THE INCIDENCE OF INJURIES AND ILLNESS DURING OPEN-WATER SWIMMING EVENTS: OPTIMISING SWIMMER SAFETY

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Open-water swimming (OWS) is a popular mass-participation sport in the UK; however, it presents unique safety and medical challenges. The main objective was to estimate whether previous injury, changes in strength, range of motion (ROM), or upward scapular rotation (UR) are related to new shoulder injuries in water polo players.

Methods Thirty-nine players with were included in the study. Frontal plane shoulder internal (IR) and external rotation (ER) peak torque was measured using an isokinetic device at 90° abduction (CONtrex MJ). Shoulder flexibility for both ER and IR was measured using standard goniometry. Scapular upward rotation (UR) was measured with the shoulders at 90° abduction using a laser digital inclinometer. Independent t-tests and Mann-Whitney U tests were used to compare groups with and without new injuries. Effect sizes were calculated with a Hedge’s g correction. Chi squared analysis compared proportion of injured players with and without previous injury.

Results Eighteen participants (46%) had previous injuries at baseline. Players with a previous injury showed higher peak torques for IR (0.62±0.15 vs 0.54±0.13N/kg, p=0.04, g=0.68), as well as UR (9.9±9.1 vs 4.1±7.5°, p=0.04, g=0.68), but no statistical difference in IR (p=0.70). After nine months, there were no statistical strength differences between groups. Loss of IR ROM was significantly higher in the injured group (9.8±9.8 vs 4.0±6.7°, p=0.04, g=0.68), as well as UR (13.0±3.0 vs 10.4±3.3°, p=0.01, g=0.81). History of previous injury was significantly related to developing a new injury (OR 6.5, p=0.02). Logistic regression found previous injury and UR most important contributors to injury risk.

Conclusions Previous injury, changes in IR ROM and UR are related to new shoulder injuries in water polo, but further variables such as rest, training load, or psychosocial factors may explain the incidence of new injuries.