

# Hand Rehabilitation

## Evidence Update



**August 2017**  
**(Bimonthly)**

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# Training Calendar 2017

*All sessions are one hour*

## August (12.00-13.00)

4th (Fri)	Critical Appraisal
9th (Wed)	Literature Searching
15th (Tues)	Interpreting Statistics
24th (Thurs)	Critical Appraisal

## September (13.00-14.00)

Fri 1st	Literature Searching
Mon 4th	Critical Appraisal
Tue 12th	Interpreting Statistics
Wed 20th	Literature Searching
Thu 28th	Critical Appraisal

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Nothing of relevance to add



[Rehabilitation following surgery for flexor tendon injuries of the hand](#)

Susan E Peters , Bhavana Jha and Mark Ross 2017

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[Overview of finger, hand, and wrist fractures](#) Beta

...indicated, immobilization of the fracture, appropriate referral to a hand surgeon, and appropriate rehabilitation once the fracture is healed. This topic provides an overview of the initial evaluation, identification...

[Summary and recommendations](#)

[Finger and thumb anatomy](#) Beta

...The basic clinically relevant anatomy of the fingers and thumb is reviewed here. Specific finger injuries and their management are discussed elsewhere. Finger function involves a complex interaction among ...

[Thumb anatomy](#)

[Summary](#)

[Ulnar collateral ligament injury \(gamekeeper's or skier's thumb\)](#) Beta

... strength or holding power (pinch grip) of the thumb and first finger may be compromised. Standard posteroanterior, lateral, and oblique radiographs of the thumb are indicated in patients with suspected ulnar ...

[Patient presentation](#)

[Examination findings](#)

[Summary and recommendations](#)

## Journal Tables of Contents

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

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### **Journal of Hand Surgery (British and European)**

**July 2017, Volume 42, Issue 6**

### **Journal of Hand Surgery (America)**

**August 2017, Volume 42, Issue 8**

### **Journal of Hand Therapy**

**July-September 2017, Volume 30, Issue 3 (Quarterly)**

## Database Articles

Below are 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](mailto:library@uhbristol.nhs.uk)

### HAND REHAB Flexor and Tendon Injuries

#### 1. Validity of ultrasound in diagnosis of tendon injuries in penetrating extremity trauma.

**Author(s):** Mohammadrezaei, Narges; Seyedhosseini, Javad; Vahidi, Elnaz

**Source:** The American journal of emergency medicine; Jul 2017; vol. 35 (no. 7); p. 945-948

**Publication Date:** Jul 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28185748

**Abstract:**BACKGROUND Tendon ruptures are common musculoskeletal injuries all around the world. Correct and timely diagnosis of tendon injuries is obviously important for improving the treatment and minimizing the community costs. Ultrasound is now being considered as one of useful modalities in this area. OBJECTIVE The present study is going to validate the diagnostic ability of ultrasound in tendon injuries induced by penetrating extremity trauma. METHODS In this prospective, observational study, patients with penetrating extremity trauma and suspicion of tendon injuries were enrolled in our study.

#### 2. Risk factors that predict severe injuries in university rugby sevens players.

**Author(s):** Mirsafaei Rizi, Rezvan; Yeung, Simon S; Stewart, Nathan J; Yeung, Ella W

**Source:** Journal of science and medicine in sport; Jul 2017; vol. 20 (no. 7); p. 648-652

**Publication Date:** Jul 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28169148

Available in full text at [Journal of Science and Medicine in Sport](#) - from ProQuest

**Abstract:**OBJECTIVE To investigate injury incidence and the influence of physical fitness parameters on the risk of severe injuries in players on rugby sevens university teams. DESIGN Prospective cohort study. METHODS Rugby players from three universities (N=104; 90M:14F; 20.6±1.9years) were recruited before the beginning of the season. Players underwent pre-season assessments of power, strength, speed, agility, endurance, stability, and flexibility. Throughout the season, rugby-related injury and exposure data were collected. Potential predictor variables were analyzed using Cox proportional regression model to identify risk factors associated with severe injuries (time loss>28days).

