

2. LBP

Pain education

Arch Phys Med Rehabil. 2017 Nov 11. pii: S0003-9993(17)31343-6. doi: 10.1016/j.apmr.2017.10.016.

Pain Neurophysiology Education and Therapeutic Exercise for Patients With Chronic Low Back Pain: A Single-Blind Randomized Controlled Trial.

Gema BP¹, Enrique LG², Nathalie A R³, Tomás GI⁴, Virginia JP¹, Daniel PM⁴.
Author information

Abstract

AIM:

To assess the effect of a pain neurophysiology education program plus therapeutic exercise for patients with chronic low back pain (CLBP).

DESIGN:

Single-blind randomized controlled trial.

SETTING:

Private clinic (Clínica Bonn) and Alcalá de Henares University, Madrid, Spain.

PARTICIPANTS:

56 patients with CLBP for 6 months or more.

INTERVENTION:

Participants were randomized to receive either a therapeutic exercise (TE) program consisting of motor control, stretching, and aerobic exercises (TE group, n=28) or the same therapeutic exercise program in addition to a pain neurophysiology education program (PNE+TE group, n=28), conducted in two 30 to 50 minute sessions in groups of 4 to 6 participants.

MAIN OUTCOMES MEASURES:

The primary outcome was pain intensity rated on the Numeric Pain Rating Scale which was completed immediately following treatment and at a 1-month and 3-month follow-up. Secondary outcome measures were pressure pain threshold, finger-to-floor distance, Roland-Morris Disability Questionnaire, Pain Catastrophizing Scale, Tampa Scale for Kinesiophobia, and the Patient Global Impression of Change.

RESULTS:

At the 3-month follow-up, a large change in pain intensity (-2.2 (-2.93,-1.28), $p<0.001$; $d=1.37$) was observed for the PNE+TE group, and a moderate effect size was observed for the secondary outcome measures.

CONCLUSION:

Combining pain neurophysiology education plus therapeutic exercise resulted in significantly better results for participants with CLBP, with a large effect size, compared to therapeutic exercise alone.

Perturbation therapy

Eur J Appl Physiol. 2017 Dec;117(12):2547-2560. doi: 10.1007/s00421-017-3742-6. Epub 2017 Oct 19.

A random-perturbation therapy in chronic non-specific low-back pain patients: a randomised controlled trial.

Arampatzis A^{1,2}, Schroll A^{3,4}, Catalá MM^{3,4}, Laube G^{3,4}, Schüler S⁵, Dreinhofer K^{5,6}.
Author information

Abstract

The purpose of the study was to assess the effectiveness of a specific rehabilitation therapy for chronic non-specific low-back pain patients, based on a random/irregular functional perturbation training induced by force disturbances to the spine.

Forty patients (20 controls and 20 in the perturbation-based group) finished the whole experimental design. A random-perturbation exercise, which included variable and unpredictable disturbances, was implemented in the therapy of the perturbation-based group (13 weeks, two times per week and 1.5 h per session). The participants of the control group did not receive any specific training. Low-back pain, muscle strength, and neuromuscular control of spine stability were investigated before and after the therapy using the visual analog scale, maximal isometric and isokinetic contractions, nonlinear time series analysis, and by determining the stiffness and damping of the trunk after sudden perturbations.

The perturbation-based therapy reduced patient's low-back pain (35%), increased muscle strength (15-22%), and trunk stiffness (13%), while no significant changes were observed in the control group. It can be concluded that the proposed therapy has the potential to enhance trunk muscle capability as well as sensory information processing within the motor system during sudden loading and, as a consequence, improve the stabilization of the trunk.

5. SURGERY

Smoking and success

The association between tobacco smoking and surgical intervention for lumbar spinal stenosis cohort study of 331,941 workers

Björn Knutsson, MD, PhD Sebastian Mukka, MD, PhD Jens Wahlström, PhD (Associate Professor) Bengt Järvholm, MD, PhD (Professor) Arkan S. Sayed-Noor, MD, PhD, FRCS PlumX Metrics

Abstract

Background Context Tobacco smoking is an injurious habit associated with a number of chronic disorders. Its influence on disc metabolism and degeneration including LSS has been investigated in the literature.

Purpose We aimed to investigate whether tobacco smoking is an independent risk factor of undergoing surgical intervention for lumbar spinal stenosis (LSS).

Study Design/Setting A prospective cohort study.

Patient Sample 331,941 workers derived from a Swedish nationwide occupational surveillance program for construction workers.

Outcome Measures The incidence of undergoing surgical intervention for LSS in tobacco smokers versus no smokers.

