

Baseline Hip Internal Rotation Measurements in Asymptomatic Baseball Athletes: A Systematic Review with Implications for Training and Rehabilitation

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Introduction. Deficits in hip range of motion (ROM), particularly internal rotation (IR) of the nondominant leg, have previously been shown to be associated with increased risk of injury in baseball athletes. Prevention programs aimed at increasing hip ROM have been proposed to reduce injury, but the ideal target population is unknown. The aim of this systematic review was to examine hip IR ROM of baseball athletes to assess which population has the greatest risk of injury.

Methods. The systematic review was conducted through September 2023. Key words in the search included: “hip” AND “baseball” AND “internal rotation” OR “medial rotation.” For data analysis, studies were grouped into four categories based on the mean age of the participants. College-aged and professional populations were stratified to pitchers and position players, and measurements were compared bilaterally.

Results. A total of 23 articles and 2,196 bilateral hip IR ROM measurements met inclusion criteria. Hip IR ROM was decreased in all populations compared to normative values, though the decrease was most pronounced in the high school and college-aged populations. An increase in ROM of over seven degrees was seen in the professional population compared to the college-aged population.

Conclusions. The findings suggest a successful intervention for increasing hip IR ROM in professional populations. There may be a lack of effective injury prevention programs at the high school and collegiate levels. Future research should examine professional injury prevention programs, and how to modify them for lower-level populations where resources are less readily available.