### 3. Long-term outcome of paediatric flexor tendon injuries of the hand.

**Author(s):** Singer, Georg; Zwetti, Thomas; Amann, Ruth; Castellani, Christoph; Till, Holger; Schmidt, Barbara

**Source:** Journal of plastic, reconstructive & aesthetic surgery : JPRAS; Jul 2017; vol. 70 (no. 7); p. 908-913

**Publication Date:** Jul 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28461087

**Abstract:**The ideal rehabilitation regimen of paediatric flexor tendon injuries of the hand is discussed controversially. In this study, the clinical outcome of paediatric patients with flexor tendon injuries treated with a dynamic postoperative protocol was assessed. All children with flexor tendon injuries of the hand who were treated by a dynamic postoperative protocol between 1999 and 2011 were included. Patients were invited for a follow-up examination consisting of clinical examination, the TAM and Buck-Gramcko scores, and the linear measurement system. In total, 144 patients (mean age 9.1 years, range 1-17 years) with 267 flexor tendon injuries (128 flexor digitorum superficialis (FDS), 126 flexor digitorum profundus (FDP) and 13 flexor pollicis longus (FPL)) of 191 digits were treated. Of them, 43% (n = 62; 49 male, 13 female) with 88 digits (thumb n = 4, index finger n = 17, middle finger n = 25, ring finger n = 20, small finger n = 22) with 123 injured tendons (FDS n = 62, FDP n = 57, FPL n = 4) were included in the follow-up at a mean post-operative interval of 7.2 years (range 1-13 years). Using the Total Active Motion (TAM) score, an excellent and good outcome could be achieved in 41% and 48% of the patients, respectively. The zone of injury did not influence the objective outcome measures. Subjective and objective outcomes were not statistically different between young children ( $\leq 6$  years) and older children ( $> 6$  years). The present study demonstrates good to excellent outcome in a large cohort of paediatric patients with flexor tendon injuries of the hand treated with a dynamic mobilisation protocol irrespective of patient age.

### 4. Characteristics of acute groin injuries in the hip flexor muscles - a detailed MRI study in athletes.

**Author(s):** Serner, Andreas; Weir, Adam; Tol, Johannes L; Thorborg, Kristian; Roemer, Frank; Guermazi, Ali; Yamashiro, Eduardo; Hölmich, Per

**Source:** Scandinavian journal of medicine & science in sports; Jun 2017

**Publication Date:** Jun 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28649793

**Abstract:**Hip flexor injuries account for one third of acute groin injuries; however, little is known about specific injury characteristics. The aims of this study was to describe acute hip flexor injuries using magnetic resonance imaging (MRI) in athletes with acute groin pain, and to compare specific muscle injuries with reported injury situations. Male athletes with acute groin pain were prospectively and consecutively included during 3 sports seasons. MRI was performed within 7 days of injury using a standardized protocol and a reliable assessment approach. All athletes with an MRI confirmed acute hip flexor muscle injury were included. 156 athletes presented with acute groin pain of which 33 athletes were included, median age 26 y (range 18-35). There were 16 rectus femoris, 12 iliacus, 7 psoas major, 4 sartorius, and 1 tensor fascia latae injury. Rectus femoris injuries primarily occurred during kicking (10) and sprinting (4), whereas iliacus injuries most frequently occurred during change of direction (5). In 10 (63%) rectus femoris injuries tendinous injury was observed. The iliacus and psoas major injuries were mainly observed at the musculotendinous junction (MTJ), and two included tendinous injury. We have illustrated specific injury locations within these muscles, which may be relevant for the clinical diagnosis and prognosis of these

injuries. Most proximal rectus femoris injuries included tendinous injury. In contrast, distinct acute iliacus and psoas injuries predominantly occurred at the MTJ. Only the iliacus or psoas major were injured during change of direction, whereas rectus femoris injuries occurred primarily during kicking and sprinting. This article is protected by copyright. All rights reserved.

### **5. Examination of the Applicability of the Disabilities of the Arm, Shoulder and Hand (DASH) Questionnaire to Patients with Hand Injuries and Diseases Using Rasch Analysis.**

**Author(s):** Braitmayer, Kathrin; Dereskewitz, Caroline; Oberhauser, Cornelia; Rudolf, Klaus-Dieter; Coenen, Michaela

**Source:** The patient; Jun 2017; vol. 10 (no. 3); p. 367-376

**Publication Date:** Jun 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28005235

**Abstract:**BACKGROUNDThe Disabilities of the Arm, Shoulder and Hand (DASH) Questionnaire is the most commonly applied patient-reported outcome measure used to assess disability and functioning in clinical research and practice for patients with injuries and diseases of the upper extremities. The objective of this study was to assess whether the DASH is a valid and reliable questionnaire to measure disability and functioning in patients with hand injuries and diseases using Rasch analysis.METHODSWe performed a psychometric study using data derived from two multicentre studies carried out to develop the International Classification of Functioning, Disability and Health (ICF) Core Sets for Hand Conditions.

### **6. Patellar tendon reconstruction using an extended gastrocnemius flap following cryogenic injury to the knee.**

**Author(s):** Kim, Raymond H; Randolph, Amanda H; Tirre, Conrad J; Morrey, Matthew; Jennings, Jason M

**Source:** The Knee; Jun 2017; vol. 24 (no. 3); p. 686-691

**Publication Date:** Jun 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28347598

Available in full text at [Knee, The](#) - from ProQuest

**Abstract:**Cryogenic thermal necrosis after knee surgery is rare. We describe a patient who presented with an anterior knee soft tissue defect in conjunction with an extensor mechanism deficiency secondary to a cold thermal injury after an anterior cruciate ligament reconstruction. We treated the patient with a single stage surgical procedure combining patellar tendon reconstruction and soft tissue coverage utilizing the superficial portion of the patient's vascularized Achilles tendon attached to a medial gastrocnemius flap. The patient returned to unrestricted activities and has demonstrated this through a five year follow-up.



