

2. LBP

Quality of care with ex

Physiother Theory Pract. 2017 Nov 7:1-13. doi: 10.1080/09593985.2017.1394410.

Effect of physical therapy management of nonspecific low back pain with exercise addiction behaviors: A case series.

Anandkumar S¹, Manivasagam M², Kee VTS², Meyding-Lamade U³.

This case series describes two patients, aged 35 and 45 years, respectively, who presented with chronic nonspecific low back pain (NSLBP) having exercise addiction (EA) behaviors. Diagnosis of EA was based on clinical findings, exercising patterns and withdrawal symptoms along with high scores in the EA inventory.

This report is a potential first-time description of the successful physical therapy management of NSLBP associated with EA utilizing pain neuroscience education (with individualized curriculum), mindfulness, breathing, quota-based reduction in exercises and modification of exercises into social participation, pleasure activities and hobbies. Both the patients were seen once a week, for 8 weeks. At discharge, they were pain-free and fully functional, which was maintained at a six-month follow-up.

PT helps

Spine (Phila Pa 1976). 2017 Nov 1;42(21):E1215-E1224. doi: 10.1097/BRS.0000000000002148.

Who Benefits Most From Individualized Physiotherapy or Advice for Low Back Disorders? A Preplanned Effect Modifier Analysis of a Randomized Controlled Trial.

Hahne AJ¹, Ford JJ, Richards MC, Surkitt LD, Chan AYP, Slater SL, Taylor NF.
Author information

Abstract***STUDY DESIGN:***

A preplanned effect modifier analysis of the Specific Treatment of Problems of the Spine randomized controlled trial.

OBJECTIVE:

To identify characteristics associated with larger or smaller treatment effects in people with low back disorders undergoing either individualized physical therapy or guideline-based advice.

SUMMARY OF BACKGROUND DATA:

Identifying subgroups of people who attain a larger or smaller benefit from particular treatments has been identified as a high research priority for low back disorders.

METHODS:

The trial involved 300 participants with low back pain and/or referred leg pain (≥ 6 wk, ≤ 6 mo duration), who satisfied criteria to be classified into five subgroups (with 228 participants classified into three subgroups relating to disc-related disorders, and 64 classified into the zygapophyseal joint dysfunction subgroup). Participants were randomly allocated to receive either two sessions of guideline based advice (n=144), or 10 sessions of individualized physical therapy targeting pathoanatomical, psychosocial, and neurophysiological factors (n=156). Univariate and multivariate linear mixed models determined the interaction between treatment group and potential effect modifiers (defined a priori) for the primary outcomes of back pain, leg pain (0-10 Numeric Rating Scale) and activity limitation (Oswestry Disability Index) over a 52-week follow-up.

RESULTS:

Participants with higher levels of back pain, higher Örebro scores (indicative of higher risk of persistent pain) or longer duration of symptoms derived the largest benefits from individualized physical therapy relative to advice. Poorer coping also predicted larger benefits from individualized physical therapy in the univariate analysis.

CONCLUSION:

These findings suggest that people with low back disorders could be preferentially targeted for individualized physical therapy rather than advice if they have higher back pain levels, longer duration of symptoms, or higher Örebro scores.

3. DISC

MRI disc degeneration

Is it appropriate to measure age-related lumbar disc degeneration on the mid-sagittal MR image? A quantitative image study

European Spine Journal | November 21, 2017
Hu X, et al.

Researchers here aimed at determining the appropriateness of using the mid-sagittal magnetic resonance images (MRI) to measure various phenotypes of age-related disc degeneration. They observed that disc signal measurements acquired on the mid-sagittal MRI were reliable and had strong associations with age and thus can be used as an appropriate measure of disc degeneration.

They suggested measuring disc bulging on para-sagittal MRIs as superior. Although severe disc narrowing clearly was a sign of severe disc degeneration, disc height seemed to have no linear association with age.

5. SURGERY

Spinal stenosis

Clin Spine Surg. 2017 Jan 4. doi: 10.1097/BSD.0000000000000469.

The Influence of Single-level Versus Multilevel Decompression on the Outcome in Multisegmental Lumbar Spinal Stenosis: Analysis of the Lumbar Spinal Outcome Study (LSOS) Data.

Ulrich NH¹, Burgstaller JM, Held U, Winklhofer S, Farshad M, Pichierri G, Steurer J, Porchet F; LSOS Study Group.

Author information

Abstract

STUDY DESIGN:

This is prospective multicenter cohort study.

OBJECTIVE:

To assess whether patients with confirmed multisegmental lumbar spinal stenosis benefit more from a single-level or a multilevel decompression.

SUMMARY OF BACKGROUND DATA:

In multisegmental lumbar spinal stenotic cases, the decision as to how many levels of stenosis need to be operated to achieve the best possible clinical outcome is still unknown and remains a controversy between spine surgeons.

MATERIALS AND METHODS:

Patients of the Swiss Lumbar Stenosis Outcome Study (LSOS) with confirmed multisegmental LSS undergoing first-time decompression without fusion were enrolled in this study. The main outcomes of this study were Spinal Stenosis Measure (SSM) symptoms and function over time, measured at baseline, 6, 12, and 24 months follow-up. Further outcomes of interest were changes in SSM, numeric rating scale, feeling thermometer, the EQ-5D-EL, and the Roland and Morris disability questionnaire from baseline to 6, 12, and 24 months.

RESULTS:

After 12 months, a total of 141 patients met the inclusion criteria; of these, 33 (23%) underwent a single-level and 108 (77%) a multilevel decompression. Multilevel decompression was associated with a significantly less favorable SSM symptoms and function score, respectively, as compared with single-level decompression. In all further outcomes of interest single-level as well as multilevel patients improved over time.

CONCLUSIONS:

Our study showed that in multisegmental stenotic cases a single-level decompression was associated with a significantly more favorable SSM symptoms and function score, respectively, as compared with multilevel decompression. This study provides evidence that in multisegmental stenotic cases a single-level decompression might be sufficient to improve patient's symptoms and function.

7. PELVIC ORGANS/WOMAN'S HEALTH

Tarlov Cyst

Effectiveness of Surgical Treatment for Tarlov Cysts: A Systematic Review of Published Literature.

Dowsett LE, et al. Clin Spine Surg. 2017.

In the general population, it has been estimated that 1.5% of people have ≥ 1 Tarlov cysts, with about 13% of those being symptomatic. Despite a range of options for treatment, there is debate about when, and how to optimally treat individuals with Tarlov cysts among clinicians, and among policy decision makers.

RESULTS: In total, 31 studies were included in this systematic review; all were case series. Among the 646 participants included in these 31 studies, 210 experienced complete resolution of symptoms (32%), 327 had partial resolution (50%), 106 did not have any improvement or worsening of symptoms (16%), and 3 had their symptoms worsen after surgery (0.4%). A number of adverse events were reported after surgery; however, all were temporary. The analysis of 49 patients with data on cyst size resulted in the odds of complete resolution of symptoms being lower for patients with larger cysts (odds ratio=0.53, P-value=0.107) although this finding is not statistically significant. For those with a cyst >1.5 cm the odds of complete resolution were (odds ratio=0.36, P-value=0.190) compared with those with a cyst <1.5 cm.

8. VISCERA

Alzheimer's disease and glucose regulation

Alzheimers Dement. 2017 Oct 19. pii: S1552-5260(17)33765-2. doi: 10.1016/j.jalz.2017.09.011.

Evidence for brain glucose dysregulation in Alzheimer's disease.

An Y¹, Varma VR², Varma S³, Casanova R⁴, Dammer E⁵, Pletnikova O⁶, Chia CW⁷, Egan JM⁸, Ferrucci L⁹, Troncoso J¹⁰, Levey AI¹¹, Lah J¹¹, Seyfried NT⁵, Legido-Quigley C¹², O'Brien R¹³, Thambisetty M¹⁴.

Author information

Abstract

INTRODUCTION:

It is unclear whether abnormalities in brain glucose homeostasis are associated with Alzheimer's disease (AD) pathogenesis.

METHODS:

Within the autopsy cohort of the Baltimore Longitudinal Study of Aging, we measured brain glucose concentration and assessed the ratios of the glycolytic amino acids, serine, glycine, and alanine to glucose. We also quantified protein levels of the neuronal (GLUT3) and astrocytic (GLUT1) glucose transporters. Finally, we assessed the relationships between plasma glucose measured before death and brain tissue glucose.

