Management of Shoulder Pain in Competitive Swimmers

Tate AR: Willow Grove Physical Therapy, Willow Grove, PA, USA and Arcadia University, Glenside, PA, US

Purposes: 1.To review the recent literature regarding shoulder pain in competitive swimmers 2. To present a proposed multidimensional phased program based on my research and the research of others for conservative management shoulder pain in competitive swimmers

Description: In June 2014, the first return to swim protocol after non operative injury of the pediatric swimmer was published by Hamman in the International Journal of Sports Physical Therapy. This protocol proposes a phased progression of in water training based on a percentage of pre-injury training yardage as well as swimming effort quantified by target time intervals based on pre injury times. Phase 1 is utilized by swimmers who have been precluded from swimming for 6 weeks or longer due to their injury and phase 2 is used for swimmers who have completed phase 1 or have missed less than 6 weeks of swimming practice. In my 15 years of experience working with competitive swimmers, I have found that it is rare to see a swimmer who has halted swimming participation due to pain. My experience is consistent with that of Hibberd and Myers (2013) who have reported in their survey of over one hundred 13 to 18 year olds, “The majority of swimmers believe that mild to moderate shoulder pain is normal in swimming and should be tolerated to complete practice.” This finding, coupled with my research identifying risk factors associated with shoulder pain (Tate et al, 2012, and Harrington, Meisel and Tate, 2014) and identification of common in water and dry land training practices among competitive swimmers across the US (Tate et al, in press, J Sports Rehab), supports my opinion that the use of a stepped program based on distance and effort as described by Hamman (2014) could be combined with modification of the in water and dry land training regime and an impairment based physical therapy program to manage shoulder pain in currently practicing competitive swimmers.

Summary of Use: My research and the research of Sein et al (2010) have identified several factors associated with shoulder pain in competitive swimmers. These include increased hours and distance swum, a lack of cross training, limited pectoral and posterior shoulder length, and reduced shoulder strength and core endurance. The findings of my nationwide survey on training practices reveal that current dry land training lacks specificity in addressing the typical mobility restrictions and weaknesses found in swimmers and in water training incorporates kicking methods which place the swimmers’ shoulders in sustained extreme positions that increase shoulder pain. In addition, the average yardage swum by high school and collegiate swimmers makes them 4 times more likely to develop supraspinatus tendinopathy than those who swim less yardage. My proposed program incorporates dry land and in water training modifications including alteration of swimming yardage based on the principles described by Hamman in addition to a manual therapy and exercise program that addresses the specific impairments associated with swimmers’ shoulder pain.

Importance: It has been estimated that there are 2.5 million competitive swimmers aged 18 years or younger in the United States. Shoulder pain is a common problem with a

reported prevalence ranging from 40% to 91% among elite and non-elite competitive swimmers. A recent study of high school competitive swimmers revealed that 72% used pain medication in order to manage their shoulder pain during practice, with 47% using it regularly (Hibberd and Myers, 2013). The reported pain may be so severe that it can lead to functional impairments and may terminate swimming participation. The results of surgical intervention are less than optimal for returning the swimmer to previous training levels so physical therapy is the mainstay of conservative management of shoulder pain in competitive swimmers. Currently, no comprehensive evidence based guidelines exist which address both the conservative management of impairments typically seen in competitive swimmers as well as in water and dry land training modifications which may assist in functional recovery.