### **7. Nerve injury during anterior cruciate ligament reconstruction: A comparison between patellar and hamstring tendon grafts harvest.**

**Author(s):** Haviv, Barak; Bronak, Shlomo; Rath, Ehud; Yassin, Mustafa

**Source:** The Knee; Jun 2017; vol. 24 (no. 3); p. 564-569

**Publication Date:** Jun 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28404457

Available in full text at [Knee, The](#) - from ProQuest

**Abstract:**BACKGROUND Tendon harvesting for anterior cruciate ligament reconstruction often injures sensory branches of the saphenous nerve. The reports on the prevalence of these injuries are scarce, while the implications on patient satisfaction are not known. Our objective was to compare the prevalence of sensory nerve injuries in patellar to hamstring autograft harvesting for anterior cruciate ligament reconstructions and follow up their postoperative course. METHODS Between 2012 and 2014, patients who had a primary anterior cruciate ligament reconstruction with bone patellar tendon bone or hamstring autografts were included (n=94). We evaluated and compared demographic details, level of activity and postoperative sensation disturbances between both groups. Data was analyzed retrospectively.

### **8. Oblique incisions in hamstring tendon harvesting reduce iatrogenic injuries to the infrapatellar branch of the saphenous nerve.**

**Author(s):** Henry, Brandon Michael; Tomaszewski, Krzysztof A; Pękala, Przemysław A; Graves, Matthew J; Pękala, Jakub R; Sanna, Beatrice; Mizia, Ewa

**Source:** Knee surgery, sports traumatology, arthroscopy : official journal of the ESSKA; Jun 2017

**Publication Date:** Jun 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28573437

**Abstract:**PURPOSE Iatrogenic injury to the infrapatellar branch of the saphenous nerve (IPBSN) is associated with many surgical interventions to the medial aspect of the knee, such as anterior cruciate ligament (ACL) reconstruction. Different types of surgical incisions during hamstring tendon harvesting for ACL reconstruction are related to a variable risk of IPBSN injury. This study aimed to evaluate the risk of iatrogenic IPBSN injury during hamstring tendon harvesting for ACL reconstruction with different incision techniques over the pes anserinus. METHOD This study was performed on 100 cadavers. Vertical, horizontal, or oblique incisions were simulated on each cadaveric limb to determine the incidence of iatrogenic IPBSN injury.

### **13. From tendon injury to collagen-based tendon regeneration: overview and recent advances.**

**Author(s):** Rieu, Clément; Picaut, Lise; Mosser, Gervaise; Trichet, Léa

**Source:** Current pharmaceutical design; May 2017

**Publication Date:** May 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28521693

**Abstract:**Tendon injury is a clinical, societal and economical issue. Moreover, tendon repair represents an important clinical challenge, partly due to the mechanical constraints that occur at the junctions with muscle and bone. Several strategies have been developed for tendon repair. In this

review, we first assess the importance of tendon injuries from different sites and their causes. After a short overview of tendon three-dimensional organization, the complexity of the perfect repair quest is presented ranging from current clinical procedures to new engineering scaffolds. We then sum up tendon engineering requirements and focus on new collagen-based scaffolds, which raise promising prospects to mimic and repair tendon. In particular, we survey quantitatively a large panel of techniques to produce these scaffolds, detailing their principle and recent improvements.

#### **14. Distal Forearm Fracture Open Reduction-Internal Fixation: Sonographic Detection of Hardware Malalignment and Associated Tendon Injuries Missed by Radiography.**

**Author(s):** Morgan, Tara A; Piper, Samantha L; Lattanza, Lisa L; Goldstein, Ruth B; Link, Thomas; Motamedi, Daria

**Source:** Journal of ultrasound in medicine : official journal of the American Institute of Ultrasound in Medicine; May 2017

**Publication Date:** May 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28503753

**Abstract:**Tendon injury is a known complication of distal radius fracture plate and screw fixation. Targeted musculoskeletal sonography is uniquely capable of assessing both tendon integrity and hardware abnormalities not recognized on radiographs. Each of the 3 patients described presented with pain after an open reduction-internal fixation following a distal forearm fracture. In each patient, radiographic findings, specifically the hardware position, were interpreted as normal. Important radiographically occult observations were subsequently made with sonography, including 3 proud screws and tendon injuries, all of which required surgical treatment. This case series demonstrates the clinical utility of musculoskeletal sonography in symptomatic patients after distal radius open reduction-internal fixation with negative radiographic findings. In our practice, sonography has been the most useful modality for precluding missing or delaying the diagnosis and treatment of these hardware complications. We advocate its use as an adjunct in any department performing musculoskeletal imaging.