Methods At inclusion, age, sex, body mass index (BMI), workers' job title, and self-reported smoking habits were registered. The workers were divided into four categories: never smoked, former smoker, moderate current (1-14 cigarettes/day) and heavy current (≥ 15 cigarettes/day). Patients who underwent a surgically treated LSS were defined using the relevant ICD disease code derived from the Swedish National Patient Register.

Results 331,941 participants were included in the analysis. 44% of the participants were non-smokers, 16% were former smokers, 26% were moderate smoker, and 14% were heavy smokers. The vast majority of construction workers were males (95%). During the average follow-up of 30.7 years, 1623 participants were surgically treated for LSS. The IRRs of LSS varied across smoking categories, with the highest values found in heavy smokers. Compared with non-smokers, all smoking categories show an increased incidence of surgically treated LSS. The findings were consistent even when the comparison was performed for participants with BMI between 18.5 and 25 (Table 3) and for participants aged between 40 and 74 years.

Conclusion Tobacco smoking is associated with increased incidence of surgically treated LSS. The effect seems to be dose-related, whereby heavy smokers have a higher risk than moderate or former smokers.

7. PELVIC ORGANS/WOMAN'S HEALTH

Estrogen therapy and stroke

PLoS Med. 2017 Nov 17;14(11):e1002445. doi: 10.1371/journal.pmed.1002445. eCollection 2017 Nov.

Postmenopausal hormone therapy and risk of stroke: A pooled analysis of data from population-based cohort studies.

BACKGROUND: Recent research indicates a favourable influence of postmenopausal hormone therapy (HT) if initiated early, but not late, on subclinical atherosclerosis. However, the clinical relevance of timing of HT initiation for hard end points such as stroke remains to be determined. Further, no previous research has considered the timing of initiation of HT in relation to haemorrhagic stroke risk. The importance of the route of administration, type, active ingredient, and duration of HT for stroke risk is also unclear. We aimed to assess the association between HT and risk of stroke, considering the timing of initiation, route of administration, type, active ingredient, and duration of HT.

METHODS AND FINDINGS: Data on HT use reported by the participants in 5 population-based Swedish cohort studies, with baseline investigations performed during the period 1987-2002, were combined in this observational study. In total, 88,914 postmenopausal women who reported data on HT use and had no previous cardiovascular disease diagnosis were included. Incident events of stroke (ischaemic, haemorrhagic, or unspecified) and haemorrhagic stroke were identified from national population registers. Laplace regression was employed to assess crude and multivariable-adjusted associations between HT and stroke risk by estimating percentile differences (PDs) with 95% confidence intervals (CIs). The fifth and first PDs were calculated for stroke and haemorrhagic stroke, respectively. Crude models were adjusted for age at baseline only. The final adjusted models included age at baseline, level of education, smoking status, body mass index, level of physical activity, and age at menopause onset. Additional variables evaluated for potential confounding were type of menopause, parity, use of oral contraceptives, alcohol consumption, hypertension, dyslipidaemia, diabetes, family history of cardiovascular disease, and cohort. During a median follow-up of 14.3 years, 6,371 first-time stroke events were recorded; of these, 1,080 were haemorrhagic. Following multivariable adjustment, early initiation (<5 years since menopause onset) of HT was associated with a longer stroke-free period than never use (fifth PD, 1.00 years; 95% CI 0.42 to 1.57), but there was no significant extension to the time period free of haemorrhagic stroke (first PD, 1.52 years; 95% CI -0.32 to 3.37). When considering timing as a continuous variable, the stroke-free and the haemorrhagic stroke-free periods were maximal if HT was initiated approximately 0-5 years from the onset of menopause. If single conjugated equine oestrogen HT was used, late initiation of HT was associated with a shorter stroke-free (fifth PD, -4.41 years; 95% CI -7.14 to -1.68) and haemorrhagic stroke-free (first PD, -9.51 years; 95% CI -12.77 to -6.24) period than never use. Combined HT when initiated late was significantly associated with a shorter haemorrhagic stroke-free period (first PD, -1.97 years; 95% CI -3.81 to -0.13), but not with a shorter stroke-free period (fifth PD, -1.21 years; 95% CI -3.11 to 0.68) than never use. Given the observational nature of this study, the possibility of uncontrolled confounding cannot be excluded. Further, immortal time bias, also related to the observational design, cannot be ruled out.

CONCLUSIONS: When initiated early in relation to menopause onset, HT was not associated with increased risk of incident stroke, regardless of the route of administration, type of HT, active ingredient, and duration. Generally, these findings held also for haemorrhagic stroke. Our results suggest that the initiation of HT 0-5 years after menopause onset, as compared to never use, is associated with a decreased risk of stroke and haemorrhagic stroke. Late initiation was associated with elevated risks of stroke and haemorrhagic stroke when conjugated equine oestrogen was used as single therapy. Late initiation of combined HT was associated with haemorrhagic stroke risk.

