

Hand Rehabilitation

Evidence Update



April 2018
(Bimonthly)

Respecting everyone
Embracing change
Recognising success
Working together
Our hospitals.



Training Calendar 2018

April (12.00-13.00)

17th (Tue) **Statistics**

25th (Wed) **Literature Searching**

May (13.00-14.00)

3rd (Thu) **Critical Appraisal**

11th (Fri) **Statistics**

14th (Mon) **Literature Searching**

22nd (Tue) **Critical Appraisal**

30th (Wed) **Statistics**

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Outreach: Your Outreach Librarian can help facilitate evidence-based practice for all in the team, as well as assisting with academic study and research. We also offer one-to-one or small group training in **literature searching, critical appraisal and medical statistics**. Get in touch: library@uhbristol.nhs.uk

Literature searching: We provide a literature searching service for any library member. For those embarking on their own research it is advisable to book some time with one of the librarians for a one-to-one session where we can guide you through the process of creating a well-focused literature research. Please email requests to library@uhbristol.nhs.uk

Latest Evidence

TRIP Database

[Muscular strength as a predictor of all-cause mortality in apparently healthy population: a systematic review and meta-analysis of data from approximately 2 million men and women.](#)

[Outcome measurement of hand function following mirror therapy for stroke rehabilitation: A systematic review.](#)

[Treatment of chronic scapholunate dissociation with tenodesis: A systematic review.](#)

[Chronic effect of different types of stretching on ankle dorsiflexion range of motion: Systematic review and meta-analysis.](#)

[Intrarticular injections of hyaluronic acid for trapezio-metacarpal osteoarthritis: a systematic review.](#)



[Surgery for trigger finger](#)

Haroldo Junior Fiorini, Marcel Jun Tamaoki, Mário Lenza, Joao Baptista Gomes dos Santos, Flávio Faloppa, Joao carlos Belloti

Online Publication Date: February 2018



OpenAthens login required. Register here: <https://openathens.nice.org.uk/>

Searched but nothing relevant to add

Journal Tables of Contents

Click on the **journal title (+ Ctrl)** for the most recent tables of contents.

If you would like any of the papers in full text then please email the library:

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Journal of Hand Surgery (British and European)

Volume 43, Issue 3, March 2018

Journal of Hand Surgery (America)

Volume 43, Issue 4, April 2018

Journal of Hand Therapy

Volume 31, Issue 1, Jan-Mar 2018

Database Articles

Below is a selection of articles that were recently added to the healthcare databases. If you would like any of the following articles in full text, or if you would like a more focused search on your own topic, then get in touch: library@uhbristol.nhs.uk

HAND REHAB Flexor and Tendon Injuries

8. Ultrasound evaluation of stress injuries and physiological adaptations in the fingers of adolescent competitive rock climbers.

Author(s): Garcia, Kathryn; Rubesova, Erika; Jaramillo, Diego

Source: Pediatric Radiology; Mar 2018; vol. 48 (no. 3); p. 366-373

Publication Date: Mar 2018

Publication Type(s): Academic Journal

PubMedID: 29218364

Available at [Pediatric Radiology](#) - from ProQuest (Hospital Premium Collection) - NHS Version

Available at [Pediatric Radiology](#) - from EBSCO (MEDLINE Complete)

Available at [Pediatric Radiology](#) - from EBSCO (CINAHL Plus with Full Text)

Abstract:Background: The impact of high-intensity, repetitive training on the fingers of adolescent climbers is relatively unknown.Objective: To evaluate this effect by ultrasound (US) and to confirm some findings by magnetic resonance imaging (MRI).Materials and Methods: The US study was performed in 20 adolescent rock climbers (ages 10-17 years) and 6 non-climbing controls (ages 11-15 years). US was used to examine the third digit of the right hand for differences in thickness of soft tissue, flexor and extensor tendon, volar plate and bony and growth plate adaptations. In four climbers with finger deformity or pain, 3-T MR images were compared with US findings. Number of hours/week and years of climbing were used to group climbers in three levels (3=most intense training). Mann-Whitney test was used for statistical analysis.Results: Compared with non-climbing controls, climbers demonstrated significantly thicker flexor tendons, volar plates and soft tissues. Joint effusions were found in 13/19 (68%) climbers. Significant phalangeal malalignment was seen in 10/19 (53%) climbers. Growth plate deformities were identified in three level 3 climbers. US findings correlated with MRI for effusions, phalangeal growth plate injury, malalignment and adaptive changes. MRI additional showed capsule rupture (n=1), stress fracture (n=1) and phalangeal physal stress injury (n=1).Conclusion: Competitive rock climbing results in physiological adaptations in the fingers, an example being significant soft-tissue hypertrophy of the flexor. US demonstrated several non-physiological changes in response to repetitive stress in half of the climbers. MRI showed additional stress injuries to the growth plate, joints and bone.

Database: CINAHL

15. Muscle and Tendon Injuries: Evaluation and Management.

Author(s): Hrubes, Melody

Source: Medicine & Science in Sports & Exercise; Feb 2018; vol. 50 (no. 2); p. 388-388

Publication Date: Feb 2018

Publication Type(s): Review

Database: CINAHL

19. Flexor Tendon Injuries.

Author(s): Klifto, Christopher S.; Capo, John T.; Sapienza, Anthony; Yang, S. Steven; Paksima, Nader

Source: Journal of the American Academy of Orthopaedic Surgeons; Jan 2018; vol. 26 (no. 2)

Publication Date: Jan 2018

Publication Type(s): Academic Journal

PubMedID: 29303923

Available at [Journal of the American Academy of Orthopaedic Surgeons](#) - from EBSCO (MEDLINE Complete)

Abstract: Flexor tendon injuries of the hand are uncommon, and they are among the most challenging orthopaedic injuries to manage. Proper management is essential to ensure optimal outcomes. Consistent, successful management of flexor tendon injuries relies on understanding the anatomy, characteristics and repair of tendons in the different zones, potential complications, rehabilitation protocols, recent advances in treatment, and future directions, including tissue engineering and biologic modification of the repair site.

Database: CINAHL

HAND REHAB Altered Neurodynamics upper limb

1. Comparison of Median Nerve Mechanosensitivity and Pressure Pain Threshold in Patients With Nonspecific Neck Pain and Asymptomatic Individuals.