**Database:** Medline

#### **15. Cystic fibrosis transmembrane conductance regulator mediates tenogenic differentiation of tendon-derived stem cells and tendon repair: accelerating tendon injury healing by intervening in its downstream signaling.**

**Author(s):** Liu, Yang; Xu, Jia; Xu, Liangliang; Wu, Tianyi; Sun, Yuxin; Lee, Yuk-Wai; Wang, Bin; Chan, Hsiao-Chang; Jiang, Xiaohua; Zhang, Jinfang; Li, Gang

**Source:** FASEB journal : official publication of the Federation of American Societies for Experimental Biology; May 2017

**Publication Date:** May 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28495756

**Abstract:**Tendons are a mechanosensitive tissue, which enables them to transmit to bone forces that are derived from muscle. Patients with tendon injuries, such as tendinopathy or tendon rupture, were often observed with matrix degeneration, and the healing of tendon injuries remains a challenge as a result of the limited understanding of tendon biology. Our study demonstrates that the stretch-mediated activation channel, cystic fibrosis transmembrane conductance regulator

(CFTR), was up-regulated in tendon-derived stem cells (TDSCs) during tenogenic differentiation under mechanical stretching. Tendon tissues in CFTR dysfunctional mice (DF508) exhibited irregular cell arrangement, uneven fibril diameter distribution, weak mechanical properties, and less matrix formation in a tendon defect model. Moreover, both tendon tissues and TDSCs isolated from DF508 mice showed significantly decreased levels of tendon markers, such as scleraxis, tenomodulin, Col1A1 (collagen type I  $\alpha$  1 chain), and decorin. Furthermore, by RNA sequencing analysis, we demonstrated that Wnt/ $\beta$ -catenin signaling was abnormally activated in TDSCs from DF508 mice, thereby further activating the pERK1/2 signaling pathway. Of most importance, we found that intervention in pERK1/2 signaling could promote tenogenic differentiation and tendon regeneration both in vitro and in vivo. Taken together, our study demonstrates that CFTR plays an important role in tenogenic differentiation and tendon regeneration by inhibiting the  $\beta$ -catenin/pERK1/2 signaling pathway. The therapeutic strategy of intervening in the CFTR/ $\beta$ -catenin/pERK1/2 regulatory axis may be helpful for accelerating tendon injury healing, which has implications for tendon injury management. -Liu, Y., Xu, J., Xu, L., Wu, T., Sun, Y., Lee, Y.-W., Wang, B., Chan, H.-C., Jiang, X., Zhang, J., Li, G. Cystic fibrosis transmembrane conductance regulator mediates tenogenic differentiation of tendon-derived stem cells and tendon repair: accelerating tendon injury healing by intervening in its downstream signaling.

#### **16. Lateral ankle pain and peroneal tendon subluxation in a patient with peroneal quartus muscle and superior peroneal retinaculum injury.**

**Author(s):** Yıldız, Davut; Ekiz, Timur; Doğan, Adil

**Source:** Journal of back and musculoskeletal rehabilitation; May 2017

**Publication Date:** May 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28505958

#### **17. Effect of acute intermittent hypoxia on motor function in individuals with chronic spinal cord injury following ibuprofen pretreatment: A pilot study.**

**Author(s):** Lynch, Meaghan; Duffell, Lynsey; Sandhu, Milap; Srivatsan, Sudarshan; Deatsch, Kelly; Kessler, Allison; Mitchell, Gordon S; Jayaraman, Arun; Rymer, William Zev

**Source:** The journal of spinal cord medicine; May 2017; vol. 40 (no. 3); p. 295-303

**Publication Date:** May 2017

**Publication Type(s):** Journal Article

**PubMedID:** 26856344

**Abstract:**INTRODUCTIONAcute intermittent hypoxia (AIH) enhances lower extremity motor function in humans with chronic incomplete spinal cord injury (SCI). AIH-induced spinal plasticity is inhibited by systemic inflammation in animal models. Since SCI is frequently associated with systemic inflammation in humans, we tested the hypothesis that pretreatment with the anti-inflammatory agent ibuprofen enhances the effects of AIH.METHODSA randomized, double-blinded, placebo-controlled crossover design was used. Nine adults (mean age  $51.1 \pm 13.1$  years) with chronic motor-incomplete SCI ( $7.7 \pm 6.3$  years post-injury) received a single dose of ibuprofen (800 mg) or placebo, 90 minutes prior to AIH. For AIH, 9% O<sub>2</sub> for 90 seconds was interspersed with 21% O<sub>2</sub> for 60 seconds. Maximal voluntary ankle plantar flexion isometric torque was assessed prior to, and at 0, 30, and 60 minutes post-AIH. Surface electromyography (EMG) of plantar flexor muscles was also recorded.

