University Hospitals Bristol NHS
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Physiotherapy Outpatients

Current Awareness Newsletter

November/ December 2016

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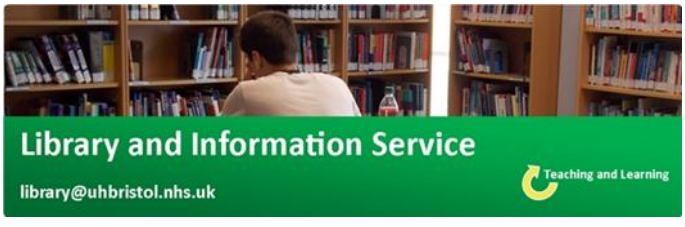

Training Calendar 2016

All sessions are 1 hour

December (12pm)

Thurs 8th Information resources
Fri 16th Literature Searching
Mon 20th Critical Appraisal

January (1pm - 2pm)

Tues 10th Literature Searching
Weds 18th Critical Appraisal
Thurs 26th Interpreting Statistics

February (12pm - 1pm)

Fri 3rd Literature searching
Mon 6th Critical Appraisal
Tues 14th Interpreting Statistics

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The Latest Evidence for…

NICE National Institute for Health and Care Excellence
Nothing to add

Cochrane Library
Nothing to add

UpToDate®
OpenAthens login required. Register here: https://openathens.nice.org.uk/
Nothing to add

Other – Behind the Headlines, Guidance
Nothing to add

Journal Tables of Contents

The most recent issues of key journals. If you would like any of the papers in full text then please email the library: library@uhbristol.nhs.uk

Manual Therapy

December 2016, Volume 26

http://www.manualtherapyjournal.com/current

Physiotherapy

December 2016, Volume 102, Issue 4

http://www.physiotherapyjournal.com/

BMJ

Current articles

http://www.bmj.com/archive/online/2016

Spine

November 15 2016, Volume 41, Issue 22

http://journals.lww.com/spinejournal/pages/currenttoc.aspx

British journal of sports medicine

December 2016, Volume 50, Issue 23

http://bjsm.bmj.com/content/current

Exercise

Creating a search strategy

Scenario: A 64 year old obese male who has tried many ways to lose weight presents with a newspaper article about 'fat-blazer' (chitosan). He asks for your advice.

1. **What would your PICO format be?**

Population/problem	
Intervention/indicator	
Comparator	
Outcome	

2. **What would your research question be?**

Taken from the Centre for Evidence Based Medicine

*Find out more about constructing an effective search strategy in one of our **Literature searching** training sessions.*
For more details, email library@uhbristol.nhs.uk.

PICO: P = obese patients; I = chitosan; C = placebo; O = decrease weight
Research question: In obese patients, does chitosan, compared to a placebo, decrease weight?

Current Awareness Database Articles

Below is a selection of articles recently added to the healthcare databases, grouped in the following categories:

Achilles Tendon Rupture

The Neglected Achilles Tendon Rupture Repaired With Allograft: A Review of 14 Cases.

Author(s): Ofili, Kene P; Pollard, Jason D; Schuberth, John M

Source: The Journal of foot and ankle surgery : official publication of the American College of Foot and Ankle Surgeons; 2016; vol. 55 (no. 6); p. 1245-1248

Publication Date: 2016

Abstract: Various surgical techniques have been reported for the repair of neglected Achilles tendon ruptures, including V-Y advancements, synthetic augmentations, and collagen implants. The use of an Achilles tendon allograft allows bridging of large defects without donor site morbidity, with a relative ease of technique and adequate graft availability. The present retrospective report focused on the outcomes of a series of 14 patients with neglected ruptures treated with an Achilles tendon allograft. Patients were included in the present series if they had ≥12 months of postoperative follow-up data available and the allograft had been used without any adjunctive procedures. Of the 14 patients, 6 were female (43%) and 8 were male (57%), with a mean follow-up period of 16.1 ± 3 (range 12 to 27) months. The mean interval from the initial injury to surgery was 6.9 ± 5 (range 1 to 28) months. The mean intraoperative defect size was 7.0 ± 3 (range 4 to 15) cm. A calcaneal block was used in 2 patients (14%). All patients were able to perform a single heel rise at a mean of 27 ± 11 (range 12 to 37) weeks postoperatively. Weightbearing in normal shoe gear was achieved at a mean of 13.5 ± 3 (range 12 to 17) weeks. Complications included 1 delayed union (7%) of the calcaneal bone block. Repair of the neglected Achilles tendon rupture with an allograft appears to be an acceptable approach, with good overall outcomes and low risk. These results suggest that this method of repair compares favorably with established alternatives. Copyright © 2016 American College of Foot and Ankle Surgeons. Published by Elsevier Inc. All rights reserved.