Author(s): Yılmaz, Seval; Taş, Serkan; Tunca Yılmaz, Öznur

Source: Journal of Manipulative & Physiological Therapeutics; Mar 2018; vol. 41 (no. 3); p. 227-233

Publication Date: Mar 2018

Publication Type(s): Academic Journal

Available at [Journal of Manipulative & Physiological Therapeutics](#) - from EBSCO (CINAHL Plus with Full Text)

Abstract: Objective The purpose of this study was to investigate the presence of median nerve mechanosensitivity by comparing median nerve neurodynamic test results of patients with nonspecific neck pain (NNP) and asymptomatic individuals. Methods A total of 40 patients (30 women, 10 men) with NNP between the ages of 21 and 62 years (39.53 ± 10.18 years) and 38 asymptomatic individuals (23 women, 15 men) between the ages of 18 and 60 years (37.13 ± 9.64 years) participated in the study. Pressure pain threshold was assessed with digital pressure algometer, cervical joint range of motion was assessed with a universal goniometer, and median nerve mechanosensitivity was assessed with Upper Limb Neurodynamic Test 1 (ULNT1). The test step where the first sensory response was given, the location and character of the sensory response, and the final elbow extension angle were recorded during ULNT1. Results Patients with NNP had significantly decreased pressure pain threshold ($P < .001$), decreased range of motion of cervical

flexion ($P < .001$), and decreased cervical lateral flexion ($P = .001$) compared with asymptomatic individuals, whereas no change was identified in range of motion of rotation ($P = .100$). In ULNT1, 45% of patients with NNP reported pain and 40% of them reported stretch. A total of 65% of asymptomatic individuals reported stretch, and 13% of them reported pain. It was identified in ULNT1 that final elbow extension angle was lower in the NNP group compared with asymptomatic individuals ($P = .008$). Conclusion Median nerve mechanosensitivity increased, pressure pain threshold decreased, and active neck motion was limited in individuals with NNP compared with asymptomatic individuals.

Database: CINAHL

HAND REHAB Mallet Finger/Thumb Deformity

1. Ultrasound evaluation of stress injuries and physiological adaptations in the fingers of adolescent competitive rock climbers.

Author(s): Garcia, Kathryn; Rubesova, Erika; Jaramillo, Diego

Source: Pediatric Radiology; Mar 2018; vol. 48 (no. 3); p. 366-373

Publication Date: Mar 2018

Publication Type(s): Academic Journal

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Abstract:Background: The impact of high-intensity, repetitive training on the fingers of adolescent climbers is relatively unknown.Objective: To evaluate this effect by ultrasound (US) and to confirm some findings by magnetic resonance imaging (MRI).Materials and Methods: The US study was performed in 20 adolescent rock climbers (ages 10-17 years) and 6 non-climbing controls (ages 11-15 years). US was used to examine the third digit of the right hand for differences in thickness of soft tissue, flexor and extensor tendon, volar plate and bony and growth plate adaptations. In four climbers with finger deformity or pain, 3-T MR images were compared with US findings. Number of hours/week and years of climbing were used to group climbers in three levels (3=most intense training). Mann-Whitney test was used for statistical analysis.Results: Compared with non-climbing controls, climbers demonstrated significantly thicker flexor tendons, volar plates and soft tissues. Joint effusions were found in 13/19 (68%) climbers. Significant phalangeal malalignment was seen in 10/19 (53%) climbers. Growth plate deformities were identified in three level 3 climbers. US findings correlated with MRI for effusions, phalangeal growth plate injury, malalignment and adaptive changes. MRI additional showed capsule rupture (n=1), stress fracture (n=1) and phalangeal physeal stress injury (n=1).Conclusion: Competitive rock climbing results in physiological adaptations in the fingers, an example being significant soft-tissue hypertrophy of the flexor. US demonstrated several non-physiological changes in response to repetitive stress in half of the climbers. MRI showed additional stress injuries to the growth plate, joints and bone.

Database: CINAHL

2. Analysing orthotic designs for de Quervain's disease based on in vivo gliding distance of extensor pollicis brevis tendon.

Author(s): Seiji Ishii; Koichi Sairyo

Source: International Journal of Therapy & Rehabilitation; Feb 2018; vol. 25 (no. 2); p. 51-57

Publication Date: Feb 2018

Publication Type(s): Academic Journal

Available at [International Journal of Therapy and Rehabilitation](#) - from EBSCO (CINAHL Plus with Full Text)

Abstract:Background/Aims: To reconsider orthotic designs used for de Quervain's disease based on in vivo information obtained from ultrasound images. Methods: The hands (n=40) of 20 healthy adult men and women participants with no history of thumb injury or deformation were examined. A two-dimensional tissue tracking system was used to quantitatively measure in vivo gliding distance in the extensor pollicis brevis tendon during thumb interphalangeal joint autonomic movement while wearing a thumb spica orthosis. Findings: Results revealed anatomical variations in the insertion of the extensor pollicis brevis tendon in 9 (22.5%) hands. A septum was noted in the first dorsal compartment of the extensor tendon in 23 (57.5%) hands. Multiple comparison testing of gliding distance across four groups, classified by the presence or absence of anatomical variations and/or septa using Tukey's test, revealed significant differences for gliding distance between groups with and without anatomical variations, regardless of whether septa were observed ($p=0.01$). Conclusions: It is necessary to evaluate physical characteristics such as septa and anatomical variations based on advanced screening with ultrasound examinations before considering thumb fixation range for patients in the acute inflammation phase or those exhibiting recurrence of de Quervain's disease.

Database: CINAHL

4. What is the Effect of Custom Fabricated Orthoses on Mallet Finger?

Author(s): Aguillon, A.; Bang, K.; Heyman, R.; Hudak, D.; Spallino, A.

Source: Journal of Hand Therapy; Jan 2018; vol. 31 (no. 1); p. 163-164

Publication Date: Jan 2018

Publication Type(s): Academic Journal

Available at [Journal of Hand Therapy](#) - from ProQuest (Hospital Premium Collection) - NHS Version

Abstract:The article discusses identification of superior intervention for the conservative treatment of mallet finger on the effects of distal interphalangeal (DIP) joint extension lag, skin complications, patient satisfaction, and functional outcomes. It mentions custom-made orthoses can result in the same outcome as prefabricated splints. It also mentions individualized thermoplastic orthosis could minimize costs associated with later changing orthosis type.

