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Clinical assessment of scapula motion

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Abnormal scapulothoracic mechanics and scapulohumeral rhythm are implicated in shoulder pathologies, including glenohumeral impingement and rotator cuff tears. Upward scapula rotation, specifically asymmetry of scapula motion and associations of patterns through range with injury, was investigated in dominant and non-dominant limbs of nationally ranked junior and paralympic swimmers during competition season. The static and throughout phases measures of upward scapula rotation were: Phase I (start position, 45°), Phase II (45° to 90°), Phase III (90° to 135°) and Phase IV (135° to max). Injury was assessed with a validated questionnaire. Differences between side (dominant and non-dominant), group (junior and paralympic) and phase were examined. Significant differences (P<0.05) between groups were identified for dominant side at rest, 45° and 135° and in phases II and IV (including range). Scapulohumeral rhythm was higher in the non-dominant limb of paralympic swimmers but in the dominant limb of junior swimmers. Greatest differences in upward rotation between injured and non-injured swimmers were found in Phase I: 43.6% (3.3°) paralympic; 73.1% (8°) junior. Results suggested that the asymmetry of movement in both limbs, through all phases and at single points in range, should be investigated for assessing injury and developing preventive strategies and rehabilitation protocols.

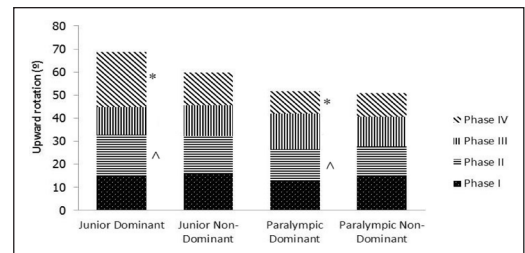


Figure-1: Comparison of phases of upward rotation between dominant and non-dominant limbs for junior and paralympic swimmers. * and ^ indicates significant differences between groups with matching symbols (P<0.05).

References

1. Fagher K, Lexell J (2014) Sports-related injuries in athletes with disabilities. *Scandinavian Journal of Medicine and Science in Sports*; 24: e320-e331.
2. Magno e Silva M, Bilzon J, Duarte E, Gorla J, Vital R (2013) Sport injuries in elite paralympic swimmers with visual impairment. *Journal of Athletic Training*; 48: 493-498.

Biography

Jo Brown has her expertise in swimming and other overhead athlete injuries, understanding their aetiology, progression and rehabilitation. She is passionate about decreasing shoulder injury in swimmers particularly young swimmers, strengthening and understanding the link between sports science and the clinic.

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