Increasing incidence of acute Achilles tendon rupture and a noticeable decline in surgical treatment from 1994 to 2013. A nationwide registry study of 33,160 patients.

Author(s): Ganestam, Ann; Kallemose, Thomas; Troelsen, Anders; Barfod, Kristoffer Weisskirchner

Source: Knee surgery, sports traumatology, arthroscopy : official journal of the ESSKA; Dec 2016; vol. 24 (no. 12); p. 3730-3737

Publication Date: Dec 2016

Abstract: The purpose of this study is to investigate the incidence of acute Achilles tendon rupture in Denmark from 1994 to 2013 with focus on sex, age, geographical areas, seasonal variation and choice of treatment. The National Patient Registry was retrospectively searched to find the number of acute Achilles tendon rupture in Denmark during the time period of 1994-2013. Regional population data were retrieved from the services of Statistics Denmark. During the 20-year period, 33,160 ruptures occurred revealing a statistically significant increase in the incidence ($p < 0.001$, range = 26.95-31.17/100,000/year). Male-to-female ratio was 3:1 and average age 45 years for men and 44 years for women. There was a statistically significant increasing incidence for people over 50 years. A higher incidence in rural compared with urban geographical areas was found, but this

was not statistically significant. There was a statistically significant decreasing incidence of patients treated with surgery from 16.9/10(5) in 1994 to 6.3/10(5) in 2013. The incidence of acute Achilles tendon rupture increased from 1994 to 2013 based on increasing incidence in the older population. There was no difference in incidence of acute Achilles tendon rupture in the rural compared with urban geographical areas. A steady decline in surgical treatment was found over the whole period, with a noticeable decline from 2009 to 2013, possibly reflecting a rapid change in clinical practice following a range of high-quality randomized clinical trials (RCT). IV.

Efficacy of early controlled motion of the ankle compared with no motion after non-operative treatment of an acute Achilles tendon rupture: study protocol for a randomized controlled trial.

Author(s): Barfod, Kristoffer Weisskirchner; Hansen, Maria Swennergren; Holmich, Per; Troelsen, Anders; Kristensen, Morten Tange

Source: Trials; Nov 2016; vol. 17 (no. 1); p. 564

Publication Date: Nov 2016

Available in full text at Trials - from BioMed Central

Available in full text at Trials - from National Library of Medicine

Abstract: Early controlled ankle motion is widely used in the non-operative treatment of acute Achilles tendon rupture, though its safety and efficacy have never been investigated in a randomized setup. The objectives of this study are to investigate if early controlled motion of the ankle affects functional and patient-reported outcomes. The study is performed as a blinded, randomized, controlled trial with patients allocated in a 1:1 ratio to one of two parallel groups. Patients aged from 18 to 70 years are eligible for inclusion. The intervention group performs early controlled motion of the ankle in weeks 3-8 after rupture. The control group is immobilized. In total, 130 patients will be included from one big orthopedic center over a period of 2½ years. The primary outcome is the patient-reported Achilles tendon Total Rupture Score evaluated at 12 months post-injury. Secondary outcome measures are the heel-rise work test, Achilles tendon elongation, and the rate of re-rupture. The primary analysis will be conducted as intention-to-treat analyses. This trial is the first to investigate the safety and efficacy of early controlled motion in the treatment of acute Achilles tendon rupture in a randomized setup. The study uses the patient-reported outcome measure, the Achilles tendon Total Rupture Score, as the primary endpoint, as it is believed to be the best surrogate measure for the tendon's actual capability to function in everyday life. ClinicalTrials.gov: NCT02015364 . Registered on 13 December 2013.

Subcutaneous Achilles tendon rupture: A comparison between open technique and mini-invasive tenorrhaphy with Achillon(®) suture system.

Author(s): Daghino, W; Enrietti, E; Sprio, A E; di Prun, N Barbasetti; Berta, G N; Massè, A

Source: Injury; Nov 2016; vol. 47 (no. 11); p. 2591-2595

Publication Date: Nov 2016

Abstract: Surgical management of Achilles tendon rupture is still controversial: open techniques have a higher rate of soft tissue complications but a lower incidence of re-rupture than percutaneous tenorrhaphies. The aim of our retrospective study was to analyze and compare clinical and functional results in patients treated with either the conventional open or minimally invasive suture treatment with the Achillon(®) system. A retrospective review of 140 patients was performed; 72 were treated with open tenorrhaphy, 68 with the minimally invasive Achillon(®) suture system. With a comparable re-rupture rate, there was a statistically significant reduction in surgical time, incidence of minor complications, time required to return to sport activities and return to work in the minimally invasive group. Achillon(®) mini-invasive suture system is a reliable tool for the Achilles

tendon ruptures, able to reduce the incidence of soft tissues complications if compared to the classic open tenorrhaphy, while maintaining strength of the suture and leading to superimposed functional outcomes.