Database: CINAHL

HAND REHAB DeQuervain & tenosynovitis

1. Invasive vs Non Invasive Treatment in Stenosing Tenosynovitis.

Author(s): Kumar, Amit; Mittal, Piyush

Source: Indian Journal of Physiotherapy & Occupational Therapy; Jan 2018; vol. 12 (no. 1); p. 70-75

Publication Date: Jan 2018

Publication Type(s): Academic Journal

Available at [Indian Journal of Physiotherapy & Occupational Therapy](#) - from ProQuest (Hospital Premium Collection) - NHS Version

Available at [Indian Journal of Physiotherapy & Occupational Therapy](#) - from EBSCO (CINAHL Plus with Full Text)

Abstract:Background: de Quervain's tenosynovitis is an inflammation of abductor pollicis longus (APL) and extensor pollicis brevis (EPB) muscle tendon sheaths at the level of radial styloid process. Its conservative management includes nonsteroidal anti-inflammatory drugs, wrist and thumb immobilization, ultrasonic therapy (US Th.) and low level laser therapy (LLLT). Invasive methods include local injection of steroid in tendon sheath (inj. LHC) and surgery involving release of tendon sheath. Materials and Method: Sixty patients clinically diagnosed de Quervain's tenosynovitis were included in the study and randomly assigned to two groups. The average age was 36 years (range: 21-45 years). One group was given LLLT + US Th. And other was injection LHC. The clinical criteria used were Finkelstein's test, tenderness over radial styloid (Ritchie's tenderness scale), grip strength, pain (visual analog scale [VAS]) and radiological criteria was ultrasonographic assessment of change in thickness of APL and EPB tendon sheath. They were measured before commencement and at the end of seven sessions of therapy, as per standard procedure. Results: Improvement was seen within both groups in the following outcome measures assessed: Ritchie's tenderness scale, grip strength and VAS. Finkelstein's test was significantly improved in inj. LHC group. Ultrasonographic measurement of tendon sheath diameters, the mediolateral (ML), and anteroposterior (AP) diameters was not found to be significantly different in between the groups after treatment. On comparing both the groups, statistically significant difference was found. However, looking at the mean values, the grip strength and VAS showed better improvement in the inj LHC group as compared to the US+laser therapy group.

Database: CINAHL

HAND REHAB Dupuytren's (fasciectomy)

1. What do we know about managing Dupuytren's disease cost-effectively?

Author(s): Dritsaki, Melina; Rivero-Arias, Oliver; Gray, Alastair; Ball, Catherine; Nanchahal, Jagdeep

Source: BMC Musculoskeletal Disorders; Jan 2018; vol. 19 ; p. 1-9

Publication Date: Jan 2018

Publication Type(s): Academic Journal

PubMedID: 29370792

Available at [BMC Musculoskeletal Disorders](#) - from BioMed Central

Available at [BMC Musculoskeletal Disorders](#) - from Europe PubMed Central - Open Access

Available at [BMC Musculoskeletal Disorders](#) - from EBSCO (MEDLINE Complete)

Abstract:Background: Dupuytren's disease (DD) is a common and progressive, fibroproliferative disorder of the palmar and digital fascia of the hand. Various treatments have been recommended for advanced disease or to retard progression of early disease and to prevent deterioration of the finger contracture and quality of life. Recent studies have tried to evaluate the clinical and cost-effectiveness of therapies for DD, but there is currently no systematic assessment and appraisal of the economic evaluations. Methods: A systematic literature review was conducted, following PRISMA guidelines, to identify studies reporting economic evaluations of interventions for managing DD. Databases searched included the Ovid MEDLINE/Embase (without time restriction), National Health Service (NHS) Economic Evaluation Database (all years) and the National Institute for Health Research (NIHR) Journals Library) Health Technology Assessment (HTA). Cost-effectiveness analyses of treating DD were identified and their quality was assessed using the CHEERS assessment tool for quality of reporting and Phillips checklist for model evaluation. Results: A total of 103 studies were screened, of which 4 met the study inclusion criteria. Two studies were from the US, one from the UK and one from Canada. They all assessed the same interventions for advanced DD, namely collagenase Clostridium histolyticum injection, percutaneous needle fasciotomy and partial fasciectomy. All studies conducting a cost-utility analysis, two implemented a decision analytic

model and two a Markov model approach. None of them were based on a single randomised controlled trial, but rather synthesised evidence from various sources. Studies varied in their time horizon, sources of utility estimates and perspective of analysis. The overall quality of study reporting was good based on the CHEERS checklist. The quality of the model reporting in terms of model structure, data synthesis and model consistency varied across the included studies. Conclusion: Cost-effectiveness analyses for patients with advanced DD are limited and have applied different approaches with respect to modelling. Future studies should improve the way they are conducted and report their findings according to established guidance for conducting economic modelling of health care technologies. Trial Registration: The protocol was registered (CRD42016032989 ; date 08/01/2016) with the PROSPERO international prospective register of systematic reviews.

Database: CINAHL

HAND REHAB Dislocations Fingers

1. Medial Elbow Joint Space Increases With Valgus Stress and Decreases When Cued to Perform A Maximal Grip Contraction.

Author(s): Pexa, Brett S.; Ryan, Eric D.; Myers, Joseph B.

Source: American Journal of Sports Medicine; Apr 2018; vol. 46 (no. 5); p. 1114-1119

Publication Date: Apr 2018

Publication Type(s): Academic Journal

Abstract: Background: Previous research indicates that the amount of valgus torque placed on the elbow joint during overhead throwing is higher than the medial ulnar collateral ligament (UCL) can tolerate. Wrist and finger flexor muscle activity is hypothesized to make up for this difference, and in vitro studies that simulated activity of upper extremity musculature, specifically the flexor digitorum superficialis and flexor carpi ulnaris, support this hypothesis. Purpose: To assess the medial elbow joint space at rest, under valgus stress, and under valgus stress with finger and forearm flexor contraction by use of ultrasonography in vivo. Study Design: Controlled laboratory study. Methods: Participants were 22 healthy males with no history of elbow dislocation or UCL injury (age, 21.25 ± 1.58 years; height, 1.80 ± 0.08 m; weight, 79.43 ± 18.50 kg). Medial elbow joint space was measured by use of ultrasonography during 3 separate conditions: at rest (unloaded), under valgus load (loaded), and with a maximal grip contraction under a valgus load (loaded-contracted) in both limbs. Participants lay supine with their arm abducted 90° and elbow flexed 30° with the forearm in full supination. A handgrip dynamometer was placed in the participants' hand to grip against during the contracted condition. Images were reduced in ImageJ to assess medial elbow joint space. A 2-way (condition \times limb) repeated-measures analysis of variance and Cohen's d effect sizes were used to assess changes in medial elbow joint space. Post hoc testing was performed with a Bonferroni adjustment to assess changes within limb and condition. Results: The medial elbow joint space was significantly larger in the loaded condition (4.91 ± 1.16 mm) compared with the unloaded condition (4.26 ± 1.23 mm, $P < .001$, $d = 0.712$) and the loaded-contracted condition (3.88 ± 0.94 mm, $P < .001$, $d = 1.149$). No significant change was found between the unloaded and loaded-contracted conditions ($P = .137$). Conclusion: Medial elbow joint space increases under a valgus load and then decreases when a maximal grip contraction is performed. This indicates that wrist and finger flexor muscle contraction may assist in limiting medial elbow joint space, a result similar to findings of previous research in vitro. Clinical Relevance: Muscle activation of the upper extremity limits the medial elbow joint space, suggesting that injury prevention programs for throwing athletes should incorporate exercises for the elbow, wrist, and hand to limit excessive medial elbow joint space gapping during activities that create high valgus load.