RESULTS:

Higher brain tissue glucose concentration, reduced glycolytic flux, and lower GLUT3 are related to severity of AD pathology and the expression of AD symptoms. Longitudinal increases in fasting plasma glucose levels are associated with higher brain tissue glucose concentrations.

DISCUSSION:

Impaired glucose metabolism due to reduced glycolytic flux may be intrinsic to AD pathogenesis. Abnormalities in brain glucose homeostasis may begin several years before the onset of clinical symptoms.

Environmental triggers for IBS

Curr Gastroenterol Rep. 2013 Jan; 15(1): 302. doi: 10.1007/s11894-012-0302-4
PMCID: PMC3537164 NIHMSID: NIHMS430310

Environmental Triggers for Inflammatory Bowel Disease

Ashwin N. Ananthakrishnan

Inflammatory bowel diseases [IBD; Crohn's disease (CD), ulcerative colitis (UC)] are chronic immunologically mediated diseases that are due to a dysregulated immune response to intestinal flora in a genetically susceptible host. Despite advances in genetics, the likelihood of occurrence of disease remains incompletely explained and there appears to be a strong role for the environment in mediating risk of disease. Smoking remains the most widely studied and replicated risk factor, contributing to increased risk and severity of CD while conferring protection against UC. Recent data has suggested novel risk factors. Lower plasma vitamin D is associated with an increased risk of Crohn's disease, and vitamin D supplementation may prevent relapse of disease. Several medications including oral contraceptives, post-menopausal hormone replacement, aspirin, NSAIDs, and antibiotics may increase risk of CD or UC with the mechanisms of effect remaining inadequately defined. There is continuing evidence that depression and psychosocial stress may play a role in the pathogenesis of both CD and UC, while at the same time also increasing risk for disease flares. There is also a growing understanding of the role of diet on IBD, in particular through its effect on the microbiome. Animal protein intake and n-6 fatty acids may increase risk of UC while n-3 fatty acids and dietary fiber may confer protection. The effect of diet on established disease remains poorly studied. There is need for routine measurement of a spectrum of environmental exposures in prospective studies to further our understanding.

Keywords: Crohn's disease, Ulcerative colitis, Environment, Smoking, Diet, Vitamin D

GERD decreased with diaphragmatic breathing

Clin Gastroenterol Hepatol. 2017 Nov 2. pii: S1542-3565(17)31307-1. doi: 10.1016/j.cgh.2017.10.038.

Diaphragmatic Breathing Reduces Belching and Proton Pump Inhibitor Refractory Gastroesophageal Reflux Symptoms.

Ong AM¹, Chua LT², Khor CJ³, Asokkumar R³, Namasivayam V³, Wang YT³.

[Author information](#)

Abstract**BACKGROUND & AIMS:**

In patients with gastroesophageal reflux disease (GERD) and excessive belching, most belches are supragastric, and can induce reflux episodes and worsen GERD. Supragastric belching (SGB) might be reduced with diaphragmatic breathing exercises. We investigated whether diaphragmatic breathing therapy is effective in reducing belching and proton pump inhibitor (PPI) refractory gastroesophageal reflux symptoms.

METHODS:

We performed a prospective study of 36 consecutive patients with GERD refractory to PPI therapy and a belching visual analogue scale (VAS) score of 6 or more, seen at a gastroenterology clinic at a tertiary hospital in Singapore from April 2015 through October 2016. Patients underwent high-resolution manometry and 24 hr pH-impedance studies while they were off PPIs. Fifteen patients were placed on a standardized diaphragmatic breathing exercise protocol (treatment group) and completed questionnaires at baseline, after diaphragmatic breathing therapy, and 4 months after the therapy ended. Twenty-one patients were placed on a waitlist (controls), completed the same questionnaires with an additional questionnaire after their waitlist period, and eventually received diaphragmatic breathing therapy. The primary outcome was reduction in belching VAS by 50% or more after treatment. Secondary outcomes included GERD symptoms (evaluated using the reflux disease questionnaire) and quality of life (QoL) scores, determined from the reflux qual short-form and EuroQoL-VAS (EQ-VAS).

RESULTS:

Nine of the 15 patients in the treatment group (60%) and none of the 21 controls achieved the primary outcome ($P < .001$). In the treatment group, the mean belching VAS score decreased from 7.1 ± 1.5 at baseline to 3.5 ± 2.0 after diaphragmatic breathing therapy; in the control group, the mean VAS score was 7.6 ± 1.1 at baseline and 7.4 ± 1.3 after the waitlist period. Eighty percent of patients in the treatment group significantly reduced belching frequency compared to 19% in controls ($P = .001$). Treatment significantly reduced symptoms of GERD (the mean reflux disease questionnaire score increased by 12.2 in the treatment group and 3.1 in the control group; $P = .01$). The treatment significantly increased QoL scores (the mean reflux qual short-form score increased by 15.4 in the treatment group and 5.2 in the control group, $P = 0.04$) and mean EQ-VAS scores (15.7 increase in treatment group and 2.4 decrease in the control group). These changes were sustained at 4 months after treatment. In the end, 20 of the 36 patients who received diaphragmatic breathing therapy (55.6%), all with excessive SGB, achieved the primary outcome.

CONCLUSION:

In a prospective study, we found a standardized protocol for diaphragmatic breathing to reduce belching and PPI-refractory gastroesophageal reflux symptoms, and increase QoL in patients with PPI-refractory GERD with belching-especially those with excessive SGB.

LOW FODMAP diet helps IBS

J Gastroenterol Hepatol. 2017 Nov 20. doi: 10.1111/jgh.14051.

Low FODMAPs diet vs. general dietary advice improves clinical response in patients with diarrhea-predominant irritable bowel syndrome: a randomized controlled trial.

Zahedi MJ¹, Behrouz V¹, Azimi M¹.

Author information

Abstract**BACKGROUND AND AIMS:**

Recent evidence indicates that new approach of the diet with low Fermentable Oligo-Di-Mono-saccharides and polyols (FODMAPs) may has an effective role in management of the patients with irritable bowel syndrome (IBS). We compared the results of low FODMAP diet vs. current dietary treatment, general dietary advices (GDA), on the clinical response in patients with diarrhea subtype of IBS (IBS-D).

METHODS:

In this randomized, controlled, single-blind trial, we included 110 patients with IBS-D in 2 intervention groups. Participants were randomly assigned to the low FODMAP diet (n=55) and GDA (n=55) for 6 weeks after a 10-days screening period. Gastrointestinal symptoms and bowel habit status were evaluated using a symptom severity scoring system (IBS-SSS) and Bristol stool form scale (BSFS) pre and post intervention. Patients completed 3-days food diary before and after the intervention.

RESULTS:

101 of 110 patients completed the dietary interventions. At the baseline, the nutrient intake, severity of symptoms and demographic data was similar between two groups. After 6 weeks, the low FODMAP diet improves significantly overall gastrointestinal symptoms scores, stool frequency and consistency vs. GDA group ($P<0.001$, $P<0.001$ and $P=0.003$, respectively). Compared with the baseline, both intervention groups expressed a significant reduction in overall scores of IBS-SSS, abdominal pain, distension, consistency and frequency, but this reduction is greater in low FODMAP diet group.

CONCLUSIONS:

Both low FODMAP diet and GDA in patients with IBS-D led to adequate improvement of gastrointestinal symptoms for 6 weeks. However, the low FODMAP diet has greater benefits in IBS improvement.

12 B. CERVICAL SURGERIES**PT post care**

J Neurosurg Spine. 2017 Nov 3:1-9. doi: 10.3171/2017.5.SPINE16736.

Structured postoperative physiotherapy in patients with cervical radiculopathy: 6-month outcomes of a randomized clinical trial.

Wibault J¹, Öberg B¹, Dederig Å^{2,3}, Löfgren H⁴, Zsigmond P⁵, Peolsson A¹.
Author information

Abstract

OBJECTIVE Structured physiotherapy has been suggested as treatment before as well as after surgery to improve clinical outcomes in patients with cervical radiculopathy (CR), but randomized clinical trials to inform evidence-based clinical guidelines for the treatment of patients with CR after surgery are lacking. The aim of this study was to compare the results of structured postoperative physiotherapy combining neck-specific exercises with a behavioral approach to a standard postoperative approach in patients who had undergone surgery for cervical disc disease with CR at 6 months after surgery.

