

A Novel Stretch to Reduce Glenohumeral Internal Rotation Deficit in Overhead Athletes

Caleb Stanton Davis, Stanton B N Davis¹

¹The Orthopedic Center

INTRODUCTION: Decreased internal rotation (IR) and total arc of motion (TAM) has been correlated to shoulder pain and pathology in overhead athletes. The purpose of this study is to present a new stretch of the musculo-capsular structures of the posterior shoulder that is easily taught and performed, termed “the attitude stretch.” A series of high school baseball players, a group prone to developing glenohumeral internal rotation deficit (GIRD), participated to assess the effects of the stretch on correcting passive IR and TAM differences. When incorporated into a pre- and post-participation routine, this stretch may be an effective preventative intervention that targets deficits and potentially reduces the incidence of shoulder pain with loss of participation and/or shoulder injury.

METHODS: Passive internal rotation (IR) and external rotation (ER) and total arc of motion (TAM) were measured bilaterally in high school baseball players. Measurements were obtained during preseason physical examinations with athletes supine on an examination table to stabilize the scapula. Maximum shoulder IR and ER were measured at 90 degrees of shoulder abduction with the elbow flexed to 90 degrees and using a universal goniometer. The non-throwing shoulder was used as a baseline comparison. Pre-stretch measurements of both shoulders were documented, followed by post-stretch measurements of the throwing shoulder. The incidence of GIRD, defined as a loss of 20 degrees IR compared to the contralateral shoulder, at the time of the study and whether the athlete had experienced pain during throwing was documented. “The attitude stretch” stretches the posterior musculocapsular tissue of the shoulder and resembles someone with their hand on their hip. It is performed by placing the back of the hand on the ipsilateral iliac crest. The elbow is grasped with the opposite hand and pulled forward until a stretch is felt in the posterior shoulder. The hand on the hip stays stationary. The stretch is held for 30 seconds or until soft tissue creep occurs.

RESULTS: Sixty male baseball players ages 14-19 participated. The mean pre-stretch throwing shoulder measurements were: IR 55(SD 10), ER 120(SD 11), TAM 175(SD 15). Post-stretch throwing shoulder measurements were: IR 75(SD 11), ER 120(SD 13), TAM 195 (SD 15). An increase in IR and TAM was found in the throwing shoulders immediately following the stretch. No significant change in ER was appreciated. The mean IR difference between pre- and post-stretch throwing shoulders was 20 degrees. A total of 45% (27 of 60) throwing shoulders had pre-stretch GIRD. In total, 3% (5 of 60) athletes complained of shoulder pain with throwing, all of which were in the pre-stretch GIRD group.

DISCUSSION AND CONCLUSION: This prospective series demonstrates a novel, easy to perform stretch of the posterior musculo-capsular structures of the throwing shoulder as evidenced by improved internal rotation. The attitude stretch can be taught to coaches, athletic trainers, parents, and athletes. When altered range of motion patterns are identified, this stretch may be used as a preventive intervention to balance forces across the shoulder and reduce the pathological changes found in painful throwing shoulders. Implementing this maneuver in a pre- and post-participation routine may be effective in reducing time lost from participation and improving performance in adolescent overhead athletes by reducing



during

throwing.