# **Range of Motion Characteristics of the Swimmer's Shoulder: Not the Typical Overhead Athlete**

Oyama S., Myers J.B., Ricci R.D., Wassinger C.A., Conley K.M., Lephart S.L.

### Introduction

Swimmers and baseball players are typically grouped as overhead athletes. Yet, each has distinct differences in the demands placed on the shoulder during play. Unique humeral range of motion (ROM) characteristics observed in the dominant shoulder of overhead throwing athletes may not be present in the swimmer's shoulder due to the bilateral nature of the sport. The purpose of this study was to compare the ROM of swimmers, baseball pitchers, and control subjects.

#### Methods

Forty-five healthy, male intercollegiate athletes (15 swimmers, 15 baseball pitchers, 15 non-overhead control athletes) participated. Bilateral humeral rotation ROM and posterior shoulder tightness (PST) were assessed with goniometry. The variables measured were internal rotation (IR), external rotation (ER), and total ROM, glenohumeral internal rotation deficit (GIRD), external rotation gain (ERG), and PST. Group and limb statistical comparisons were made.

#### Results

Baseball pitchers had more GIRD (p<0.001), ERG (p=0.018), and PST (p=0.006) compared to swimmers and controls. There were no group or limb differences in the total ROM (p.>05). There were no differences between the swimmers and the controls for any variable (p.>05).

## **Discussion and Conclusion**

Our study demonstrated that swimmers do not possess the same ROM characteristics seen in pitchers. These characteristics in pitchers are likely due to the high velocity, high repetitive nature of throwing, unlike swimming which is high repetitive, low velocity. The results suggest that clinicians should develop sport specific rehabilitation protocols instead of the general "overhead" rehabilitation. This sport specific protocol will allow better outcomes once the athlete returns to play.