METHODS Patients with cervical disc disease and persistent CR who were scheduled for surgery were randomized preoperatively to structured postoperative physiotherapy (n = 101) or a standard postoperative approach (n = 100). The latter included pragmatic physiotherapy in accordance with the usual Swedish postoperative care. Outcome measures included patient-reported neck disability as measured with the Neck Disability Index (NDI), intensity and frequency of neck and arm pain, global outcome of treatment, and expectation fulfillment, as well as enablement.

RESULTS Patients who received structured postoperative physiotherapy reported greater expectation fulfillment (p = 0.01), and those who attended at least 50% of the treatment sessions reported less neck pain frequency (p = 0.05), greater expectation fulfillment (p = 0.001), and greater enablement (p = 0.04) compared with patients who received the standard postoperative approach. No other difference between treatment groups was found (p > 0.15). The NDI and neck and arm pain intensity were improved in both groups at 6 months after surgery (p < 0.001). Additional use of postoperative physiotherapy was reported by 61% of the patients who received the standard postoperative approach.

CONCLUSIONS The results from this first randomized clinical trial of postoperative physiotherapy showed only minor additional benefit of structured postoperative physiotherapy compared with standard postoperative approach 6 months postoperatively in patients who underwent surgery for cervical disc disease with CR. Patients who received structured postoperative physiotherapy reported higher expectation fulfillment, and many patients in the standard postoperative approach group perceived a need for additional treatments after surgery, suggesting that patients with CR are in need of further postoperative support. The results confirm that neck-specific exercises are tolerated postoperatively by patients with CR, but more studies of postoperative physiotherapy are needed to inform clinical guidelines for this patient group. Clinical trial registration no.: [NCT01547611](https://clinicaltrials.gov/ct2/show/study/NCT01547611) (clinicaltrials.gov).

13 C. AIRWAYS/SWALLOWING/SPEECH**Sleep apnea and NASH**

Eur J Gastroenterol Hepatol. 2017 Dec;29(12):1380-1384. doi: 10.1097/MEG.0000000000000973.

The association of nonalcoholic steatohepatitis and obstructive sleep apnea.

Asfari MM¹, Niyazi F, Lopez R, Dasarathy S, McCullough AJ.
Author information

Abstract

BACKGROUND AND AIM:

The association between obstructive sleep apnea (OSA) and abnormal liver enzymes has been reported in multiple studies. The existing literature regarding the relationship between OSA and nonalcoholic steatohepatitis (NASH) is conflicting. Thus we aimed to determine the relationship between OSA and NASH from a large database.

PATIENTS AND METHODS:

A cross-sectional study was performed using the 2012 Nationwide Inpatient Sample. We identified adult patients (18-90 years) who had a diagnosis of OSA using the International Classification of Diseases 9th version codes. The control group was comprised of adult individuals with no discharge records of OSA. NASH diagnosis was also identified using the International Classification of Diseases 9th version codes. The association between OSA and NASH was calculated using univariable and multivariable logistic regression.

RESULTS:

A total of 30 712 524 hospitalizations were included. The OSA group included 1 490 150 patients versus 29 222 374 in the control non-OSA group. The OSA group average age was 61.8±0.07 years (44.2% females) compared with 57.0±0.11 years (60.1% females) in the non-OSA group. NASH prevalence was significantly higher in the OSA group compared with the non-OSA group [2% (95% confidence interval (CI): 1.9, 2.1) vs. 0.65% (95% CI: 0.63, 0.66), P<0.001]. After adjusting for obesity, diabetes, hypertension, dyslipidemia, the metabolic syndrome and Charlson comorbidity index, OSA patients were three times more likely to have NASH [adjusted odds ratio: 3.1 (95% CI: 3.0-3.3), P<0.001].

CONCLUSION:

Patients with OSA are three times more likely to have NASH compared with patients without OSA after controlling for other confounders. These data indicate that OSA should be considered as an independent risk factor for developing NASH.

14. HEADACHES

High intensity ex helps HA's

Scand J Med Sci Sports. 2017 Nov 21. doi: 10.1111/sms.13023.

Effects of different endurance exercise modalities on migraine days and cerebrovascular health in episodic migraineurs: A randomized controlled trial.

Hanssen H¹, Minghetti A¹, Magon S^{2,3}, Rossmeyssl A¹, Rasenack M², Papadopoulou A^{2,3}, Klenk C¹, Faude O¹, Zahner L¹, Sprenger T^{2,4}, Donath L¹.

Author information

Abstract

BACKGROUND:

Aerobic exercise training is a promising complementary treatment option in migraine and can reduce migraine days and improve retinal microvascular function. Our aim was to elucidate whether different aerobic exercise programs at high vs. moderate intensities distinctly affect migraine days as primary outcome and retinal vessel parameters as a secondary.

METHODS:

In this randomized controlled trial, migraine days were recorded by a validated migraine diary in 45 migraineurs of which 36 (female: 28; age: 36 (SD:10)/ BMI: 23.1 (5.3) completed the training period (dropout: 20%). Participants were assigned (Strata: age, gender, fitness and migraine symptomatology) to either high intensity interval training (HIT), moderate continuous training (MCT) or a control group (CON). Intervention groups trained twice a week over a 12-week intervention period. Static retinal vessel analysis, central retinal arteriolar (CRAE) and venular (CRVE) diameters as well as the arteriolar-to-venular diameter ratio (AVR) were obtained for cerebrovascular health assessment. Incremental treadmill testing yielded maximal and submaximal fitness parameters.

RESULTS:

Overall, moderate migraine day reductions were observed ($\eta_p^2=0.12$): HIT revealed 89% likely beneficial effects (SMD=1.05) compared to MCT (SMD=0.50) and CON (SMD=0.59). Very large intervention effects on AVR improvement ($\eta_p^2=0.27$), slightly favoring HIT (SMD=-0.43) over CON (SMD=0) were observed.

CONCLUSIONS:

HIT seems more effective for migraine day reduction and improvement of cerebrovascular health compared to MCT. Intermittent exercise programs of higher intensities may need to be considered as an additional treatment option in migraine patients. This article is protected by copyright. All rights reserved.

16. CONCUSSIONS

Protocol

Clin J Sport Med. 2017 Oct 25. doi: 10.1097/JSM.0000000000000530.

Patient, Injury, Assessment, and Treatment Characteristics and Return-to-Play Timelines After Sport-Related Concussion: An Investigation from the Athletic Training Practice-Based Research Network.

Valovich McLeod TC¹, Kostishak N Jr, Anderson BE, Welch Bacon CE, Lam KC.
Author information

Abstract

OBJECTIVE:

To describe the patient, injury, assessment and treatment characteristics, as well as return-to-play timelines and clinical findings at discharge for adolescent patients after sport-related concussion.

DESIGN:

Retrospective analysis of electronic medical records.

SETTING:

Athletic training facilities of secondary school members of the Athletic Training Practice-Based Research Network (AT-PBRN).

PATIENTS:

In total, 1886 patient records were reviewed. [1204 (63.8%) male, 682 (36.2%) female, age = 15.3 ± 1.9 years, height = 169.5 ± 13.5 cm, mass = 70.3 ± 17.0 kg]. Patients were diagnosed with a concussion by an athletic trainer or team/directing physician.

INTERVENTIONS:

None.

MAIN OUTCOME MEASURES:

Descriptive analysis of patient, injury, assessment, treatment, and participation status characteristics, as well as discharge information.

RESULTS:

Injury demographic forms were completed for 1886 concussion cases. A concussion-specific evaluation form was completed for 55.9% ($n = 1054$) of cases. Treatment documentation was completed on 829 patients (44.0% of initial documented cases). Discharge forms were completed for 750 patients (40.0% of initial documented cases). Most cases were coded as 850.9-Concussion (85.5%, $n = 642$) and occurred during an in-season game (49.4%, $n = 308$). Time lost from competition was 24.9 ± 39.9 days.

CONCLUSIONS:

Most concussion cases documented in this study were not on-field emergencies, as indicated by their normal clinical examinations and the lack of immediate referral to an emergency department. However, certain aspects of the clinical examination were often not assessed during the initial evaluation. These findings describe concussion assessment and recovery in adolescents and reinforce the need for a standardized approach to concussion assessment and appropriate documentation.

