Swimmers are more vulnerable to develop shoulder pain, injury vs non-overhead athletes

More research is needed on which intervention methods work best on swimmers.

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During the course of 12 weeks of training, swimmers experienced a decrease in subacromial space distance and an increase in forward shoulder posture, potentially making them more vulnerable to the development of shoulder pain and injury compared with non-overhead athletes, according to study results.

"[Swimmers] have a lot of pain during training season, and this [study] validates some of where that pain is coming from, [which is] over the course of the training season, they are getting these adaptations in their physical characteristics, predisposing them to injury," Elizabeth E. Hibberd, PhD, ATC, assistant professor and director of the Athletic Training Research Laboratory at The University of Alabama, told Orthopedics Today.

Swimmer training season

Hibberd and her colleagues evaluated 43 competitive adolescent swimmers and 29 non-overhead adolescent athletes who were not experiencing any shoulder, neck or back pain that limited their participation in sports activity before the start of the swim training season and at 6 weeks and 12 weeks after the initial testing session. Researchers had each participant complete a physical examination, including evaluation of posture and subacromial space distance at each testing session.

Results showed an approximate 15% increase in forward shoulder posture among swimmers during the course of the training season compared with an increase of approximately 1% among non-overhead athletes. Similarly, swimmers had a significantly greater decrease in subacromial space distance, with a 10.7% decrease in the subacromial space distance for the dominant arm in swimmers compared with 1.5% increase in distance for non-overhead athletes.

Between baseline and the 6-week follow-up test sessions, researchers noted changes in forward shoulder posture and changes in dominant normalized subacromial space distance had a significant fair to moderate negative relationship. Changes in forward shoulder posture and changes in nondominant normalized subacromial space distance had a similar relationship during the 6-week period.

“Although we did not measure strength in this study, that would be an indicator of the need for strengthening of posterior musculature because if [swimmers] had more strength in those muscles, those adaptations would not occur,” Hibberd said.

Under-researched groups

Future research should focus on what changes occur within one practice training session, as well as which intervention methods would be most beneficial — whether it be through strengthening or longer recovery period.

“I got into swimming research because it was an under-researched group with demands different than any other sport,” Hibberd said. “It has been rewarding to do research with swimmers because they always want to participate. I would [encourage] people to look at some of these under-researched groups because there is a lot of opportunity to help them as athletes and help the body of knowledge.” – by Casey Tingle

Reference:

Hibberd EE, et al. Am J Sports Med. 2016;doi:10.1177/0363546516669506.

For more information:

Elizabeth E. Hibberd, PhD, ATC, can be reached at The University of Alabama, 483 Russel Hall, Box 870311, Tuscaloosa, AL 35487; email: eehibberd@ches.ua.edu.

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