

ICSET FOCUSED SYMPOSIUM

September 8, 2023

Shoulder instability: what is the role of physiotherapy in improving clinical outcome?

Learning Objectives

1. critically evaluate the evidence for the effectiveness of current clinical management of shoulder instability
2. investigate alternative exercise treatment options that better reflect current understanding of the mechanisms whereby muscles stabilise the shoulder joint
3. appreciate the role psychosocial factors play in persistent shoulder instability

Description

Shoulder instability is a significant musculoskeletal problem which persists despite current treatment options. Evidence from recent systematic reviews indicates average rates of recurrent shoulder instability following traumatic shoulder dislocation in adults of approximately 40% with higher risk in men aged <40 years. This rate rises to nearly 75% in children 14-18 years of age. Similar rates of recurrent shoulder instability are reported following surgical treatment in patients with atraumatic instability who have failed conservative management.

High rates of recurrent shoulder instability may be due to the extremely mobile shoulder joint, which functions to facilitate maximum use of the hand. In order to achieve extensive range of motion, the structure of the shoulder joint is characterised by minimal passive constraint. The size differential between the glenoid fossa and the humeral head minimises the contribution of articular contact to joint stability; the joint capsule is lax to facilitate large range of movement; and the shoulder joint has relatively few ligaments to restrict joint motion. Consequently, there is unparalleled reliance on muscles to maintain functional shoulder joint stability. Recent research in the healthy shoulder indicates that rotator cuff muscles function in a direction-specific manner to stabilise the shoulder joint by counterbalancing potential translations created by other shoulder muscles.

Several risk factors predisposing recurrent shoulder instability have been identified. Atraumatic instability has been associated with mental health issues, particularly depression, with significant associations between the severity of shoulder disability and the severity of depressive illness in this population. Psychosocial factors eg kinesiophobia, have also been identified as risk factors for recurrence in traumatic shoulder instability. Physical risk factors in the traumatic population include age less than 40 years, being male, hypermobility, bony Bankart lesions and involvement in contact sport. While immobilisation of the shoulder for two weeks following a dislocation appears to decrease the risk of recurrent shoulder instability, there is limited evidence to suggest that physiotherapist supervised exercise treatment protects against recurrent instability in this population.

Examination of the Cochrane Database indicates scarce evidence for the effectiveness of treatment for shoulder instability. While limited, the available evidence does indicate that primary surgery followed by rehabilitation results in less frequent re-dislocation and recurrent instability and better patient reported outcomes compared to conservative treatment alone in young, male adults engaged in highly demanding physical activity who have sustained their first acute traumatic shoulder dislocation. The conservative treatment protocols in these trials are not contemporary and include prolonged periods of immobilisation. Additionally, recent research indicates that failure rates following surgical intervention are as high as 50% in this population. Importantly, there are no randomized trials to determine whether surgical or non-surgical treatment is more effective for other patient groups who have sustained a traumatic dislocation. Finally, the 2019 Cochrane review of conservative management following anterior shoulder dislocation reported that there were no

randomized trials investigating the effectiveness of various rehabilitation strategies for traumatic shoulder instability.

Evidence for the effectiveness of treatment for atraumatic instability is also scarce. Although rehabilitation is advocated as the primary treatment for patients with atraumatic instability, to our knowledge, there are no published randomised clinical trials comparing the effectiveness of surgical management to exercise therapy, immobilization duration or position for the treatment of atraumatic shoulder instability.

Despite the importance of neuromuscular control in maintaining functional stability at the shoulder joint and recommendations that exercise-based management should be the prime treatment option for many patients presenting with both traumatic and atraumatic shoulder instability, limited evidence exists to guide the development of clinical guidelines to treat this condition. In the absence of evidence from robust clinical trials, current clinical consensus guidelines for physiotherapy treatment of shoulder instability are largely reliant on expert opinion.