Is surgical intervention more effective than non-surgical treatment for acute Achilles tendon rupture? A systematic review of overlapping meta-analyses.

Author(s): Wu, Yaohong; Lin, Linghan; Li, Hao; Zhao, Yachao; Liu, Longgang; Jia, Zhiwei; Wang, Deli; He, Qing; Ruan, Dike

Source: International journal of surgery (London, England); Nov 2016; vol. 36 ; p. 305-311

Publication Date: Nov 2016

Abstract: There is discordance in the results from meta-analyses on surgical versus non-surgical treatment for acute Achilles tendon rupture. We systematically reviewed the overlapping meta-analyses on this topic to provide information that will be helpful to decision makers when selecting treatments based on the current best available evidence. We comprehensively searched multiple databases for systematic reviews that compared surgical and non-surgical treatments for acute Achilles tendon rupture. We only included meta-analyses that comprised randomized controlled trials (RCTs). The methodological quality and extracted data were assessed. The meta-analysis that offered the best evidence was ascertained with the Jadad decision algorithm. Nine meta-analyses were included in our study and all of them included RCTs with Level-II evidence. Assessment of Multiple Systematic Reviews (AMSTAR) scores ranged from 5 to 10 (median 7). The Jadad decision algorithm was used to select a high-quality meta-analysis with more RCTs. The results from this study showed that when functional rehabilitation was used, non-surgical intervention was similar to surgical treatment regarding the incidence of range of motion, rerupture, calf circumference and functional outcomes, and the incidence of other complications was reduced. Non-surgical intervention significantly increased the rerupture rate if functional rehabilitation was not considered. The findings of meta-analyses regarding surgical versus non-surgical treatment for acute Achilles tendon rupture are inconsistent. According to this systematic review of overlapping meta-analyses, the current best available evidence suggests that centers offering functional rehabilitation may prefer non-surgical intervention. Surgical treatment may be preferred at centers that do not have functional rehabilitation.

Anterior Cruciate Ligament Repair

Knee joint kinematics with dynamic augmentation of primary anterior cruciate ligament repair - a biomechanical study.

Author(s): Häberli, Janosch; Henle, Philipp; Acklin, Yves P; Zderic, Ivan; Gueorguiev, Boyko

Source: Journal of experimental orthopaedics; Dec 2016; vol. 3 (no. 1); p. 29

Publication Date: Dec 2016

Abstract: Dynamic augmentation of anterior cruciate ligament tears seems to reduce anteroposterior knee translation close to the pre-injury level. The aim of the present study is to biomechanically investigate the course of translation during a simulated early post-operative phase. It is hypothesized that anteroposterior translation is maintained at the immediate post-operative level over a simulated rehabilitation period of 50'000 gait cycles. Eight fresh-frozen human cadaveric knee joints from donors with a mean age of 35.5 (range 25-40) years were subjected to 50'000 cycles of 0°-70°-0° flexion-extension movements in a custom-made test setup. Anteroposterior translation was assessed with simulated Lachman/KT-1000 testing in 0°, 15°, 30°, 60° and 90° of flexion in knee joints treated with the novel technique initially and after 50'000 cycles testing. Statistical analysis was performed using the Wilcoxon Signed-Rank Test. The level of significance was set at $p = 0.05$. Anteroposterior translation changed non-significantly for all flexion angles between cycle 0 and

50'000 (p = 0.39 to p = 0.89), except for 30° flexion, where a significant increase by 1.4 mm was found (p = 0.03). Increase in anteroposterior translation of knees treated with this dynamic augmentation procedure is low. The procedure maintains translation close to the immediate post-operative level over a simulated rehabilitation period of 50'000 gait cycles and therefore supports anterior cruciate ligament repair during biological healing.

The Bridge-Enhanced Anterior Cruciate Ligament Repair (BEAR) Procedure: An Early Feasibility Cohort Study.