Database: CINAHL

3. Biomechanical evaluation of pyrocarbon proximal interphalangeal joint arthroplasty: An in-vitro analysis.

Author(s): Completo, A.; Nascimento, A.; Girão, A.F.; Fonseca, F.

Source: Clinical Biomechanics; Feb 2018; vol. 52 ; p. 72-78

Publication Date: Feb 2018

Publication Type(s): Academic Journal

Abstract:Background Pyrocarbon proximal interphalangeal joint arthroplasty provided patients with excellent pain relief and joint motion, however, overall implant complications have been very variable, with some good outcomes at short-medium-term follow-up and some bad outcomes at longer-term follow-up. Implant loosening with migration, dislocation and implant fracture were the main reported clinical complications. The aim of the present work was to test the hypothesis that the magnitude proximal interphalangeal joint cyclic loads in daily hand functions generates stress-strain behaviour which may be associated with a risk of pyrocarbon component loosening in the long-term. Methods This study was performed using synthetic proximal and middle phalanges to experimentally predict the cortex strain behaviour and implant stability considering different load conditions for both intact and implanted states. Finite element models were developed to assess the structural behaviour of cancellous-bone and pyrocarbon components, these models were validated against experimentally measured cortex strains. Findings Cortex strains showed a significant increase at dorsal side and reduction at palmar side between intact and implanted states. Cancellous-bone adjacent to the condylar implant base components suffers a two to threefold strain increase, comparing with the intact condition. Interpretation The use of pyrocarbon implant changes the biomechanical behaviour of the joint phalanges and is associated with a potential risk of support cancellous-bone suffer fatigue failure in mid to long term due to the strain increase for cyclic loads in the range of daily hand activities, this risk is more prominent than the risk of bone resorption due to strain-shielding effect.

Database: CINAHL

HAND REHAB **Trapeziectomy (Osteoarthritis thumb)**

1. Outcomes of modified trapeziectomy with ligament reconstruction tendon interposition for the treatment of advanced thumb carpometacarpal arthritis: Two-year follow-up.

Author(s): Tao Wang; Gang Zhao; Yong-Jun Rui; Jing-Yi Mi

Source: Medicine; Mar 2018; vol. 97 (no. 13); p. 1-5

Publication Date: Mar 2018

Publication Type(s): Academic Journal

Available at [Medicine](#) - from Europe PubMed Central - Open Access

Available at [Medicine](#) - from IngentaConnect - Open Access

Database: CINAHL

2. Hematoma Distraction.

Author(s): Jarrett, Nicole J.; Hagberg, Willam C.

Source: Operative Techniques in Orthopaedics; Mar 2018; vol. 28 (no. 1); p. 6-9

Publication Date: Mar 2018

Publication Type(s): Academic Journal

Abstract:Surgery for thumb carpometacarpal arthritis is indicated after nonoperative interventions fail to provide relief. Trapeziectomy with temporary K-wire distraction is a simple technique that provides equivalent outcomes to ligament reconstruction techniques.

Database: CINAHL

3. Trapeziectomy and Suspensionplasty Using an Acellular Dermal Matrix Allograft.

Author(s): Solarz, Mark K.; Thoder, Joseph J.

Source: Operative Techniques in Orthopaedics; Mar 2018; vol. 28 (no. 1); p. 23-28

Publication Date: Mar 2018

Publication Type(s): Academic Journal

Abstract:Trapeziectomy and suspensionplasty with or without interposition is the most commonly performed surgery in the United States for symptomatic thumb carpometacarpal joint arthritis that has failed conservative treatment. The anterior oblique ligament is traditionally reconstructed using tendon autograft to stabilize the first ray after trapeziectomy, but concerns regarding donor site morbidity have led to the use of commercially available products. Acellular dermal matrix (ADM) allograft has been successfully and safely used in several orthopaedic procedures including anterior oblique ligament reconstruction and interposition following trapeziectomy. The use of ADM negates the need to harvest tendon autograft and therefore reduces both morbidity and operative time while also providing the ability to perform a consistent procedure in both primary and revision cases. In this article, we describe our preferred surgical technique of trapeziectomy and suspensionplasty using an ADM allograft.

Database: CINAHL

4. Suture Button Suspensionplasty.

Author(s): Mull, Aaron; Fowler, John R.

Source: Operative Techniques in Orthopaedics; Mar 2018; vol. 28 (no. 1); p. 40-42

Publication Date: Mar 2018

Publication Type(s): Academic Journal

Abstract:Traditional techniques for surgical treatment of thumb carpometacarpal arthritis require sacrifice either the flexor carpi radialis or abductor pollicis longus tendons. Although loss of these tendons appears to be well tolerated, maintenance of normal anatomy would be preferable. In addition, these techniques require 6-8 weeks of immobilization to allow or healing of the autograft reconstructions to occur. These factors led to the application of a suture button technique to facilitate suspension of the thumb metacarpal while allowing early range of motion. This article describes trapeziectomy with endobutton suspensionplasty, outcomes, and complications of this technique.

Database: CINAHL

5. Long-term Outcomes of Partial Trapeziectomy With Capsular Interposition Arthroplasty for Osteoarthritis of the Thumb Basal Joint.

