THE PREVALENCE OF SWIMMING INJURIES AND THEIR RISK FACTORS; A 12 MONTH RETROSPECTIVE STUDY

Heinonen Ari¹, Waller Benjamin¹, Ristolainen Leena², Kujala Urho M¹
(University of Jyväskylä¹, The ORTON Research Institute², Finland)

Purpose; Swimmers, although participating in a low impact sport, regularly suffer from career threatening injuries. Stress injuries, especially in the shoulder, knee and lumbar spine, have been shown to increase proportionally with volume of training. Acute injuries tend to result as of accidental contact situations and dry land training. The aim of this research is to discover the prevalence of injuries within Finnish swimming and factors associated with them.

Methods; A validated postal questionnaire was sent to the top 268 (147 Male, 121 female) competitive swimmers within Finland. Swimmers were selected from the Results from the ranking list for all events which was based on the FINA points system. The questionnaire consisted of sections asking about the occurrence, frequency and type of stress and acute injuries suffered during the 2005-2006 competitive season as well as basic information and training history. In total, 166 (62%) replies were received, 12 did not agree for participation, of the 154 who agreed to participate, 2 of these where excluded as competition swimming was not their main event. Thus, 152 (56%) subjects including 70 (46%) male and 82 (54%) female swimmers were analysed in this study.

Results; No significant difference between the training histories was found between male and females and therefore both were grouped together. Only expected difference in body composition (P<0.001) between genders existed. In total 204 injuries were reported with stress injuries accounting for 117 (57%) and acute injuries 87 (43%). Of the total injuries 74 (36%) were located in the shoulder, spine 26 (13%) and knee 34 (17%). Overuse injuries 60 (51%) were located in the shoulder, 14 (6%) in the spine and 19 (9%) in knee. Of the acute injuries 14 (16%) located in the shoulder, 12 (14%) in the spine, 15 (17%) in the knee and 8 (9%) in the ankle. One year cumulative incidence significantly (p<0.001) increased for all stress injuries as distance swum per year increased. Of the 204 injuries, 128 were reported to be caused directly by swimming. The one year ratio of injuries related to swimming was 0.57 injuries per 1000km swum. Those swimmers who suffered from at least one stress injury swum significantly further than those who did not suffer from any stress injuries P = .024. It was interesting to note that those swimmers who suffered from a stress injury in the shoulder joint performed significantly more joint stability exercises P = .008. No relationship between stretching and injury prevalence was found within this study.

Conclusion; The data indicated that swimming injuries are most commonly located within the shoulder region. As volume of swimming increased so did the risk of suffering from a stress injury. The data showed similar trends shown in previous research.

Keywords: Sports Injuries, Swimming