Author(s): Murray, Martha M; Flutie, Brett M; Kalish, Leslie A; Ecklund, Kirsten; Fleming, Braden C; Proffen, Benedikt L; Micheli, Lyle J

Source: Orthopaedic journal of sports medicine; Nov 2016; vol. 4 (no. 11); p. 2325967116672176

Publication Date: Nov 2016

Available in full text at Orthopaedic Journal of Sports Medicine - from Highwire Press

Abstract: This study assessed the safety of the newly developed bridge-enhanced anterior cruciate ligament (ACL) repair (BEAR), which involves suture repair of the ligament combined with a bioactive scaffold to bridge the gap between the torn ligament ends. As the intra-articular environment is complex in its response to implanted materials, this study was designed to determine whether there would be a significant rate of adverse reaction to the implanted scaffold. The primary hypothesis was that the implanted scaffold would not result in a deep joint infection (arthrocentesis with positive culture) or significant inflammation (clinical symptoms justifying arthrocentesis but negative culture). The secondary hypotheses were that patients treated with BEAR would have early postoperative outcomes that were similar to patients treated with ACL reconstruction with an autologous hamstring graft. Cohort study; Level of evidence, 2. A total of 20 patients were enrolled in this nonrandomized, first-in-human study. Ten patients received BEAR treatment and 10 received a hamstring autograft ACL reconstruction. The BEAR procedure was performed by augmenting a suture repair with a proprietary scaffold, the BEAR scaffold, placed in between the torn ends of the ACL at the time of suture repair. The BEAR scaffold is to our knowledge the only device that fills the gap between the torn ligament ends to have current Investigational Device Exemption approval from the Food and Drug Administration. Ten milliliters of autologous whole blood were added to the scaffold prior to wound closure. Outcomes were assessed at 3 months postoperatively. The outcomes measures included postoperative pain, muscle atrophy, loss of joint range of motion, and implant failure (designated by an International Knee Documentation Committee grade C or D Lachman test and/or an absence of continuous ACL tissue on magnetic resonance images). There were no joint infections or signs of significant inflammation in either group. There were no differences between groups in effusion or pain, and no failures by Lachman examination criteria (BEAR, 8 grade A and 2 grade B; ACL reconstruction, 10 grade A). Magnetic resonance images from all of the BEAR and ACL-reconstructed patients demonstrated a continuous ACL or intact graft. In addition, hamstring strength at 3 months was significantly better in the BEAR group than in the hamstring autograft group (mean ± SD: 77.9% ± 14.6% vs 55.9% ± 7.8% of the contralateral side; P < .001). The results of this study suggest that the BEAR procedure may have a rate of adverse reactions low enough to warrant a study of efficacy in a larger group of patients.

Arthroscopic anterior cruciate ligament repair for proximal anterior cruciate ligament tears in skeletally immature patients: Surgical technique and preliminary results.

Author(s): Bigoni, Marco; Gaddi, Diego; Gorla, Massimo; Munegato, Daniele; Pungitore, Marco; Piatti, Massimiliano; Turati, Marco

Source: The Knee; Nov 2016

Publication Date: Nov 2016

Abstract: Anterior cruciate ligament (ACL) tears in children are increasingly common and present difficult treatment decisions due to the risk of growth disturbance. Although open primary ACL

repair was abandoned in the historical literature, recent studies have suggested that there is a role for arthroscopic primary repair in patients with proximal tears. This is a retrospective review of five consecutive patients aged 9.2years (range 8 to 10) who underwent suture anchor ACL reinsertion. Patients were included if they were Tanner stages 1-2 and proximal ACL tears with adequate tissue quality confirmed arthroscopically. The time frame was 81days. Arthroscopic ACL reinsertion was performed with bioabsorbable suture anchor. Clinical evaluation, KT-1000™, and MRI were re-evaluated. Clinical outcomes were measured using International Knee Documentation Committee (IKDC), Lysholm and Tegner activity score. At a mean follow-up of 43.4months (range 25 to 56), no re-injury and leg length discrepancies were observed. Four patients had negative Lachman tests. The remainder had a grade 1 Lachman test. The mean side-to-side difference was 3 (2-4mm). In MRI obtained at the last follow-up, no articular lesions or growth arrest were observed and the reinserted ACL was recognized in every exam. All patients returned to previous level of activity and presented normal and nearly normal IKDC score. The mean Lysholm score was 93.6.
Arthroscopic ACL repair can achieve good short-term results with joint stability and recovery of sport activity in skeletally immature patients, with proximal ACL avulsion tear.

Shoulder Impingement and Dislocation

Functional outcome after primary hemiarthroplasty in three or four part proximal humerus fracture: A short term followup.