### 18. Engineering Tissues to Heal Themselves: Biinks and Tendon Scaffolds Show Promise for Helping the Body Recover from Musculoskeletal Injury.

**Author(s):** Campbell, Sarah

**Source:** IEEE pulse; 2017; vol. 8 (no. 3); p. 19-24

**Publication Date:** 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28534758

**Abstract:** Sufferers of osteoarthritis are all too aware of the daily pain and impairment of swollen joints, of having to give up sports-and jobs-due to cartilage defects. What they may be less aware of is that three-dimensional (3-D) bioprinting and bioink technologies are being developed to revolutionize the existing (and often imperfect) treatments available to them.

## HAND REHAB Mallet Finger/Thumb Deformity

### 1. Treatment of the Upper Extremity Contracture/Deformities.

**Author(s):** Oishi, Scott N; Agranovich, Olga; Pajardi, Giorgio E; Novelli, Chiara; Baidurashvili, Alexey G; Trofimova, Svetlana I; Abdel-Ghani, Hisham; Kochenova, Evgenia; Prosperpio, Giulietta; Jester, Andrea; Yilmaz, Güney; Şenaran, Hakan; Kose, Oksana; Butler, Lesley

**Source:** Journal of pediatric orthopedics; ; vol. 37

**Publication Type(s):** Journal Article

**PubMedID:** 28594687

**Abstract:** Patients with arthrogryposis multiplex congenita have a characteristic upper extremity resting posture consisting of internal rotation of the shoulders, elbow extension, flexed wrists, thumb-in palm deformities, and variable degrees of finger contractures. Treatment of these patients is aimed at improving independence and performance of activities of daily living. Although each area needs to be assessed independently for the most appropriate surgical procedure, often multiple areas can be addressed at the same operative setting. This limits the number of anesthetic exposures and cast immobilization time. The following is a synopsis of treatment strategies presented at the second international symposium on Arthrogryposis which took place in St Petersburg in September 2014.

### 2. The latest treatment strategy for the rheumatoid hand deformity.

**Author(s):** Ishikawa, Hajime

**Source:** Journal of orthopaedic science : official journal of the Japanese Orthopaedic Association; Jul 2017; vol. 22 (no. 4); p. 583-592

**Publication Date:** Jul 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28341088

**Abstract:** With a remarkable improvement in the pharmacotherapy of rheumatoid arthritis (RA), severely handicapped patients are very rare to see. Healing, repair and drug-free, and toward radical cure are coming to be possible. In the clinical practice, more than 50% of the patients are in remission. However, some patients are still difficult to reach remission due to comorbidities and

economic burden. In the patient with clinical remission, smoldering synovitis so called "silent destructor" is often detected by ultrasonography or by synovial histology in the small joints of the hand. In recent years, over use with "no pain" increases the risk of deformity, osteoarthritis, tendon rupture and entrapment neuropathy. Highly motivated patients, who concern about the appearance of the hand, hope to get a higher level of activities of daily living and quality of life (QOL). A prospective cohort study was performed for the purpose of knowing whether rheumatoid hand surgery affects the patient's QOL and mental health as well as upper extremity function. A primary hand surgery was scheduled in 119 patients with RA. Synovectomy and Darrach procedure, radiolunate arthrodesis, reconstruction of the extensor tendons, arthroplasty at the metacarpophalangeal (MP) using Swanson implant, fusion at the proximal interphalangeal (PIP) joint, suspensionplasty at the carpometacarpal (CM) joint of the thumb (Thompson method) et al. were performed. As a result, Japanese version of the Stanford Health Assessment Questionnaire (J-HAQ:physical function,QOL), EuroQOL-5 dimension (EQ-5D:QOL), Beck Depression Inventory-II (BDI-II:depression, mentality) at 6 months and at 12 months after surgery improved significantly compared to those just before surgery ( $p < 0.01$ ). Disease activity score 28- C reactive protein 4 (DAS28-CRP (4)) decreased significantly ( $p < 0.01$ ). Latest hand surgery with tight medical control is possible to raise QOL and to provide mental wellness for the patient with RA.