20 B. LABRUM**SLAP surgery**

Br J Sports Med. 2017 Dec;51(24):1759-1766. doi: 10.1136/bjsports-2016-097098. Epub 2017 May 11.

Sham surgery versus labral repair or biceps tenodesis for type II SLAP lesions of the shoulder: a three-armed randomised clinical trial.

Schröder CP¹, Skare Ø¹, Reikerås O^{2,3}, Mowinckel P², Brox JI^{2,3}.

[Author information](#)

Abstract**BACKGROUND:**

Labral repair and biceps tenodesis are routine operations for superior labrum anterior posterior (SLAP) lesion of the shoulder, but evidence of their efficacy is lacking. We evaluated the effect of labral repair, biceps tenodesis and sham surgery on SLAP lesions.

METHODS:

A double-blind, sham-controlled trial was conducted with 118 surgical candidates (mean age 40 years), with patient history, clinical symptoms and MRI arthrography indicating an isolated type II SLAP lesion. Patients were randomly assigned to either labral repair (n=40), biceps tenodesis (n=39) or sham surgery (n=39) if arthroscopy revealed an isolated SLAP II lesion. Primary outcomes at 6 and 24 months were clinical Rowe score ranging from 0 to 100 (best possible) and Western Ontario Shoulder Instability Index (WOSI) ranging from 0 (best possible) to 2100. Secondary outcomes were Oxford Instability Shoulder Score, change in main symptoms, EuroQol (EQ-5D and EQ-VAS), patient satisfaction and complications.

RESULTS:

There were no significant between-group differences at any follow-up in any outcome. Between-group differences in Rowe scores at 2 years were: biceps tenodesis versus labral repair: 1.0 (95% CI -5.4 to 7.4), p=0.76; biceps tenodesis versus sham surgery: 1.6 (95% CI -5.0 to 8.1), p=0.64; and labral repair versus sham surgery: 0.6 (95% CI -5.9 to 7.0), p=0.86. Similar results-no differences between groups-were found for WOSI scores. Postoperative stiffness occurred in five patients after labral repair and in four patients after tenodesis.

CONCLUSION:

Neither labral repair nor biceps tenodesis had any significant clinical benefit over sham surgery for patients with SLAP II lesions in the population studied.

25. WRIST AND HAND**GMI help pain in post radial fx**

J Hand Ther. 2017 Nov 6. pii: S0894-1130(17)30101-1. doi: 10.1016/j.jht.2017.09.004.

Effectiveness of the graded motor imagery to improve hand function in patients with distal radius fracture: A randomized controlled trial.

Dilek B¹, Ayhan C², Yagci G², Yakut Y³.

Author information

Abstract***STUDY DESIGN:***

Single-blinded randomized controlled trial.

INTRODUCTION:

Pain management is essential in the early stages of the rehabilitation of distal radius fractures (DRFx). Pain intensity at the acute stage is considered important for determining the individual recovery process, given that higher pain intensity and persistent pain duration negatively affect the function and cortical activity of pain response. Graded motor imagery (GMI) and its components are recent pain management strategies, established on a neuroscience basis.

PURPOSE OF THE STUDY:

To investigate the effectiveness of GMI in hand function in patients with DRFx.

METHODS:

Thirty-six participants were randomly allocated to either GMI (n = 17; 52.59 [9.8] years) or control (n = 19; 47.16 [10.5] years) groups. The GMI group received imagery treatment in addition to traditional rehabilitation, and the control group received traditional rehabilitation for 8 weeks. The assessments included pain at rest and during activity using the visual analog scale, wrist and forearm active range of motion (ROM) with universal goniometer, grip strength with the hydraulic dynamometer (Jamar; Bolingbrook, IL), and upper extremity functional status using the Disability of the Arm, Shoulder and Hand Questionnaire, and the Michigan Hand Questionnaire. Assessments were performed twice at baseline and at the end of the eighth week.

RESULTS:

The GMI group showed greater improvement in pain intensity (during rest, 2.24; activity, 6.18 points), wrist ROM (flexion, -40.59; extension, -45.59; radial deviation, -25.59; and ulnar deviation, -26.77 points) and forearm ROM (supination, -43.82 points), and functional status (Disability of the Arm, Shoulder and Hand Questionnaire, 38.00; Michigan Hand Questionnaire, -32.53 points) when compared with the control group (for all, P < .05).

CONCLUSION:

The cortical model of pathological pain suggests new strategies established on a neuroscience basis. These strategies aim to normalize the cortical proprioceptive representation and reduce pain. One of these recent strategies, GMI appears to provide beneficial effects to control pain, improve grip strength, and increase upper extremity functions in patients with DRFx.

30 A. IMPINGEMENT**FAI changes**

Arthritis Care Res (Hoboken). 2017 Nov 7. doi: 10.1002/acr.23463.

The association of femoroacetabular impingement and delayed gadolinium enhanced mri of cartilage (dgemric): a population-based study.

Guo Y¹, Zhang H², Qian H³, Wilson DR², Wong H⁴, Barber M⁵, Forster BB⁶, Esdaile J⁷, Cibere J⁸; IMPAKT-HiP Team.

Author information

Abstract**OBJECTIVE:**

1) To assess the association of FAI and dGEMRIC T1 relaxation values (RV). 2) To evaluate whether subtypes of FAI (cam, pincer, mixed) are associated with region-specific dGEMRIC T1 RVs.

METHODS:

A population-based sample of Caucasian subjects with and without hip pain, aged 20-49, was selected through random digit dialing. A sample of 128 subjects underwent hip joint 3T dGEMRIC scans. Radiographic cam FAI was defined as an alpha angle $>55^\circ$, while pincer FAI was defined by a lateral center edge angle $>40^\circ$ or a positive cross-over sign. Mixed impingement was defined by the presence of both cam and pincer impingement. Overall and region-specific T1 RVs were compared between all FAI subtypes using weighted linear regression analysis to account for sampling design of the study.

RESULTS:

Subjects had mean age of 38 years and 51% were female. We did not find an association of FAI with overall hip T1 RV (mean difference = -15.5, 95% CI -77.23, 47.14). Significant associations of cartilage degeneration in anterior superior and central superior regions were found in subjects with mixed FAI compared to other FAI subtypes and non-FAI subjects.

CONCLUSION:

Subjects with mixed FAI had reduced T1 RVs compared other FAI subtypes. No substantial cartilage degeneration was found in pure cam or pincer FAI compared to non-FAI hips. These results indicate that the presence of cam or pincer impingements alone does not suggest the beginning of cartilage degeneration. In contrast, the presence of both FAI subtypes is a risk factor for early cartilage damage. This article is protected by copyright. All rights reserved.

32 A. KNEE/ACL**Categories of ACL recovery**

J Orthop Sports Phys Ther. 2017 Nov;47(11):834-844. doi: 10.2519/jospt.2017.7048. Epub 2017 Oct 9.

Influence of Demographics and Utilization of Physical Therapy Interventions on Clinical Outcomes and Revision Rates Following Anterior Cruciate Ligament Reconstruction.

Miller CJ, Christensen JC, Burns RD.

Abstract

Study Design Retrospective cohort from the Intermountain Healthcare system, January 2007 to December 2014.

Background Recent evolutions in health care delivery are putting physical therapists in the forefront to be more responsible for providing high-quality rehabilitation care in a more cost-effective manner. Studies investigating the association between physical therapy visit utilization and outcomes in vulnerable patient populations following anterior cruciate ligament (ACL) reconstruction may provide useful insights.

Objectives To examine the relationship between patient age, sex, physical therapy visit utilization, and physical therapy intervention charges with revision rates and patient-reported outcomes in individuals following primary ACL reconstruction.

Methods A sample of 660 patients who had an ACL reconstruction was identified through an electronic medical record database. Age and physical therapy visit utilization were categorized to examine effects between groups (20 years of age or younger, 21 to 34 years of age, 35 years of age or older; fewer than 9 visits, 9 to 14 visits, 15 or more visits). Multilevel mixed-effects linear models were conducted to compare differences between revision rates and patient-reported outcomes during the episode of care. Receiver operating characteristic curve analyses were also used to determine visit-number and charge-per-visit cut points to discriminate patients who achieved at least a minimal clinically important difference on the patient-reported outcomes.