Author(s): Agarwal, Saurabh; Rana, Ashish; Sharma, Rajeev K

Source: Indian journal of orthopaedics; 2016; vol. 50 (no. 6); p. 590-594

Publication Date: 2016

Abstract: Several modalities of treatment are being used for the management of proximal humerus fractures. Primary hemiarthroplasty in proximal humerus fracture is indicated in three or four part fracture or fracture dislocations. It is also indicated if fracture involves a large area of articular cartilage loss and viability of head is doubtful. We studied the functional outcome of hemiarthroplasty in comminuted proximal humerus fracture. 29 patients of three or four part proximal humerus fractures, (according to Neer's classification) who underwent primary shoulder hemiarthroplasty were included in this retrospective study. 20 patients were of more than 55 years of age. Functional evaluation based on Constant score and radiological assessment by periodic X-rays were done. All patients were operated in a 'beach chair position'. The lesser and greater tuberosities were dissected with their tendinous attachments and were later reattached to the proximal humerus for stability of the prosthesis. Cemented prosthesis was used in all cases. Three patients died and two patients were lost to followup during the course of the study, so 24 patients were finally included in the study. Mean Constant score was 56.62 (range 42.5-65.5) after mean followup of 18.28 months (range 12-24 months). Mean anterior elevation was 118.2° (range 75°-150°) and mean active abduction was 102°(range 50°-135°). Nineteen patients (79.16%) were satisfied about their functional outcome. Proximal migration of tuberosity was present in four patients. These patients had decreased abduction with impingement. One patient had higher placement of prosthesis and one patient had radiolucency at bone cement interface. There were no heterotopic ossification, dislocation, superficial, or deep infection. This study showed that hemiarthroplasty in a grossly comminuted proximal humerus fracture is a viable alternative to osteosynthesis. Tuberosity healing plays a main role in good range of motion and better functional outcome after shoulder hemiarthroplasty.

Multi-modal imaging of the subscapularis muscle.

Author(s): Alilet, Mona; Behr, Julien; Nueffer, Jean-Philippe; Barbier-Brion, Benoit; Aubry, Sébastien

Source: Insights into imaging; Dec 2016; vol. 7 (no. 6); p. 779-791

Publication Date: Dec 2016

Abstract: The subscapularis (SSC) muscle is the most powerful of the rotator cuff muscles, and plays an important role in shoulder motion and stabilization. SSC tendon tear is quite uncommon, compared to the supraspinatus (SSP) tendon, and, most of the time, part of a large rupture of the rotator cuff. Various complementary imaging techniques can be used to obtain an accurate diagnosis of SSC tendon lesions, as well as their extension and muscular impact. Pre-operative diagnosis by imaging is a key issue, since a lesion of the SSC tendon impacts on treatment, surgical approach, and post-operative functional prognosis of rotator cuff injuries. Radiologists should be aware of the SSC anatomy, variability in radiological presentation of muscle or tendon injury, and particular mechanisms that may lead to a SSC injury, such as coracoid impingement. • Isolated subscapularis (SSC) tendon tears are uncommon. • Classically, partial thickness SSC tendon tears start superomedially and progress inferolaterally. • Long head of biceps tendon medial dislocation can indirectly signify SSC tendon tears. • SSC tendon injury is associated with anterior shoulder instability. • Dynamic ultrasound study of the SSC helps to diagnose coracoid impingement.

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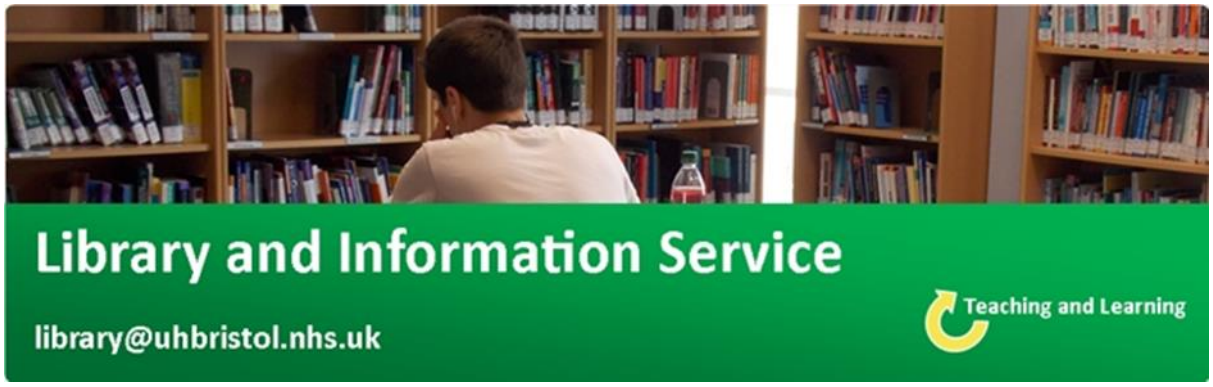

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