### **3. Patient-initiated splintage of a mallet finger injury avoids unnecessary complications.**

**Author(s):** Prakash, Rohan; Ong, Edward; Brown, Dominic; Hunter, Alistair

**Source:** British journal of hospital medicine (London, England : 2005); May 2017; vol. 78 (no. 5); p. 296-297

**Publication Date:** May 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28489447

### **4. Mallet Fractures of the Thumb Compared With Mallet Fractures of the Fingers.**

**Author(s):** Oflazoglu, Kamilcan; Moradi, Ali; Braun, Yvonne; Ring, David; Chen, Neal C; Eberlin, Kyle R

**Source:** Hand (New York, N.Y.); May 2017; vol. 12 (no. 3); p. 277-282

**Publication Date:** May 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28453351

**Abstract:**BACKGROUNDThe purpose of this study was to look for differences in mechanism, radiographic findings, and treatment between mallet fractures of the thumb and mallet fractures of the index through small fingers.METHODSThis retrospective study included 24 mallet fractures of the thumb and 392 mallet fractures of other digits. We compared demographics, injury factors (side, dominant hand, time between injury and first visit, and injury mechanism), subluxation, fragment size, treatment, and time from injury to final evaluation between the 2 groups.

### 5. The Diagnosis and Management of Mallet Finger Injuries.

**Author(s):** Lamaris, Gregory A; Matthew, Michael K

**Source:** Hand (New York, N.Y.); May 2017; vol. 12 (no. 3); p. 223-228

**Publication Date:** May 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28453357

**Abstract:**BACKGROUND Mallet finger is a common injury of the extensor tendon insertion causing an extension lag of the distal interphalangeal joint. METHODS We reviewed the most current literature on the epidemiology, diagnosis, and management of mallet finger injuries focusing on the indications and outcomes of surgical intervention.

### 6. Thumb boutonnière deformity without rheumatoid arthritis or trauma.

**Author(s):** Hara, T; Yoneda, H; Kurimoto, S; Yamamoto, M; Iwatsuki, K; Hirata, H

**Source:** The Journal of hand surgery, European volume; Apr 2017 ; p. 1753193417704610

**Publication Date:** Apr 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28462679

**Abstract:** Boutonnière deformity of the thumb without rheumatoid arthritis or trauma is not widely recognised. This study aimed to investigate its prevalence, relation to sex and age, and identifying factors associated with the extensor mechanism using ultrasonography. We examined 248 thumbs from 127 participants who were asymptomatic for hand disorders and had no history of hand injury. Boutonnière deformity was identified in 20 thumbs of 17 participants and was significantly more prevalent among elderly participants than among young participants. No significant differences in sex or hand dominance were noted. The deformity had a significant effect on range of motion and grip and pinch strengths. The extensor pollicis brevis (EPB) tendon was significantly narrower in affected thumbs than in non-affected thumbs. The prevalence of boutonnière deformity without rheumatoid arthritis or trauma was 13%, and the deformity was associated with advanced age and a narrow EPB tendon. LEVEL OF EVIDENCE Level III.

## Strategy HAND REHAB Complex Regional Pain Syndrome (CRPS)

### 2. Physical therapy under hypnosis for the treatment of patients with type 1 complex regional pain syndrome of the hand and wrist: Retrospective study of 20 cases.

**Author(s):** Lebon, J; Rongièrès, M; Apredoei, C; Delclaux, S; Mansat, P

**Source:** Hand surgery & rehabilitation; Jun 2017; vol. 36 (no. 3); p. 215-221

**Publication Date:** Jun 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28465194

**Abstract:** Type 1 complex regional painful syndrome (CRPS-1) has a complex physiopathology. The aim of this study was to evaluate the effectiveness of physical therapy under hypnotherapy to treat this condition. Twenty patients with CRPS-1 at the wrist and hand were evaluated retrospectively: 13 women and 7 men with an average age of 56 years (34-75). Thirteen patients were in the inflammatory phase and 7 in the dystrophic phase. The main endpoints were pain (VAS, analgesic use), stiffness (wrist and finger range of motion), and strength (pinch and grasp). Secondary

endpoints were functional scores (QuickDASH, PWRE), patient satisfaction, return to work, and side effects. Results were satisfactory in all cases after 5.4 sessions on average. VAS decreased by 4 points, PWRE-pain by 4.1 points, and analgesic use was limited to paracetamol upon request. Finger and wrist range of motion increased and the QuickDASH decreased by 34 points, PRWE-function by 3.8 points, pinch strength increased 4 points, and grasp strength by 10 points. Return to work was possible in 80% of the cases. All patients were satisfied or very satisfied with the treatment. Physical therapy under hypnosis appears to be an effective treatment for CRPS-1 at the wrist and hand no matter the etiology.

