

Assessment of Preventative Testing, Prevention Programs, and Injury Rates in College Baseball: A Four-year Study

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Background: Shoulder and elbow injuries are a common cause of missed time for college baseball pitchers. These injuries can be caused from a variety of reasons, but most common are overuse injuries. Overuse injuries can cause significant pain and loss performance. When evaluating these athletes who complain of shoulder pain or medial elbow pain, rotator cuff weakness is a prevalent finding. Two other issues that are prevalent in college pitchers are range of motion deficits and scapula dyskinesia.

Purpose: The purpose of this study were to implement specific testing to measure shoulder internal and external ROM in dominant and non-dominant sides, test bilateral shoulder strength isokinetically, assess scapula mobility looking for any dyskinesia, then set-up specific plans to address dysfunction. After the dysfunction was addressed to implement a prevention arm care program during the season and monitor injury rates to see if there was a change in injuries, surgeries, and loss time from competition.

Design and Setting: This is a prospective, descriptive research design set-up to be a functional assessment and program to implement in the college baseball setting.

Participants: 61 pitchers who were or are currently members of Louisiana State University baseball program between 2007-2010 agreed to participate in the study and signed consent forms.

Data Collection: The number of innings available was determined based on number of pitchers on the team multiplied the number of innings in a season (15 pitchers x number of innings in a season 635 = 9525 innings available) The number of innings missed for an athlete was tracked. Additionally the body part (shoulder or elbow) accounting for the missed inning was determined. The average for the 4 years was determined for innings available, innings missed, shoulder injuries, and elbow injuries.

Results: The overall average of innings available was 8977 ± 1194 innings. The innings missed was 290 ± 133 innings. Of the 290 innings missed 114.75 were due to shoulder injuries while 175.5 were due to elbow injuries. On average the pitchers were missed $3 \pm 2\%$ of the possible innings or $97 \pm 2\%$ of the time the pitchers were available to fully participate in games during the season.

Conclusion: There was one pitcher who had surgery on his dominant pitching shoulder during the four-year period and four UCL reconstructions with three of the pitchers having a previous injury to the medial elbow.

Clinical Relevance: Addressing shoulder dysfunction in the form of rotational range of motion deficits, scapular dysfunction, and rotator cuff strength when the athlete is asymptomatic reduces the risk of missed playing time.