Author(s): Moneim, Moheb S; Salas, Christina; Lese, Andrea B; Thompson, Norfleet B; Mercer, Deana M

Source: Orthopedics; Mar 2018; vol. 41 (no. 2)

Publication Date: Mar 2018

Publication Type(s): Academic Journal

PubMedID: 29377052

Available at [Orthopedics](#) - from EBSCO (MEDLINE Complete)

Abstract:The purpose of this study was to describe long-term outcomes of partial trapeziectomy with capsular interposition (PTCI) arthroplasty for patients with osteoarthritis of the basal joint of the thumb. A total of 27 patients (20 women, 7 men; 32 thumbs) with a mean age of 61 years (range, 47-74 years) agreed to return for follow-up and were included in the study. Mean postoperative follow-up was 64.3 months (range, 28-112 months). Evaluation included tests for grip and pinch strength; range of motion of the metacarpophalangeal joint; measurement of the first web space; completion of the Disabilities of the Arm, Shoulder and Hand (DASH) questionnaire; visual analog scale (VAS) measurements; and radiographic examination of the hand. A paired, 2-tailed t test was used to determine statistical significance ($P < .05$) of pre- and postoperative values. Postoperative values for grip strength were significantly increased from preoperative values. No significant loss of pinch strength was noted. Excessive hyperextension of the metacarpophalangeal joint did not occur, and the first web space was maintained. The mean DASH questionnaire and VAS scores were 5.06 (range, 0-26.5) and 0.32, respectively. Use of PTCI arthroplasty resulted in minimal loss in thumb height (7%) and significantly reduced thumb metacarpal subluxation (13%). There were no reported complications. The low DASH questionnaire and VAS scores compare well with other studies and indicate good functional outcomes. In treating thumb basal joint osteoarthritis, use of PTCI arthroplasty may result in improved thumb stability and grip strength, minimal subsidence of the thumb metacarpal, and reduced joint subluxation. [Orthopedics. 2018; 41(2):e228-e233.].

Database: CINAHL

6. Modified trapeziectomy with ligament reconstruction tendon interposition for the treatment of advanced thumb carpometacarpal arthritis: A case report: Erratum.

Author(s):

Source: Medicine; Feb 2018; vol. 97 (no. 8); p. 1-1

Publication Date: Feb 2018

Publication Type(s): Academic Journal

PubMedID: 29465548

Available at [Medicine](#) - from Europe PubMed Central - Open Access

Available at [Medicine](#) - from IngentaConnect - Open Access

Database: CINAHL

7. Modified trapeziectomy with ligament reconstruction tendon interposition for the treatment of advanced thumb carpometacarpal arthritis: A case report.

Author(s): Ji Peng You; Lu Lu; Cong Jie Li; Bao Ren; Tao Wang

Source: Medicine; Feb 2018; vol. 97 (no. 5); p. 1-4

Publication Date: Feb 2018

Publication Type(s): Academic Journal

Available at [Medicine](#) - from Europe PubMed Central - Open Access

Available at [Medicine](#) - from IngentaConnect - Open Access

Database: CINAHL

8. Modified trapeziectomy with ligament reconstruction tendon interposition for the treatment of advanced thumb carpometacarpal arthritis: A case report.

Author(s): Ji Peng You; Lu Lu; Cong Jie Li; Bao Ren; Tao Wang; You, Ji Peng; Lu, Lu; Li, Cong Jie; Ren, Bao; Wang, Tao

Source: Medicine; Feb 2018; vol. 97 ; p. 1-4

Publication Date: Feb 2018

Publication Type(s): Academic Journal

PubMedID: 29384844

Available at [Medicine](#) - from Europe PubMed Central - Open Access

Available at [Medicine](#) - from IngentaConnect - Open Access

Abstract:Rationale: Thumb carpometacarpal (CMC) arthritis is a common disease. Various procedures have been described for the treatment of advanced thumb CMC arthritis. This essay shows a CMC arthritis case treated by modified trapeziectomy with ligament reconstruction tendon interposition (LRTI).Patient Concerns: A 53-year-old Chinese female complained of pain and swelling at the base of the left thumb for 10 years. Visual analog scale (VAS) for thumb was 7 points, Disabilities of Arm, Shoulder and Hand (DASH) score was 51 points, and Kapandji score was 6 points before surgery. Preoperative range of motion (ROM) for radial abduction and volar abduction were 63°and 62°, respectively. Grip power was 15.3 kg and key-pinch power was 1.8 kg before operation. Preoperative waist flexion power was 20.9 kg. Hand x-ray showed left thumb CMC arthritis in Eaton stage III and the height of the trapezoidal space was 10 mm.Diagnoses: She was diagnosed with left thumb CMC arthritis (Eaton III stage).Interventions: The patient underwent modified trapeziectomy with LRTI. After exposing and removing trapezium, and a hole from the dorsal base to the center of the articular surface was drilled. Then we cut the whole flexor carpi radialis and divided it into 2 halves. Afterward, we passed one-half through the hole and tied it to the other part and sutured them. The rest tendon was then tied continuously and sutured. Then we rolled it up into the space where previous trapezium was located.Outcomes: Two years after operation, pain and swelling relieved and no recurrence of the clinical symptoms occurred. VAS, DASH, and Kapandji score were 2, 22, 7 points, respectively. ROM for radial abduction and volar abduction were 79° and 78°, respectively. Furthermore, grip power was 22.7 kg and key-pinch power was 3.8 kg. Waist flexion power was 20.0 kg. Hand x-ray showed that the height of the trapezoidal space was 9.8 mm.Lessons: Modified trapeziectomy with LRTI in treatment of advanced thumb CMC arthritis had a satisfactory efficacy. This new procedure not only prevents thumb sinking, but also provides enough support for thumb.

Database: CINAHL

HAND REHAB ❖ Wrist and Finger fractures (distal radius/scaphoid)

2. Hand and Wrist Injuries: Common Problems and Solutions.

Author(s): Pulos, Nicholas; Kakar, Sanjeev

Source: Clinics in Sports Medicine; Apr 2018; vol. 37 (no. 2); p. 217-243

Publication Date: Apr 2018

Publication Type(s): Academic Journal

Abstract:The article focuses on the management of injuries to the hands and wrist of athletes, and includes complications of treatment of sports injuries of the hand and wrist; list of sports injuries such as fractures, dislocations, and ligamentous; and impact of improper cast application on the same.

