National Athletic Trainers' Association Links

- NATA Home
- Online Manuscript Submisson and Review
- Advertising
- Facts & Figures
- Editor-in-Chief
- Journal Editors
- Editorial Board
- NATA Position Statements
- PubMed Central
- Search PubMed
- Contact Us

Related Articles

Articles Citing this Article

Google Scholar

Search for Other Articles By Author

- Stephen John Thomas
- Kathleen A. Swanik
- Charles Swanik
- Kellie C. Huxel

Search in:

- Athletic Training

Search

Previous Article Volume 44, Issue 3 (May 2009) Next Article

Add to Favorites Share Article Export Citations

Track Citations Permissions

Full-text PDF

Article Citation:
Stephen John Thomas, Kathleen A. Swanik, Charles Swanik, Kellie C. Huxel (*2009*) Glenohumeral Rotation and Scapular Position Adaptations After a Single High School Female Sports Season. Journal of Athletic Training: May 2009, Vol. 44, No. 3, pp. 230-237.

doi: 10.4085/1062-6050-44.3.230

Original Research

Glenohumeral Rotation and Scapular Position Adaptations After a Single High School Female Sports Season

Stephen John Thomas, MEd, ATC*, Kathleen A. Swanik, PhD, ATC†, Charles Swanik, PhD, ATC*, and Kellie C. Huxel, PhD, ATC‡

*University of Delaware, Newark, DE
†Neumann College, Aston, PA
‡Indiana State University, Terre Haute, IN. Dr Huxel is now at A. T. Still University, Mesa, AZ

Abstract

Context: Anterior instability and impingement are common in overhead athletes and have been associated with decreases in internal rotation (IR) and increases in external rotation (ER) motion. However, the chronology and the effect of different female sports on these conditions have yet to be determined.

Objective: To measure glenohumeral IR and ER rotation, total range of motion, and scapular position in female overhead athletes over a single competitive season.

Design: Multiple group pretest-posttest study.

Setting: High school.

Patients or Other Participants: Thirty-six female overhead athletes (age = 15.29 ± 1.18 years, height = 164.16 ± 7.14 cm, mass = 58.24 ± 9.54 kg) with no history of shoulder or elbow surgery participating in high school swimming, volleyball, or tennis.

Intervention(s): Participants were measured for all dependent variables at preseason and postseason.

Main Outcome Measure(s): Participants were measured for glenohumeral IR and ER with the scapula stabilized. Total glenohumeral range of motion was calculated as the sum of IR and ER. Scapular upward rotation was measured at 0°, 60°, 90°, and 120° of glenohumeral abduction in the scapular plane, and scapular protraction was measured at 0°, 45° (hands on hips), and 90° of glenohumeral abduction.

Results: Internal rotation decreased from preseason to postseason (P = .012).

Volume 44, Issue 3 (May 2009)

< Previous Next >

Current Issue
Available Issues

Journal Information

Print ISSN	1062-6050
eISSN	1938-162X
Frequency	Bimonthly:
	January/February
	March/April
	May/June
	July/August
	September/October
	November/December

Swimmers had less IR than both volleyball and tennis players (P = .001). External rotation also decreased in the swimmers (P = .001). Overall, preseason to postseason total motion decreased for athletes participating in swimming (P = .001) and tennis (P = .019). For all participants, preseason to postseason scapular protraction at 45° glenohumeral abduction decreased (P = .007).

Conclusions: Female overhead athletes demonstrated decreases in IR after only one competitive season. Clinically, our results indicate that overhead athletes should be monitored for motion changes throughout their competitive seasons.

Keywords: scapular dyskinesis, posterior shoulder capsule

Stephen John Thomas, MEd, ATC; Kathleen A. Swanik, PhD, ATC; Charles Swanik, PhD, ATC; and Kellie C. Huxel, PhD, ATC, contributed to conception and design; acquisition and analysis and interpretation of the data; and drafting, critical revision, and final approval of the manuscript.

Stephen John Thomas, MEd, ATC, 807 Waters Edge Drive, Newark, DE 19702, e-mail: sjthomas@udel.edu

Cited by

Stephen J. Thomas, Kathleen A. Swanik, Charles B. Swanik, and John D. Kelly IV. (2010) Internal Rotation and Scapular Position Differences: A Comparison of Collegiate and High School Baseball Players. *Journal of Athletic Training* **45**:1, 44-50
Online publication date: 1-Jan-2010.
Abstract | Full Text | PDF (442 KB)

top