Results Of 660 patients, 22 (3.3%) had revision surgery. Compared with patients 20 years and younger, the incidence rate ratio of ACL reconstruction revision was lower in patients who were 35 years and older (85%) and 21 to 34 years (59%). Of 470 patients who attended physical therapy for longer than 3 months, change in Knee Outcome Survey activities of daily living subscale score was significantly lower among patients 20 years of age and younger and in the lowest visit category.

Conclusion Achievement of favorable outcomes following ACL reconstruction may require categorization of patients beyond surgical diagnosis alone. Younger patients (aged 20 years or less) attending fewer physical therapy visits (fewer than 9) were more likely to have ACL revision surgery and had inferior patient-reported outcomes compared to older patients and those with higher physical therapy visit utilization. The study design of a retrospective cohort limits the ability to identify causal relationships. Additionally, this study was conducted in only 1 geographic region within a single health care delivery system, which may limit the generalizability of the results. Level of Evidence Prognosis, level 2c. J Orthop Sports Phys Ther 2017;47(11):834-844. Epub 9 Oct 2017. doi:10.2519/jospt.2017.7048.

34. PATELLA**MWM for PFP****Comparison of short-term effects of mobilization with movement and Kinesiotaping on pain, function and balance in patellofemoral pain**

SerdarDemirci^aGizem IremKinikli^aMichael J.Callaghan^bVolga BayrakciTunay^a

Objective

The aim of this study was to compare the short-term effects of Mobilization with movement (MWM) and Kinesiotaping (KT) on patients with patellofemoral pain (PFP) respect to pain, function and balance.

Methods

Thirty-five female patients diagnosed with unilateral PFP were assigned into 2 groups. The first group (n = 18) received two techniques of MWM intervention (Straight Leg-Raise with Traction and Tibial Gliding) while KT was applied to the other group (n = 17). Both groups received 4 sessions of treatment twice a week for a period of 2 weeks with a 6-week-home exercise program. Pain severity, knee range of motion, hamstring flexibility, and physical performance (10-step stair climbing test, timed up and go test), Kujala Patellofemoral Pain Scoring and Y-Balance test were assessed. These outcomes were evaluated before the treatment, 45 min after the initial treatment, at the end of the 4-session-treatment during 2-week period and 6 weeks later in both groups.

Results

Both treatment groups had statistically significant improvements on pain, function and balance ($p < 0.05$). Pain at rest ($p = 0.008$) and the hamstring muscle flexibility ($p = 0.027$) were demonstrated significant improvements in favor of MWM group.

Conclusions

Our results demonstrated similar results for both treatment techniques in terms of pain, function and balance. The MWM technique with exercise had a short-term favorable effect on pain at rest and hamstring muscle flexibility than the KT technique with exercise in patients with PFP.

Hip strengthening helps

J Orthop Sports Phys Ther. 2017 Oct 15:1-35. doi: 10.2519/jospt.2018.7365.

Hip and Knee Strengthening is More Effective Than Knee Strengthening Alone for Reducing Pain and Improving Activity in Individuals With Patellofemoral Pain: A Systematic Review With Meta-Analysis.

Nascimento LR^{1,2}, Teixeira-Salmela LF¹, Souza RB¹, Resende RA¹.

Author information

Abstract

Study Design Systematic review with meta-analysis. **Background** The addition of hip strengthening to knee strengthening for persons with patellofemoral pain has the potential to optimize treatment effects. There is a need to systematically review and pool the current evidence in this area.

Objective To examine the efficacy of hip strengthening, associated or not with knee strengthening, to increase strength, reduce pain, and improve activity in individuals with patellofemoral pain.

Methods A systematic review of randomized or controlled trials was performed. Participants in the reviewed studies were individuals with patellofemoral pain and the experimental intervention was hip and/or knee strengthening. Outcome data related to muscle strength, pain, and activity were extracted from the eligible trials and combined using a meta-analysis approach. **Results** Fourteen trials involving 673 participants were included. Random effects meta-analyses revealed that hip and knee strengthening decreased pain (MD -3.3, 95% CI -5.6 to -1.1) and improved activity (SMD 1.4, 95% CI 0.03 to 2.8), compared to no training/placebo. In addition, hip and knee strengthening was superior to knee strengthening alone for decreasing pain (MD -1.5, 95% CI -2.3 to -0.8) and improving activity (SMD 0.7, 95% CI 0.2 to 1.3).

Results were maintained beyond the intervention period. Meta-analyses showed no significant changes in strength for any of the interventions.

Conclusions Hip and knee strengthening is effective and superior to knee strengthening alone for decreasing pain and improving activity in persons with patellofemoral pain, however these outcomes were achieved without a concurrent change in strength. **Level of Evidence** Therapy, Level 1a-. J Orthop Sports Phys Ther, Epub 15 Oct 2017. doi:10.2519/jospt.2018.7365.

37. OSTEOARTHRITIS/KNEE**Rx strategy**

Phys Ther. 2017 Oct 23. doi: 10.1093/ptj/pzx104.

Exercise, Manual Therapy, and Booster Sessions in Knee Osteoarthritis: Cost-Effectiveness Analysis from a Multicenter Randomized Controlled Trial.

Bove AM¹, Smith KJ², Bise CG³, Fritz JM⁴, Childs J⁵, Brennan GP⁶, Abbott JH⁷, Fitzgerald GK³.
Author information

Abstract

BACKGROUND: Limited information exists regarding the cost-effectiveness of rehabilitation strategies for individuals with knee osteoarthritis (KOA).

OBJECTIVE: The study objective was to compare the cost-effectiveness of 4 different combinations of exercise, manual therapy, and booster sessions for individuals with KOA.

DESIGN: This economic evaluation involved a cost-effectiveness analysis performed alongside a multicenter randomized controlled trial.

SETTING: The study took place in Pittsburgh, Pennsylvania; Salt Lake City, Utah; and San Antonio, Texas.

PARTICIPANTS: The study participants were 300 individuals taking part in a randomized controlled trial investigating various physical therapy strategies for KOA.

INTERVENTION: Participants were randomized into 4 treatment groups: exercise only (EX), exercise plus booster sessions (EX+B), exercise plus manual therapy (EX+MT), and exercise plus manual therapy and booster sessions (EX+MT+B).

MEASUREMENTS: For the 2-year base case scenario, a Markov model was constructed using the US societal perspective and a 3% discount rate for costs and quality-adjusted life years (QALYs). Incremental cost-effectiveness ratios were calculated to compare differences in cost per QALY gained among the 4 treatment strategies.

RESULTS: In the 2-year analysis, booster strategies (EX+MT+B and EX+B) dominated no-booster strategies, with both lower health care costs and greater effectiveness. EX+MT+B had the lowest total health care costs. EX+B cost \$1061 more and gained 0.082 more QALYs than EX+MT+B, for an incremental cost-effectiveness ratio of \$12,900/QALY gained.

LIMITATIONS: The small number of total knee arthroplasty surgeries received by individuals in this study made the assessment of whether any particular strategy was more successful at delaying or preventing surgery in individuals with KOA difficult.

CONCLUSIONS: Spacing exercise-based physical therapy sessions over 12 months using periodic booster sessions was less costly and more effective over 2 years than strategies not containing booster sessions for individuals with KOA.

Unloading shoes

Osteoarthritis Cartilage. 2017 Nov 8. pii: S1063-4584(17)31304-3. doi: 10.1016/j.joca.2017.11.002.

Moderators and mediators of effects of unloading shoes on knee pain in people with knee osteoarthritis: an exploratory analysis of the SHARK randomised controlled trial.

Paterson KL¹, Kasza J², Bennell KL³, Wrigley TV³, Metcalf BR³, Campbell PK³, Hunter DJ⁴, Hinman RS³.

Author information

Abstract

OBJECTIVE:

To investigate moderators and biomechanical mediators of effects of unloading shoes on knee pain in people with knee osteoarthritis (OA).

METHODS:

Exploratory analysis from 164 participants in a clinical trial comparing unloading (ASICS GEL-Melbourne OA) to conventional walking shoes. The primary outcome was 6-month change in knee pain (11-point numerical rating scale (NRS)). Moderators included baseline peak knee adduction moment (KAM), radiographic severity (Kellgren & Lawrence (KL) scale), body mass, foot posture, neuropathic pain and diffuse knee pain. Mediators included change in peak KAM and KAM impulse.