Database: CINAHL

3. Evidence-Based Review of Distal Radius Fractures.

Author(s): Mauck, Benjamin M; Swigler, Colin W

Source: Orthopedic Clinics of North America; Apr 2018; vol. 49 (no. 2); p. 211-222

Publication Date: Apr 2018

Publication Type(s): Periodical

PubMedID: 29499822

Abstract:Distal radius fractures are one of the most commonly treated fractures in the United States. The highest rates are seen among the elderly, second only to hip fractures. With the increasing aging population these numbers are projected to continue to increase. Distal radius fractures include a spectrum of injury patterns encountered by general practitioners and orthopedists alike. This evidence-based review of distal radius fractures incorporates current and available literature on the diagnosis, management, and treatment of fractures of the distal radius.

Database: CINAHL

5. Management of distal radius fractures – A new concept of closed reduction and standardised percutaneous 5-pin fixation.

Author(s): Vasudevan, P. N.; Lohith, B. M.

Source: Trauma; Apr 2018; vol. 20 (no. 2); p. 121-130

Publication Date: Apr 2018

Publication Type(s): Academic Journal

Available at [Trauma](#) - from ProQuest (Hospital Premium Collection) - NHS Version

Abstract:Introduction Management of distal radial fractures is a controversial topic, with poor reported outcomes in up to 30% of cases and a wide variety of treatment options such as closed reduction and POP cast, internal fixation, external fixation and percutaneous pin fixation in many configurations. Over the last 13 years, we have used a novel standardised 5-pin configuration of percutaneous K-wire fixation, which can be used in most types of distal radial fractures, where closed reduction is possible, and the ulna is intact or re-constructible. This study reports the outcomes of this technique. Methods All patients presenting to our unit with distal radial fracture in a 126-month period from June 2005 to December 2015 managed by closed reduction and 5-pin fixation were evaluated for complications including wire loosening and infection, tendon or nerve injury, reflex sympathetic dystrophy and functional outcome. Results A total of 490 consecutive patients with 496 distal radial fractures were treated in the study period with a mean age of 49.4 years; 57% were female and 57% were due to domestic falls. After death from unrelated causes and

loss to follow-up, 418 patients were reviewed in clinic, and a further 40 were patients contacted by telephone at one year, and clinical outcome was evaluated using Cooney's modification of Green and O'Brien's score. All fractures healed and 95.7% had an 'excellent' outcome and 3.9% were 'good'; only two patients achieved a 'fair' outcome, both of whom had comminuted intra-articular fractures with metaphyseal comminution. Complications were minimal and temporary with no cases of deep infection, tendon or nerve injury or reflex sympathetic dystrophy. Conclusions This study proved that our novel customised 5-pin percutaneous fixation was sufficiently stable and controlled all fragments of distal radial fractures effectively to allow early mobilisations to prevent stiffness and reflex sympathetic dystrophy with excellent functional outcomes.

Database: CINAHL

6. What's New in Hand and Wrist Surgery.

Author(s): Kakar, Sanjeev

Source: Journal of Bone & Joint Surgery, American Volume; Mar 2018; vol. 100 (no. 6); p. 526-532

Publication Date: Mar 2018

Publication Type(s): Academic Journal

PubMedID: 29557870

Available at [Journal of Bone & Joint Surgery, American Volume](#) - from ProQuest (Hospital Premium Collection) - NHS Version

Available at [Journal of Bone & Joint Surgery, American Volume](#) - from Ovid (Journals @ Ovid) - Remote Access

Abstract:The article discusses the papers and reports presented at the annual meetings of the American Academy of Orthopaedic Surgeons (AAOS), the American Society for Surgery of the Hand (ASSH) and the American Association for Hand Surgery (AAHS). Topics include the fragment-specific fixation or volar locking plates as treatment of stable distal radius fractures; scaphoid fractures and wrist arthritis.

Database: CINAHL

7. Recovery of grip strength and hand dexterity after distal radius fracture: A two-year prospective cohort study.

Author(s): Bobos, Pavlos; Nazari, Goris; Lalone, Emily A.; Grewal, Ruby; MacDermid, Joy C.

Source: Hand Therapy; Mar 2018; vol. 23 (no. 1); p. 28-37

Publication Date: Mar 2018

Publication Type(s): Academic Journal

Abstract:Introduction Clinicians often evaluate deficits after an injury by comparing the injured and uninjured side. It is important to understand what deficits occur in hand function after distal radius fracture, how they change over time and their clinical relevance. The purpose of this study was to evaluate the differences in grip strength and hand dexterity between the injured and uninjured hands of patients two years following distal radius fracture. Methods Patients with distal radius fracture were recruited in a specialized hand clinic. Grip strength and hand dexterity were examined bilaterally with a Jamar hand-held dynamometer and with the NK dexterity device at 3, 6, 12 and 24 months' post-injury respectively. Generalized linear modeling was performed, with age and sex as covariates to assess changes over time, and between sides. Results Patients (n = 154) exhibited mean differences of grip strength between injured and uninjured side at 3 months' (12.09 kg) and 6 months' (7.47 kg) follow-up. The associated deficit standardized response means (SRM) were 1.30

and 0.73, respectively. At 2-years follow-up the mean deficit on the injured side was 2.30 kg with SRM = 0.22. One hundred and eleven patients who completed dexterity testing demonstrated small to trivial side to side differences across all time points. Conclusions There were clinically important differences in grip strength between the injured and uninjured hands in patients with a distal radius fracture at 3 and 6 months' follow-up. However, at 12 and 24 months, grip strength differences were small and of uncertain clinical importance. Trivial to small differences in hand dexterity can be expected between the injured and uninjured hand by 2 years after distal radius fracture.

Database: CINAHL

8. Classification systems for distal radius fractures: Does the reliability improve using additional computed tomography?

Author(s): KLEINLUGTENBELT, Ydo V.; GROEN, Sylvester R.; HAM, S. John; KLOEN, Peter; HAVERLAG, Robert; SIMONS, Maarten P.; SCHOLTES, Vanessa A. B.; BHANDARI, Mohit; GOSLINGS, J. Carel; POOLMAN, Rudolf W.