### **3. Risk factors for complex regional pain syndrome in patients with surgically treated traumatic injuries attending hand therapy.**

**Author(s):** Savaş, Serpil; İnal, Esra Erkol; Yavuz, Dudu Dilek; Uslusoy, Fuat; Altuntaş, Selman Hakkı; Aydın, Mustafa Asım

**Source:** Journal of hand therapy : official journal of the American Society of Hand Therapists; May 2017

**Publication Date:** May 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28501479

Available in full text at [Journal of Hand Therapy](#) - from ProQuest

**Abstract:**STUDY DESIGNProspective cohort study.INTRODUCTIONIdentification of risk factors for CRPS development in patients with surgically treated traumatic injuries attending hand therapy allows to watch at-risk patients more closely for early diagnosis and to take precautionary measures as required.PURPOSE OF THE STUDYThe aim of this study was to evaluate the risk factors for the development of complex regional pain syndrome (CRPS) after surgical treatment of traumatic hand injuries.METHODSIn this prospective cohort, 291 patients with traumatic hand injuries were evaluated 3 days after surgery and monitored for 3 months for the development of CRPS. The factors assessed for the development of CRPS were age, sex, manual work, postoperative pain within 3 days measured on a Pain Numerical Rating Scale (0-10), and injury type (crush injury, blunt trauma, and cut laceration injury).

### **4. Complex regional pain syndrome type 1: Analysis of 108 patients.**

**Author(s):** Pendón, Gisela; Salas, Adrian; García, Mercedes; Pereira, Dora

**Source:** Reumatologia clinica; 2017; vol. 13 (no. 2); p. 73-77

**Publication Date:** 2017

**Publication Type(s):** Journal Article

**PubMedID:** 27132482

Available in full text at [Reumatologia clinica \[Reumatol Clin\]](#) NLMUID: 101293923 - from EBSCOhost

**Abstract:**INTRODUCTIONComplex regional pain syndrome (CRPS) type 1 is characterized by the presence of pain, edema, functional impotence, impaired mobility, trophic changes, vasomotor instability and bone demineralization.MATERIAL AND METHODSWe carried out a retrospective and prospective, descriptive, observational study of 108 patients over 18 years of age with suspected CRPS who met Doury's criteria. We recorded demographic data, clinical characteristics, comorbidities, previous predisposing conditions and triggering factors, such as injury or fracture. We evaluated laboratory data, serial plain X-rays, 3-phase bone scintigraphy with technetium 99 and bone density scan, as well as drug treatment, rehabilitation and disease course.

## **Strategy** HAND REHAB DeQuervain's tenosynovitis

### **1. Effectiveness of Corticosteroid Injections for Treatment of de Quervain's Tenosynovitis.**

**Author(s):** Oh, Jinhee K; Messing, Susan; Hyrien, Ollivier; Hammert, Warren C

**Source:** Hand (New York, N.Y.); Jul 2017; vol. 12 (no. 4); p. 357-361

**Publication Date:** Jul 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28644946

**Abstract:**BACKGROUNDAlthough surgery can provide definitive treatment for de Quervain's tenosynovitis, nonoperative treatment could be preferable if symptoms are predictably relieved. We sought to determine the effectiveness of corticosteroid injections as treatment for de Quervain's tenosynovitis and to evaluate patient characteristics as predictors of treatment outcome.METHODSA retrospective study was conducted using our institutional database International Classification of Disease, version 9 (ICD-9) code list for de Quervain's tenosynovitis. Treatment success was defined as relief of symptoms after 1 or 2 injections. Relief was defined as resolution or improvement to the extent that the patient did not seek further intervention. Failure was defined as a subsequent surgical release or a third injection. Logistic regression analyses were performed to look for univariate associations between patient demographics/comorbidities and risk of treatment failure.

### **2. Effects of metabolic syndrome on the functional outcomes of corticosteroid injection for De Quervain tenosynovitis.**

**Author(s):** Roh, Y H; Noh, J H; Gong, H S; Baek, G H

**Source:** The Journal of hand surgery, European volume; Jun 2017; vol. 42 (no. 5); p. 481-486

**Publication Date:** Jun 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28490264

**Abstract:**Metabolic syndrome is a constellation of medical conditions that arise from insulin resistance and abnormal adipose deposition and function. In patients with metabolic syndrome and De Quervain tenosynovitis this might affect the outcome of treatment by local corticosteroid injection. A total of 64 consecutive patients with De Quervain tenosynovitis and metabolic syndrome treated with corticosteroid injection were age- and sex-matched with 64 control patients without metabolic syndrome. The response to treatment, including visual analogue scale score for pain, objective findings consistent with De Quervain tenosynovitis (tenderness at first dorsal compartment, Finkelstein test result), and Disability of the Arm, Shoulder, and Hand score were assessed at 6, 12, and 24 weeks follow-up. Treatment failure was defined as persistence of symptoms or surgical intervention. Prior to treatment, patients with metabolic syndrome had mean initial pain visual analogue scale and Disability of the Arm, Shoulder, and Hand scores similar to those in the control group. The proportion of treatment failure in the metabolic syndrome group (43%) was significantly higher than that in the control group (20%) at 6 months follow-up. The pain visual analogue scale scores in the metabolic syndrome group were higher than the scores in the control group at the 12- and 24-week follow-ups. The Disability of the Arm, Shoulder, and Hand scores of the metabolic syndrome group were higher (more severe symptoms) than those of the control group at the 12- and 24-week follow-ups. Although considerable improvements in symptom severity and hand function will likely occur in patients with metabolic syndrome, corticosteroid



injection for De Quervain tenosynovitis is not as effective in these patients compared with age- and sex-matched controls in terms of functional outcomes and treatment failure. LEVEL OF EVIDENCE III.