RESULTS:

Radiographic severity was the only moderator to interact with footwear group ($P = 0.02$). Participants with $KL = 2$ experienced greater pain reductions with conventional compared to unloading shoes (mean difference in change in pain -1.64 units, 95% CI $-3.07, -0.21$), while unloading shoes tended to result in greater pain reductions than conventional shoes in $KL = 3$ (0.98 , 95% CI $-0.44, 2.39$) and $KL = 4$ (0.64 , 95% CI $-0.64, 1.93$). No variable showed any significant mediating effect in the entire cohort. However, there was some evidence that unloading shoes may reduce pain through reductions in peak KAM (indirect effect -0.31 , 95% CIs $-0.65, 0.03$; $P = 0.07$) in people with $KL \geq 3$, compared to conventional shoes.

CONCLUSION:

Unloading shoes conferred additional symptomatic benefits over conventional shoes in people with moderate to severe knee OA. There was some evidence effects may be mediated by a reduction in peak KAM. However, we were underpowered for subgroup analyses. These patients may represent a subgroup to which biomechanical interventions designed to reduce the KAM may be more effectively targeted.

40. ANKLE SPRAINS AND INSTABILITY**Susceptibility related to hip isometric strength**

J Athl Train. 2017 Nov 8. doi: 10.4085/1062-6050-52.11.18.

Hip Strength as a Predictor of Ankle Sprains in Male Soccer Players: A Prospective Study.

Powers CM¹, Ghoddosi N², Straub RK¹, Khayambashi K².

Author information

Abstract

CONTEXT: Diminished hip-abductor strength has been suggested to increase the risk of noncontact lateral ankle sprains.

OBJECTIVE: To determine prospectively whether baseline hip-abductor strength predicts future noncontact lateral ankle sprains in competitive male soccer players.

DESIGN: Prospective cohort study.

SETTING: Athletic training facilities and various athletic fields.

PATIENTS OR OTHER PARTICIPANTS: Two hundred ten competitive male soccer players.

MAIN OUTCOME MEASURE(S): Before the start of the sport season, isometric hip-abductor strength was measured bilaterally using a handheld dynamometer. Any previous history of ankle sprains, body mass index, age, height, and weight was documented. During the sport season (30 weeks), ankle injury status was recorded by team medical providers. Injured athletes were further classified based on the mechanism of injury. Only data from injured athletes who sustained noncontact lateral ankle sprains were used for analysis. Postseason, logistic regression was used to determine whether baseline hip strength predicted future noncontact lateral ankle sprains. A receiver operating characteristic curve was constructed for hip strength to determine the cutoff value for distinguishing between high-risk and low-risk outcomes.

RESULTS: A total of 25 noncontact lateral ankle sprains were confirmed, for an overall annual incidence of 11.9%. Baseline hip-abductor strength was lower in injured players than in uninjured players ($P = .008$). Logistic regression indicated that impaired hip-abductor strength increased the future injury risk (odds ratio = 1.10 [95% confidence interval = 1.02, 1.18], $P = .010$). The strength cutoff to define high risk was $\leq 33.8\%$ body weight, as determined by receiver operating characteristic curve analysis. For athletes classified as high risk, the probability of injury increased from 11.9% to 26.7%.

CONCLUSIONS: Reduced isometric hip-abductor strength predisposed competitive male soccer players to noncontact lateral ankle sprains.

45 A. MANUAL THERAPY LUMBAR & GENERAL**Temporal summation**

J Pain. 2017 Nov;18(11):1397-1408. doi: 10.1016/j.jpain.2017.07.007. Epub 2017 Aug 9.

Comparison of 2 Lumbar Manual Therapies on Temporal Summation of Pain in Healthy Volunteers.

Penza CW¹, Horn ME², George SZ³, Bishop MD⁴.
Author information

Abstract

The purpose of this study was to compare the immediate change in temporal summation of heat pain (TSP) between spinal manipulation (SMT) and spinal mobilization (MOB) in healthy volunteers. Ninety-two volunteers (24 male; 23.8 ± 5.3 years) were randomized to receive SMT, MOB, or no treatment (REST) for 1 session. Primary outcomes were changes in TSP, measured at the hand and foot, immediately after the session. A planned subgroup analysis investigated effects across empirically derived TSP clusters. For the primary outcome there were no differences in the immediate change in TSP measured at the foot between SMT and MOB, however, both treatments were superior to the REST condition. In the subgroup analysis the response to a standard TSP protocol was best characterized by 3 clusters: 52% no change ($n = 48$, 52%); facilitatory response ($n = 24$, 26%), and inhibitory response ($n = 20$, 22%). There was a significant Time \times Treatment group \times Cluster interaction for TSP measured at the foot. The inhibitory cluster showed the greatest attenuation of TSP after SMT and MOB compared with REST. These data suggest lumbar manual therapies of different velocities produce a similar localized attenuation of TSP, compared with no treatment. Attenuation of localized pain facilitatory processes by manual therapies was greatest in pain-free individuals who show an inhibitory TSP response.

PERSPECTIVE:

The attenuation of pain facilitatory measures may serve an important underlying role in the therapeutic response to manual therapies. Identifying patients in pain who still have an inhibitory capacity (ie, an inhibitory response subgroup) may be useful clinically in identifying the elusive "manual therapy" responder.

MT training

J Orthop Sports Phys Ther. 2017 Oct 15:1-31. doi: 10.2519/jospt.2018.7476.

Unraveling the Mechanisms of Manual Therapy: Modeling an Approach.

Bialosky JE^{1,2}, Beneciuk JM^{1,2}, Bishop MD¹, Coronado RA^{3,4}, Penza CW¹, Simon CB^{5,6}, George SZ⁶.

Author information**Abstract**

Synopsis Manual therapy interventions are popular among individual healthcare providers and their patients; however, systematic reviews do not strongly support their effectiveness. Small treatment effect sizes of manual therapy interventions may result from a "one size fits all" approach to treatment. Mechanistic based treatment approaches to manual therapy offer an intriguing alternative for identifying patients likely to respond to manual therapy. However, the current lack of knowledge of the mechanisms through which manual therapy interventions inhibit pain limits such an approach. The nature of manual therapy interventions further confounds such an approach as the related mechanisms are likely a complex interaction of factors related to the patient, the provider, and the environment in which the intervention occurs. Therefore, a model to guide both study design as well as the interpretation of findings is necessary. We have previously proposed a model suggesting the mechanical force from a manual therapy intervention results in systemic neurophysiological responses leading to pain inhibition. In this clinical commentary, we provide a narrative appraisal of the model and recommendations that potentially move forward the study of manual therapy mechanisms. J Orthop Sports Phys Ther, Epub 15 Oct 2017. doi:10.2519/jospt.2018.7476.

45 B. MANUAL THERAPY CERVICAL

Management of C spine MT

Physiother Theory Pract. 2017 Oct 20:1-10. doi: 10.1080/09593985.2017.1375056.

Exploring the teaching and learning of clinical reasoning, risks, and benefits of cervical spine manipulation.

Yamamoto K¹, Condotta L², Haldane C³, Jaffrani S⁴, Johnstone V⁵, Jachyra P⁶, Gibson BE^{6,7}, Yeung E⁶.

Author information

Abstract

The aim of this study was to examine how risks and benefits of cervical spine manipulation (CSM) were framed and discussed in the context of mentorship and their impact on the perception of safe practice of CSM in clinical physiotherapy settings.

A multi-method qualitative approach was employed, including a document analysis of established educational guidelines, observations of mentoring sessions, and individual face-to-face interviews with five mentees in the process of learning CSM, and four mentors with Orthopedic Manual Physical Therapy (OMPT) certification. Results demonstrated that participants' clinical decision-making processes to perform CSM were primarily oriented to the mitigation of risk. Achieving proficiency in the "science" of clinical reasoning and the "art" of "feel" related to mastering technical skills were viewed as means to mitigating risk and enhancing confidence to use CSM safely in clinical practice. While the "art" of technical skill mastery was of high importance to mentees and considered important to developing competency in performing CSM, it was discussed as distinct from their clinical reasoning processes.

Thus, promoting a more balanced and integrated use of the "art" and "science" of safe practice for CSM in OMPT training may result in greater confidence and judicious use of CSM by physiotherapists.