Source: Acta Orthopaedica; Dec 2017; vol. 88 (no. 6); p. 681-687

Publication Date: Dec 2017

Publication Type(s): Academic Journal

Available at [Acta orthopaedica](#) - from Europe PubMed Central - Open Access

Available at [Acta orthopaedica](#) - from EBSCO (CINAHL with Full Text)

Available at [Acta orthopaedica](#) - from EBSCO (MEDLINE Complete)

Abstract:Background and purpose -- The reliability of conventional radiography when classifying distal radius fractures (DRF) is fair to moderate. We investigated whether reliability increases when additional computed tomography scans (CT) are used. Patients and methods -- In this prospective study, we performed pre- and postreduction posterior-anterior and lateral radiographs of 51 patients presenting with a displaced DRF. The case was included when there was a (questionable) indication for surgical treatment and an additional CT was conducted within 5 days. 4 observers assessed the cases using the Frykman, Fernández, Universal, and AO classification systems. The first 2 assessments were performed using conventional radiography alone; the following 2 assessments were performed with an additional CT. We used the intraclass correlation coefficient (ICC) to evaluate reliability. The CT was used as a reference standard to determine the accuracy. Results -- The intraobserver ICC for conventional radiography alone versus radiography and an additional CT was: Frykman 0.57 vs. 0.51; Fernández 0.53 vs. 0.66; Universal 0.57 vs. 0.64; AO 0.59 vs. 0.71. The interobserver ICC was: Frykman: 0.45 vs. 0.28; Fernández: 0.38 vs. 0.44; Universal: 0.32 vs. 0.43; AO: 0.46 vs. 0.40. Interpretation -- The intraobserver reliability of the classification systems was fair but improved when an additional CT was used, except for the Frykman classification. The interobserver reliability ranged from poor to fair and did not improve when using an additional CT. Additional CT scanning has implications for the accuracy of scoring the fracture types, especially for simple fracture types.

Database: CINAHL

9. Does socioeconomic status influence the epidemiology and outcome of distal radial fractures in adults?

Author(s): Clement, N.; Duckworth, A.; Wickramasinghe, N.; Court-Brown, C.; McQueen, M.

Source: European Journal of Orthopaedic Surgery & Traumatology; Dec 2017; vol. 27 (no. 8); p. 1075-1082

Publication Date: Dec 2017

Publication Type(s): Academic Journal

Abstract: Purpose: The aim of this study in adult patients with a distal radial fracture was to determine whether socioeconomic status influenced the epidemiology, mechanism of injury, fracture severity, or the outcome according to function, radiographic assessment, and rate of associated complications. Methods: We identified 3983 distal radial fractures over a 7-year period. Socioeconomic status was assigned using the Carstairs score, and the population was divided into quintiles depending on deprivation. Patient demographics, mechanism of injury, fracture severity, and radiographic assessment at time of injury were assessed for epidemiological differences according to social quintile. Functional outcome was assessed using grip strength, Moberg pickup test, return to normal use of the hand, and range of movement. Radiographs were assessed at 1 week, 6 weeks, and 1 year. Complications were defined as malunion, carpal tunnel syndrome, complex regional pain syndrome (CRPS), persistent pain, and subjective cosmetic deformity of the wrist. Results: Socioeconomically deprived patients were significantly younger ($p < 0.001$) and more likely to be male ($p = 0.017$); after adjusting for confounding factors, deprived patients were 3.1 (95% CI 1.4-4.7) years younger than the most affluent patients ($p < 0.001$). Deprived patients were more likely to sustain their fracture by a high-energy mechanism ($p = 0.004$). There were no significant differences between quintiles in outcome. There was a significantly greater prevalence of CRPS in more affluent patients ($p = 0.004$). Conclusions: Socioeconomically deprived patients sustaining a distal radial fracture are more likely to be younger and male. Outcome is not influenced by socioeconomic status, but the prevalence of CRPS is greater in more affluent patients.

Database: CINAHL

10. Validity and responsiveness of the Simple Test for Evaluating Hand Function.

Author(s): Irie, Keisuke; Iseki, Hirokatsu; Okamoto, Satomi; Nishimura, Seiji; Kobe, Akio; Kagechika, Kenji

Source: Hand Therapy; Dec 2017; vol. 22 (no. 4); p. 133-140

Publication Date: Dec 2017

Publication Type(s): Academic Journal

Abstract: Introduction Despite widespread use of the Simple Test for Evaluating Hand Function, we were unable to find studies to affirm the validity and responsiveness in patients with trauma and inflammatory diseases. The aim of this study was to demonstrate the criterion validity and responsiveness of the Simple Test for Evaluating Hand Function, a tool which is widely used in Japan. Methods Thirty patients between the ages of 20 and 82 years with distal radius fracture ($n = 10$), and cervical spondylosis myelopathy ($n = 20$) were included in this study. Concurrent validity was tested by examining the correlation between Simple Test for Evaluating Hand Function, the Purdue Pegboard Test, and the Disabilities of the Arm, Shoulder and Hand questionnaire. In addition, standardized response means were calculated to compare the responsiveness of the Simple Test for Evaluating Hand Function with Purdue Pegboard Test and Disabilities of the Arm, Shoulder and Hand. Results The correlation coefficient between Simple Test for Evaluating Hand Function and Purdue Pegboard Test was 0.70, and the correlation between Simple Test for Evaluating Hand Function and Disabilities of the Arm, Shoulder and Hand was -0.55 ($p < 0.05$). Standardized response mean shows that the Simple Test for Evaluating Hand Function (0.69) is more responsive than the Purdue Pegboard Test (0.53), and less responsive than Disabilities of the Arm, Shoulder and Hand (0.97). Conclusions The Simple Test for Evaluating Hand Function demonstrates concurrent validity and responsiveness as a performance based assessment of dexterity in patients with distal radius fracture and cervical spondylosis. We conclude that the Simple Test for Evaluating Hand Function could be used as a measure of dexterity or clinical change after therapy intervention. The Purdue

Pegboard Test may be used for patients with an occupation that requires integrated fine motor skills and bimanual activity, whereas the Simple Test for Evaluating Hand Function may be more suitable for patients who use a variety of unilateral grips such as pinch and span. The Simple Test for Evaluating Hand Function and Disabilities of the Arm, Shoulder and Hand can complement each other when measuring someone's activity and participation level.