### **3. Real-life effectiveness of spa therapy in rheumatic and musculoskeletal diseases: a retrospective study of 819 patients.**

**Author(s):** Karagülle, Mine; Kardeş, Sinan; Karagülle, Müfit Zeki

**Source:** International journal of biometeorology; May 2017

**Publication Date:** May 2017

**Publication Type(s):** Journal Article

**PubMedID:** 28560466

**Abstract:** The objective of this study is to determine the use and efficacy of spa therapy in patients with a wide spectrum of rheumatic and musculoskeletal diseases under real-life clinical practice circumstances. In this retrospective observational study at the Medical Ecology and Hydroclimatology Department of Istanbul Faculty of Medicine, the records of all adult patients with rheumatic and musculoskeletal diseases who were prescribed a spa therapy in various health resorts in Turkey between 2002 and 2012 were analyzed. Patients sojourned to and stayed at a health resort and followed a usual 2-week course of spa therapy. The patients were examined within a week before and after the spa therapy at the department by the physicians and outcome measures were pain intensity (visual analog scale, VAS), patient's general evaluation (VAS), physician's general evaluation (VAS), Health Assessment Questionnaire (HAQ), Lequesne's Functional Index (LFI), Western Ontario and McMaster Universities Index (WOMAC), Waddell Index (WI), Neck Pain and Disability Scale (NPDS), Shoulder Disability Questionnaire (SDQ), Fibromyalgia Impact Questionnaire (FIQ), and Beck's Depression Inventory (BDI). In total, 819 patients were included in the analysis. The diagnoses were 536 osteoarthritis; 115 fibromyalgia; 50 lumbar disc herniation; 34 cervical disc herniation; 23 nonspecific low back pain; 22 ankylosing spondylitis; 16 rheumatoid arthritis; 9 rotator cuff tendinitis; and 14 other conditions/diseases including scoliosis, stenosing flexor tenosynovitis, congenital hip dislocation in adult, Behçet's disease, de Quervain tendinopathy, psoriatic arthritis, osteoporosis, fracture rehabilitation, and diffuse idiopathic skeletal hyperostosis. Statistically significant decrease in pain scores was found in all patients except hip osteoarthritis ( $p = 0.063$ ) and rheumatoid arthritis ( $p = 0.134$ ) subgroups; and statistically significant improvement in function in all patients except hip osteoarthritis ( $p = 0.068$ ), rheumatoid arthritis ( $p = 0.111$ ), and rotator cuff tendinitis ( $p = 0.078$ ) subgroups. In daily clinical practice, spa therapy is prescribed and practiced mainly for osteoarthritis, then fibromyalgia, lumbar/cervical disc herniation, and nonspecific low back pain; and less for ankylosing spondylitis, rheumatoid arthritis, and rotator cuff tendinitis. The study results suggest that real-life spa therapy may be effective in a variety of rheumatic and musculoskeletal diseases by improving pain and function.



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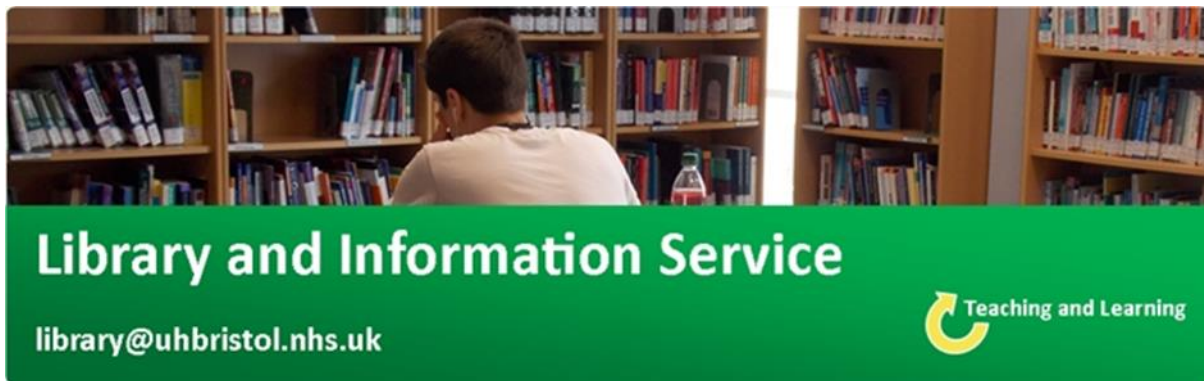
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