

# Study suggests preseason shoulder strength may determine injury severity for baseball pitchers

10 July 2009

Athletic injuries can derail any player's ability to compete, but for a baseball pitcher his shoulder strength and control is critical. A new study to be presented at the American Orthopaedic Society for Sports Medicine's (AOSSM) Annual Meeting in Keystone, Colorado, suggests that testing a pitcher's shoulder strength through a series of exercises during the preseason may help create a focused strength training program to prevent serious injury during the season.

"The ability to identify pitchers at risk for injury could be extremely valuable to a professional baseball organization. Our study examined the predictive value of preseason strength measurements as they relate to in-season throwing injuries," said Ian Byram MD, lead author and fourth year orthopaedic surgery resident at Vanderbilt Medical Center, Nashville, TN

The study measured the preseason shoulder strength for all pitchers in a professional baseball organization over a five-year period (2001-2005). Over the course of the five-year period, 144 major and minor league [baseball](#) pitchers were analyzed using a specific protocol by a single athletic trainer. Prone internal rotation (IR), prone external rotation (PER), seated external rotation (SER) and supraspinatus (SS) strength were tested during spring training prior to each season. The players were then followed throughout the season for incidence of throwing related injury.

The study illustrated a significant association between PER, SER and SS strength with throwing related injuries requiring surgery. There was also some evidence for an association between the ratio of PER/IR strength and the incidence of injury.

"The shoulder and elbow are subjected to

significant stresses during the pitching motion, placing them at risk for [injury](#). By demonstrating an association between shoulder weakness and throwing related injuries, we hope that future injuries might be prevented by focusing strength training programs on those areas that are weakest," said Byram.

Source: American Orthopaedic Society for Sports Medicine

APA citation: Study suggests preseason shoulder strength may determine injury severity for baseball pitchers (2009, July 10) retrieved 18 November 2019 from <https://medicalxpress.com/news/2009-07-preseason-shoulder-strength-injury-severity.html>

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