Database: CINAHL

13. Digital Tomography for Detection of Acute Occult Scaphoid Fractures.

Author(s): BARCIA, ANTHONY M.; LIANG ZHOU; COOK, JAY B.; LINDELL, KENNETH K.; GUMBOC, REY D.; DYKSTRA, AARON D.; LACHKY, ROBERT J.; SHAHA, STEVEN H.; TAYLOR, KENNETH F.; Zhou, Liang

Source: Orthopedics; Nov 2017; vol. 40 (no. 6)

Publication Date: Nov 2017

Publication Type(s): Academic Journal

PubMedID: 29116329

Abstract:Diagnosis of occult scaphoid fractures remains a challenge. Traditional management consisting of 2 weeks of immobilization and repeat radiographs results in unnecessary immobilization of many patients without fracture. Magnetic resonance imaging (MRI) is sensitive but expensive. Digital tomography (DT) is an imaging technique that provides fine-cut visualization with minimal radiation exposure and may be used when there is high clinical suspicion despite negative findings on initial radiographs. The authors compared the ability of DT vs MRI to detect acute occult scaphoid fractures. This was an institutional review board-approved, prospective series. Adults for which clinical suspicion for acute scaphoid fracture (presenting within 96 hours of trauma) and negative findings on initial radiographs existed were included. Both a wrist tomogram and MRI were obtained. Wrists were immobilized and reevaluated at 10 to 14 days with repeat radiographs as a control. Studies were interpreted by a radiologist in a blinded fashion. Forty consecutive extremities in 39 patients met the inclusion criteria. Six (15%) of the 40 scaphoids were determined to be fractured on repeat radiographs. Digital tomogram yielded positive findings in 4 of these. Magnetic resonance imaging yielded positive findings in 8 (20%) of the 40 extremities. Sensitivities were 67% and 100% for digital tomogram and MRI, respectively ($P=.0001$). The positive predictive value was 100% for DT and MRI. The authors found that DT detects more occult scaphoid fractures than initial standard radiographs but is less sensitive than MRI. This is the first study to compare DT with MRI. Digital tomography can be used to augment radiographs and may increase diagnostic efficiency, minimize unnecessary immobilization, and reduce health care costs. [Orthopedics. 2017; 40(6):e1092-e1095.]

Database: CINAHL

14. Fractures of the Scaphoid.

Author(s): Shymko, Michael

Source: Radiologic Technology; Nov 2017; vol. 89 (no. 2); p. 177-181

Publication Date: Nov 2017

Publication Type(s): Academic Journal

Abstract:The article discusses some important issues to put in mind when it comes to scaphoid fractures. Topics discussed include the five metacarpal bones that form the palm, an image that shows the anatomy of the left wrist showing common fracture regions of the scaphoid, and mechanisms of scaphoid injury.

Database: CINAHL

15. Repositioning the scapula with taping following distal radius fracture: Kinematic analysis using 3-dimensional motion system.

Author(s): Turgut, Elif; Ayhan, Cigdem; Baltaci, Gul

Source: Journal of Hand Therapy; Oct 2017; vol. 30 (no. 4); p. 477-482

Publication Date: Oct 2017

Publication Type(s): Academic Journal

Available at [Journal of hand therapy : official journal of the American Society of Hand Therapists](#) - from ProQuest (Hospital Premium Collection) - NHS Version

Abstract: Study Design Cross-sectional and controlled laboratory study using pretest-posttest design. Introduction Patients with distal radius fracture (DRfx) report proximal segment problems. Taping is commonly recommended because it provides improved posture and function. Purpose of the Study This study aimed to investigate the 3-dimensional scapular kinematics and the effect of taping on the kinematics in participants with DRfx. Methods Twenty participants with a unilateral history of DRfx and 20 healthy controls participated. Scapular kinematics was assessed using an electromagnetic system. Three separate strips of elastic taping were applied for participants with DRfx over the arm, scapula, and middle and lower trapezius muscles through the paravertebral muscles. Afterward, the scapular kinematics was reassessed in taped condition. Results When participants with DRfx and healthy controls compared, the scapula was more downwardly rotated at 120° of humerothoracic elevation (mean difference [MD], 9.06°) and at 120° (MD, 9.04°), 90° (MD, 5.6°) of humerothoracic lowering, more upwardly rotated at 30° of humerothoracic lowering (MD, 5.1°). Taping showed a significant effect on kinematics; specifically, the scapula was more externally rotated (38.9° untaped vs 31.1° taped) and posteriorly tilted (-9.2° untaped vs -4.8° taped) during humerothoracic elevation and lowering for participants with DRfx. Discussion Participants with DRfx showed different scapular kinematics and taping resulted in changes on tested kinematic parameters during humeral movements. Differences in scapular motion during elevation with taping showed a specific pattern. Conclusions Overall, taping maintained a position likely to produce optimal rotator cuff function during early rehabilitation of patients with DRfx. Level of Evidence N/A.

Database: CINAHL

16. Prescribed exercise programs may not be effective in reducing impairments and improving activity during upper limb fracture rehabilitation: a systematic review.

Author(s): Bruder, Andrea M; Shields, Nora; Dodd, Karen J; Taylor, Nicholas F

Source: Journal of Physiotherapy (Elsevier); Oct 2017; vol. 63 (no. 4); p. 205-220

Publication Date: Oct 2017

Publication Type(s): Academic Journal

Abstract: Question What is the effect of exercise on increasing participation and activity levels and reducing impairment in the rehabilitation of people with upper limb fractures? Design Systematic review of controlled trials. Participants Adults following an upper limb fracture. Intervention Any exercise therapy program, including trials where exercise was delivered to both groups provided that the groups received different amounts of exercise. Outcome measures Impairments of body structure and function, activity limitations and participation restrictions. Results Twenty-two trials were identified that evaluated 1299 participants with an upper limb fracture. There was insufficient evidence from 13 trials to support or refute the effectiveness of home exercise therapy compared with therapist-supervised exercise or therapy that included exercise following distal radius or

proximal humeral fractures. There was insufficient evidence from three trials to support or refute the effectiveness of exercise therapy compared with advice/no exercise intervention following distal radius fracture. There was moderate evidence from five trials (one examining distal radius fracture, one radial head fracture, and three proximal humeral fracture) to support commencing exercise early and reducing immobilisation in improving activity during upper limb rehabilitation compared with delayed exercise and mobilisation. There was preliminary evidence from one trial that exercise to the non-injured arm during immobilisation might lead to short-term benefits on increasing grip strength and range of movement following distal radius fracture. Less than 40% of included trials reported adequate exercise program descriptions to allow replication according to the TIDieR checklist. Conclusion There is emerging evidence that current prescribed exercise regimens may not be effective in reducing impairments and improving activity following an upper limb fracture. Starting exercise early combined with a shorter immobilisation period is more effective than starting exercise after a longer immobilisation period. Registration CRD42016041818. [Bruder AM, Shields N, Dodd KJ, Taylor NF (2017) Prescribed exercise programs may not be effective in reducing impairments and improving activity during upper limb fracture rehabilitation: a systematic review. *Journal of Physiotherapy* 63: 205–220]

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