45 D. MANUAL THERAPY EXTREMITIES**Bone tumor ID****Original article****Identification of adult knee primary bone tumour symptom presentation: A qualitative study**

Lucinda C.C.Gosling^{ab} Alison B.Rushton^b

<https://doi.org/10.1016/j.math.2016.07.003>Get rights and content

Highlights

Delays in diagnosis of primary bone tumours are common and can affect outcomes. Patient and Healthcare Professional perspectives of tumour symptoms were explored. Early symptoms are similar to routine musculoskeletal conditions. Later symptoms showed greater similarities among participants compared to early. Findings may offer an opportunity to improve earlier diagnosis.

Objectives The aim of this study was to identify the symptom presentation of adult knee primary bone tumours from onset to Consultant diagnosis, from combined patient and healthcare professional perspectives.

Materials and methods A qualitative study using in-depth semi-structured interviews recruited a purposive sample of adult patients with a knee primary bone tumour (n = 8) and healthcare professionals with expertise in orthopaedic oncology (n = 6). Following informed consent, recorded interviews explored participants' experiences of symptom presentation. A grounded theory approach was utilised to analyse transcribed data, producing themes. Methods to increase rigour and trustworthiness were employed. Recruitment continued until data saturation was achieved.

Results Four key themes were established: 1] Symptoms started with intermittent pain which became more severe and more constant, 2] Pain was mechanical in nature but became more difficult to ease; 3] The pain story was unusual with a protracted symptom duration and failure to improve with conservative treatment; 4] Non-painful symptoms included swelling, and systemic signs were uncommon. More similarities between healthcare professionals' and patients' perceptions were found at Consultant diagnosis compared to onset.

Conclusion New insights of symptom presentation, particularly in the early stages have been provided which are not reflected in current guidelines. Although starting similarly to routine musculoskeletal presentations, a number of distinctive features may enable earlier diagnosis.

48 A. STM**Massage decreases fatigue**

Cancer. 2017 Oct 17. doi: 10.1002/cncr.31064.

Massage therapy decreases cancer-related fatigue: Results from a randomized early phase trial.

Kinkead B¹, Schettler PJ¹, Larson ER², Carroll D², Sharenko M², Nettles J^{1,2}, Edwards SA¹, Miller AH^{1,3}, Torres MA^{3,4}, Dunlop BW¹, Rakofsky JJ¹, Rapaport MH^{1,3}.

Author information

Abstract**BACKGROUND:**

Cancer-related fatigue (CRF) is a prevalent and debilitating symptom experienced by cancer survivors, yet treatment options for CRF are limited. In this study, we evaluated the efficacy of weekly Swedish massage therapy (SMT) versus an active control condition (light touch [LT]) and waitlist control (WLC) on persistent CRF in breast cancer survivors.

METHODS:

This early phase, randomized, single-masked, 6-week investigation of SMT, LT, and WLC enrolled 66 female stage 0-III breast cancer survivors (age range, 32-72 years) who had received surgery plus radiation and/or chemotherapy/chemoprevention with CRF (Brief Fatigue Inventory > 25). The primary outcome was the Multidimensional Fatigue Inventory (MFI), with the National Institutes of Health PROMIS Fatigue scale secondary.

RESULTS:

Mean baseline MFI scores for 57 evaluable subjects were 62.95 for SMT, 55.00 for LT, and 60.41 for WLC. SMT resulted in a mean (standard deviation) 6-week reduction in MFI total scores of -16.50 (6.37) (n = 20) versus -8.06 (6.50) for LT (n = 20) and an increase of 5.88 (6.48) points for WLC (n = 17) (treatment-by-time P < .0001). The mean baseline PROMIS Fatigue scores were SMT, 22.25; LT, 22.05; and WLC, 23.24. The mean (standard deviation) reduction in PROMIS Fatigue scores was -5.49 (2.53) points for SMT versus -3.24 (2.57) points for LT and -0.06 (1.88) points for WLC (treatment-by-time P = .0008). Higher credibility, expectancy, and preference for SMT than for LT did not account for these results.

CONCLUSION:

SMT produced clinically significant relief of CRF. This finding suggests that 6 weeks of a safe, widely accepted manual intervention causes a significant reduction in fatigue, a debilitating sequela for cancer survivors. Cancer 2017. © 2017 American Cancer Society.

48 C. MUSCLES**Hamstring tears**

J Sports Med Phys Fitness. 2017 Oct 24. doi: 10.23736/S0022-4707.17.07554-5.

Effect of stretching-based rehabilitation on pain, flexibility and muscle strength in dancers with hamstring injury: a single-blind, prospective, randomized clinical trial.

Kim G^{1,2}, Kim H³, Kim WK⁴, Kim J^{5,2,6}.

Author information

Abstract**BACKGROUND:**

Hamstring injuries commonly occur in mainstream sports and occupations that involve physical activity. We evaluated the effect of a stretching-based rehabilitation program on pain, flexibility, and strength in dancers with hamstring injuries.

METHODS:

Sixteen Korean traditional dancers with unilateral hamstring injuries were included and randomly assigned to a rehabilitation or control group. The rehabilitation group received stretching-based rehabilitation for 8 weeks, which comprised simple static stretches and basic range of motion (ROM) exercises, such as static and active stretching, concentric and eccentric ROM training, and trunk stabilization exercises. The control group received conventional treatment with analgesics and physical therapy. Outcomes were assessed before and after the interventions in both groups by comparing the visual analog scale (VAS) score for pain, straight leg raise ROM test for hamstring muscle flexibility, and isometric strength test for hamstring muscle strength.

RESULTS:

Subjects who underwent rehabilitation showed significant improvements in VAS score for pain ($p = 0.017$) and ROM for flexibility ($p < 0.001$). Muscle strength also increased after the rehabilitation program ($p < 0.05$).

CONCLUSIONS:

This rehabilitation program effectively decreases pain and increases flexibility and strength in patients with hamstring injury. The data indicate that a stretching-based rehabilitation program can help promote functional recovery from hamstring injury.

Hamstring tears

Br J Sports Med. 2017 Oct 30. pii: bjsports-2017-097616. doi: 10.1136/bjsports-2017-097616.

Clinical implications from daily physiotherapy examination of 131 acute hamstring injuries and their association with running speed and rehabilitation progression.

Whiteley R1, van Dyk N1,2, Wangensteen A1,3, Hansen C1.

Author information

Abstract

AIM: To investigate the association of daily clinical measures and the progression of rehabilitation and perceived running effort.

METHODS: A cohort of 131 athletes with an MRI-confirmed acute hamstring injury underwent a standardised criteria-based rehabilitation protocol. Descriptive and inferential statistics were used to investigate the association between daily clinical subjective and objective measures and both the progression of rehabilitation and perceived running effort. These measures included different strength, palpation, flexibility and functional tests. Inter-rater and intrarater reliability and minimal detectable change were established for the clinical measures of strength and flexibility by examining measures taken on consecutive days for the uninjured leg.

RESULTS: The progression of the daily measures was seen to be non-linear and varied according to the measure. Intra-rater reliability for the strength and flexibility measures were excellent (95% CI ≥ 0.85 for all measures). Strength (in the outer range position) and flexibility (in maximum hip flexion with active knee extension (MHFAKE) in supine) were best associated with rehabilitation progression and perceived running effort. Additionally, length of pain on palpation was usefully associated with rehabilitation progression. At lower perceived running effort there was a large variation in actual running speed.

CONCLUSION: Daily physical measures of palpation pain, outer range strength, MHFAKE and reported pain during daily activity are useful to inform the progression of rehabilitation.

51. CFS/BET**Life style training and technology**

Disabil Rehabil Assist Technol. 2017 Nov;12(8):801-807. doi: 10.1080/17483107.2016.1269208. Epub 2016 Dec 30.

Skill training preferences and technology use in persons with neck and low back pain.

Verbrugghe J¹, Haesen M², Spierings R¹, Willems K^{3,4}, Claes G⁵, Olivieri E⁵, Coninx K², Timmermans A¹.
Author information

Abstract**BACKGROUND:**

Neck pain (NP) and low back pain (LBP) are highly prevalent. Exercise therapy helps, but effect sizes and therapy compliance remain low. Client-centred therapy and technology use may play a role to improve therapy outcomes. To offer technology supported rehabilitation matching patient's goals, training preferences for rehabilitation and technology familiarity need to be known.

PURPOSE:

This study aims to (1) inventory training preferences and motives, (2) evaluate whether these change during rehabilitation, and (3) evaluate familiarity with using technologies, in persons with NP/LBP.