Implications/conclusions

In light of the less than optimal current clinical outcome for patients with shoulder instability there is an urgent need to:

- develop exercise strategies to address shoulder instability which reflect current understanding of the mechanisms whereby the rotator cuff muscles function to provide dynamic shoulder joint stability
- determine the effectiveness of new and current exercise strategies in the treatment of shoulder instability and compare with surgical management
- include assessment and treatment of psychosocial factors associated with shoulder instability
- develop evidence-based clinical guidelines for the treatment of shoulder instability

Summary

The symposium will consist of four 12 minute presentations covering the following topics related to shoulder instability: evidence of the effectiveness of current surgical and conservative treatment; current clinical practice guidelines; risk factors for the development of recurrent instability; proposed new exercise strategies specifically aimed at restoring the dynamic stabiliser function of the rotator cuff. This will be followed by a panel discussion (20 minutes) on potential strategies to improve treatment effectiveness and reduce rates of recurrent instability. The audience will then be invited to discuss the ideas presented to improve clinical practice, future research and education in the management of shoulder instability (20 minutes).

Presenters

Professor Karen Ginn



Karen is a Professor of Musculoskeletal Anatomy in the Faculty of Medicine & Health at the University of Sydney & is a musculoskeletal physiotherapist. She has taught functional, applied anatomy to various health professional groups at undergraduate & postgraduate level, currently conducts professional development courses related to the assessment & treatment of shoulder dysfunction nationally & internationally & is regularly invited to present at conferences both nationally & internationally. She is involved in research related to the assessment & treatment of shoulder dysfunction including: clinical trials investigating the efficacy of conservative and surgical treatment for shoulder dysfunction; electromyographic (EMG) studies investigating shoulder muscle activation patterns in normal subjects, swimming athletes & patients with shoulder dysfunction; EMG studies evaluating shoulder exercises; studies

evaluating the validity and reliability of components of the physical examination of the shoulder; investigations into shoulder stiffness and cortical changes associated with shoulder pain; & programs designed to prevent the development of shoulder pain in the elderly & various at risk professional groups. She has over 70 publications in peer-reviewed journals & is currently a member of the Board of the International Confederation for Scientific Societies of Shoulder and Elbow Therapy.

Ms Anju Jaggi



Anju is a Consultant Physiotherapist & Clinical director of Therapies at the Royal National Orthopaedic Hospital (RNOHT). She has over 25 years experience managing shoulder & elbow disorders with a specific interest in complex atraumatic shoulder instability. She has lectured internationally, published work in the field of shoulder rehabilitation, led and collaborated on numerous research projects. She holds a clinical teaching fellow post at University College London (UCL). She was President of the European Society of Shoulder & Elbow Rehabilitation (EUSSER) from 2012-2015, served on a NICE Committee 2018-2020, AHP representative on the British Shoulder & Elbow Society (BESS) Council (2018-2021). She was

awarded the BESS Copeland fellowship in 2020. She is currently a board member for the RNOH Charity. She has a passion for promoting evidence based care as well as globally promoting physical therapy and rehabilitation.

Dr Margie Olds



Margie is a Physiotherapy Specialist and leads the team of shoulder therapists at Auckland Shoulder Clinic in New Zealand. She has taught and lectured domestically and internationally, and has practiced clinically in the USA, UK, and NZ. Margie is passionate about advancing knowledge for shoulder rehabilitation, particularly in the area of shoulder instability. This has led to the development of the Flawless Motion shoulder brace to aid successful return to sport. Her PhD examined the predictors of recurrent shoulder instability and established an online tool for clinical use. Her subsequent research has explored clinical tests for return to sport, and the influence of fear of reinjury and other psychological factors on return

to sport after a shoulder injury. She is an honorary research fellow at Otago University,

A/Professor Amee Seitz



Amee is an Associate Professor in the Department of Physical Therapy and Human Movement Sciences at Northwestern University. Her clinical expertise is in the evaluation and management of musculoskeletal shoulder disorders. Her research has focused on underlying mechanisms of shoulder performance, injury, diagnosis, classification, and rehabilitation to optimize patient outcomes. She has co-authored several Clinical Practice Guidelines for shoulder disorders and is passionate about translating best evidence to practice. She is a former President of the American Society of Shoulder and Elbow Therapists and current Research Chair of the Academy of Orthopaedic Physical Therapy.