

Title: The integrity of the scapholunate ligament in competitive divers

Author: Beck, AJ

Institution: Centre for Ultrasound, AECC University College, Bournemouth

Wrist pain and injury is common condition in competitive, elite divers. Literature has shown that divers sustain high impacts of force through the wrists on water entry. It is likely this and the repetitive nature of the sport that results in wrist injuries^{1,2}. No studies have yet looked at the structures injured when divers have wrist pain. This study was conducted to ascertain the demographics of the diving population within the United Kingdom at competitive level and how many of them experienced wrist pain. It was also used to investigate if one of the crucial stabilising ligaments in the wrist was disrupted, the scapholunate ligament (SLL).

Data was collected at the British Diving Championships, 2018. 51 divers were eligible for inclusion and 43 divers took part. Two divers were excluded due to previous wrist surgery. Participants completed a questionnaire on diving career to date and wrist injuries. They then underwent wrist examination using Watson's test and ultrasound imaging of both SLL.

This study found that 78% of divers had disruption of one or both SLL. Of these, 65.9% had disruption of the ligament in the supporting hand rather than the entry hand. No significant difference was found between springboard and platform divers. Those divers who taped were found to reduce ligament disruption by 28 times over those who did not (OR 27.9, 95% CI 3.31 to 234, P=0.002). It was demonstrated that Watson's test has poor sensitivity and specificity, with reasonable positive predicted value.

Springboard and Platform divers at a competitive level are at high risk of SLL disruption. The supporting hand is more at risk than the entry hand. Taping confers a significant reduction in risk of disruption and should be used to prevent injury. Watson's test is a poor clinical test in diagnosis of SLL disruption.

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2. Prien, A., Mountjoy, M., Miller, J., Boyd, K., Hoogenband, C., Gerrard, D., Cherif, M., Lu, Yu., Nanousis, K., Liscano, E., Shahpar, F., Junge, A., 2016. Injury and illness in aquatic sport: how high is the risk? A comparison of results from three FINA world championships. *British Journal of Sports Medicine*, Volume 51, pages 277-282