METHOD:

Semi-structured interviews were conducted with regard to training preferences and usage of mainstream technological devices.

RESULTS:

Persons with NP (n = 40) preferred to train on "lifting", "prolonged sitting" and "driving a car". Persons with LBP (n = 40) preferred to train on "household activities", "lifting" and "prolonged walking". Motives were predominantly "ability to work" and "ability to do free time occupations". Preferences shifted in ranking but remained the same during rehabilitation. Participants were familiar with the surveyed technologies.

CONCLUSION:

Persons with NP or LBP prefer to train on exercises supporting the improvement of everyday life skills. They use technologies in their professional and personal life, which may lower the threshold for the adoption of rehabilitation technologies. Implications for rehabilitation Persons with neck pain (NP) and persons with low back pain (LBP) prefer to train on specific activities that limit their functional ability during daily tasks. The underlying motives linked to preferred training activities are predominantly "being able to work" and "being able to perform free time occupations". Persons with NP and persons with LBP are accustomed to the use of mainstream technologies and the integration of these technologies in rehabilitation settings seems feasible. In order to enable technology supported rehabilitation that is client-centred, technologies need to offer an extensive number of exercises that support (components of) patient training preferences.

Core ex in LBP

Pain Pract. 2017 Nov;17(8):1008-1014. doi: 10.1111/papr.12552. Epub 2017 Feb 25.

Lumbopelvic Core Stabilization Exercise and Pain Modulation Among Individuals with Chronic Nonspecific Low Back Pain.

Paungmali A¹, Joseph LH^{1,2}, Silitertpisan P¹, Pirunsan U¹, Uthaikhup S¹.
[Author information](#)

Abstract**BACKGROUND:**

Lumbopelvic stabilization training (LPST) may provide therapeutic benefits on pain modulation in chronic nonspecific low back pain conditions. This study aimed to examine the effects of LPST on pain threshold and pain intensity in comparison with the passive automated cycling intervention and control intervention among patients with chronic nonspecific low back pain.

METHODS:

A within-subject, repeated-measures, crossover randomized controlled design was conducted among 25 participants (7 males and 18 females) with chronic nonspecific low back pain. All the participants received 3 different types of experimental interventions, which included LPST, the passive automated cycling intervention, and the control intervention randomly, with 48 hours between the sessions. The pressure pain threshold (PPT), hot-cold pain threshold, and pain intensity were estimated before and after the interventions.

RESULTS:

Repeated-measures analysis of variance showed that LPST provided therapeutic effects as it improved the PPT beyond the placebo and control interventions ($P < 0.01$). The pain intensity under the LPST condition was significantly better than that under the passive automated cycling intervention and controlled intervention ($P < 0.001$). Heat pain threshold under the LPST condition also showed a significant trend of improvement beyond the control ($P < 0.05$), but no significant effects on cold pain threshold were evident.

CONCLUSIONS:

Lumbopelvic stabilization training may provide therapeutic effects by inducing pain modulation through an improvement in the pain threshold and reduction in pain intensity. LPST may be considered as part of the management programs for treatment of chronic low back pain.

Lifting posture

Musculoskelet Sci Pract. 2017 Oct 18;33:35-40. doi: 10.1016/j.msksp.2017.10.010.

What do physiotherapists and manual handling advisors consider the safest lifting posture, and do back beliefs influence their choice?

Nolan D¹, O'Sullivan K², Stephenson J³, O'Sullivan P⁴, Lucock M⁵.
Author information

Abstract**BACKGROUND:**

It is commonly believed lifting is dangerous and the back should be straight during lifting. These beliefs may arise from healthcare professionals, yet no study has evaluated the lifting and back beliefs of manual handling advisors (MHAs) and physiotherapists (PTs).

OBJECTIVES:

To evaluate (i) what lifting technique MHAs and PTs perceive as safest, and why, and (ii) the back pain beliefs of MHAs and PTs.

DESIGN:

Data was collected via an electronic survey.

METHOD:

Participants selected the safest lifting posture from four options: two with a straight back and two with a more rounded back, with justification. Back beliefs were collected via the Back-Pain Attitudes Questionnaire (Back-PAQ). Relationships were investigated using multiple linear and logistic regression models.

RESULTS:

400 PTs and MHAs completed the survey. 75% of PTs and 91% of MHAs chose a straight lifting posture as safest, mostly on the basis that it avoided rounding of the back. MHAs scored significantly higher than PTs on the Back-PAQ instrument (mean difference = 33.9), indicating more negative back beliefs. Those who chose the straight back position had significantly more negative back beliefs (mean 81.9, SD 22.7) than those who chose a round back lift (mean 61.7, SD 21.1).

CONCLUSION:

Avoiding rounding the back while lifting is a common belief in PTs and MHAs, despite the lack of evidence that any specific spinal posture is a risk factor for low back pain. MHAs, and those who perceived a straight back position as safest, had significantly more negative back beliefs.

53. CORE**Core in LBP**

Pain Pract. 2017 Nov;17(8):1008-1014. doi: 10.1111/papr.12552. Epub 2017 Feb 25.

Lumbopelvic Core Stabilization Exercise and Pain Modulation Among Individuals with Chronic Nonspecific Low Back Pain.

Paungmali A¹, Joseph LH^{1,2}, Silitertpisan P¹, Pirunsan U¹, Uthaikhup S¹.
Author information

Abstract

BACKGROUND:

Lumbopelvic stabilization training (LPST) may provide therapeutic benefits on pain modulation in chronic nonspecific low back pain conditions. This study aimed to examine the effects of LPST on pain threshold and pain intensity in comparison with the passive automated cycling intervention and control intervention among patients with chronic nonspecific low back pain.

METHODS:

A within-subject, repeated-measures, crossover randomized controlled design was conducted among 25 participants (7 males and 18 females) with chronic nonspecific low back pain. All the participants received 3 different types of experimental interventions, which included LPST, the passive automated cycling intervention, and the control intervention randomly, with 48 hours between the sessions. The pressure pain threshold (PPT), hot-cold pain threshold, and pain intensity were estimated before and after the interventions.

RESULTS:

Repeated-measures analysis of variance showed that LPST provided therapeutic effects as it improved the PPT beyond the placebo and control interventions ($P < 0.01$). The pain intensity under the LPST condition was significantly better than that under the passive automated cycling intervention and controlled intervention ($P < 0.001$). Heat pain threshold under the LPST condition also showed a significant trend of improvement beyond the control ($P < 0.05$), but no significant effects on cold pain threshold were evident.

CONCLUSIONS:

Lumbopelvic stabilization training may provide therapeutic effects by inducing pain modulation through an improvement in the pain threshold and reduction in pain intensity. LPST may be considered as part of the management programs for treatment of chronic low back pain.

58. RUNNING**Injury %**

Scand J Med Sci Sports. 2017 Nov;27(11):1372-1383. doi: 10.1111/sms.12743. Epub 2016 Aug 3.

Running injuries in novice runners enrolled in different training interventions: a pilot randomized controlled trial.

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Abstract

The purpose of this trial was to evaluate injury risk in novice runners participating in different strength training interventions. This was a pilot randomized controlled trial. Novice runners (n = 129, 18-60 years old, <2 years recent running experience) were block randomized to one of three groups: a "resistance" strength training group, a "functional" strength training group, or a stretching "control" group. The primary outcome was running related injury. The number of participants with complaints and the injury rate (IR = no. injuries/1000 running hours) were quantified for each intervention group. For the first 8 weeks, participants were instructed to complete their training intervention three to five times a week. The remaining 4 months was a maintenance period.

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NCT01900262. A total of 52 of the 129 (40%) novice runners experienced at least one running related injury: 21 in the functional strength training program, 16 in the resistance strength training program and 15 in the control stretching program. Injury rates did not differ between study groups [IR = 32.9 (95% CI 20.8, 49.3) in the functional group, IR = 31.6 (95% CI 18.4, 50.5) in the resistance group, and IR = 26.7 (95% CI 15.2, 43.2)] in the control group. Although this was a pilot assessment, home-based strength training did not appear to alter injury rates compared to stretching. Future studies should consider methods to minimize participant drop out to allow for the assessment of injury risk. Injury risk in novice runners based on this pilot study will inform the development of future larger studies investigating the impact of injury prevention interventions