional athlete, the success of elbow recovery following typical injuries, such as UCL repair or reconstruction, is extremely favorable.³ However, in my experience, the success of rehabilitation for more junior athletes is much more variable, which likely relates at least in part to the lack of high-level supervised throwing programs and mechanical analysis. Given the epidemic of elbow injuries that we are facing in our younger athletes,

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continued efforts to define and standardize the rehabilitation programs with discrete metrics for progression will be of significant value to this population.

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