8. VISCERA

Fecal transplant

Aliment Pharmacol Ther. 2017 Dec 11. doi: 10.1111/apt.14443.

The long-term effects of faecal microbiota transplantation for gastrointestinal symptoms and general health in patients with recurrent *Clostridium difficile* infection.

Jalanka J¹, Hillamaa A², Satokari R¹, Mattila E², Anttila VJ², Arkkila P².

Author information

Abstract

BACKGROUND:

Faecal microbiota transplantation (FMT) is an effective treatment for recurrent *Clostridium difficile* infection. In short-term the treatment has been shown to be safe, however, there are no large, long-term follow-up studies looking into the potential adverse effects.

AIM:

To analyse the long-term effect of FMT treatment in patients with recurrent *C. difficile* infection and to compare the outcome to antibiotic treated patients.

METHODS:

Altogether 84 patients of which 45 received a FMT treatment and 39 served as controls receiving antibiotics for the infection were followed on average for 3.8 years. Their recovery and medical status was evaluated using a retrospective questionnaire, determining their quality of life, gastrointestinal symptoms and new diseases potentially related to the FMT.

RESULTS:

There was no difference in the incidence of severe diseases (inflammatory bowel disease, cancer, autoimmune disease, allergy, neurological diseases) between the patient groups. In addition, weight gain did not differ between treatment groups. The FMT treated patients reported that their bowel habits improved significantly faster, they had less irregular bowel function and less symptoms of upper GI-tract when compared to the patients treated with antibiotics. Significantly more patients in FMT-group reported that their mental health improved after the treatment. The willingness to receive FMT treatment for potential new *C. difficile* infection was significantly higher in both treatment groups compared to other treatment options.

CONCLUSION:

Our study highlights that FMT is a durable, safe and acceptable treatment option for patients with recurrent *C. difficile* infection also in long term, and it shows potential benefits over antimicrobial treatment.

12 A. WHIPLASH

Predictors of chronicity

Spine J. 2017 Nov 16. pii: S1529-9430(17)31167-1. doi: 10.1016/j.spinee.2017.11.014.

Predictors before and after multimodal rehabilitation for pain acceptance and engagement in activities at a 1-year follow-up for patients with whiplash-associated disorders (WAD)-a study based on the Swedish Quality Registry for Pain Rehabilitation (SQRPR).

Söderlund A¹, Löfgren M², Stålnacke BM³.

Author information

Abstract

BACKGROUND CONTEXT: Studies have shown that pain acceptance strategies related to psychological flexibility are important in the presence of chronic musculoskeletal pain.

However, the predictors of these strategies have not been studied extensively in patients with whiplash-associated disorders (WAD).

PURPOSE: The purpose of this study was to predict chronic pain acceptance and engagement in activities at 1-year follow-up with pain intensity, fear of movement, perceived responses from significant others, outcome expectancies, and demographic variables in patients with WAD before and after multimodal rehabilitation (MMR).

STUDY DESIGN: The design of this investigation was a cohort study with 1-year postrehabilitation follow-up.

STUDY SETTING: The subjects participated in MMR at a Swedish rehabilitation clinic during 2009-2015.

PATIENT SAMPLE: The patients had experienced a whiplash trauma (WAD grade I-II) and were suffering from pain and reduced functionality. A total of 386 participants were included: 297 fulfilled the postrehabilitation measures, and 177 were followed up at 1 year after MMR.

OUTCOME MEASURES: Demographic variables, pain intensity, fear of movement, perceived responses from significant others, and outcome expectations were measured at the start and after MMR. Chronic pain acceptance and engagement in activities were measured at follow-up.

METHODS: The data were obtained from a Swedish Quality Registry for Pain Rehabilitation (SQRPR).

RESULTS: Outcome expectancies of recovery, supporting and distracting responses of significant others, and fear of (re)injury and movement before MMR were significant predictors of engagement in activities at follow-up. Pain intensity and fear of (re)injury and movement after MMR significantly predicted engagement in activities at follow-up. Supporting responses of significant others and fear of (re)injury and movement before MMR were significant predictors of pain acceptance at the 1-year follow-up. Solicitous responses of significant others and fear of (re)injury and movement at postrehabilitation significantly predicted pain acceptance at follow-up.

CONCLUSION: For engagement in activities and pain acceptance, the fear of movement appears to emerge as the strongest predictor, but patients' perceived reactions from their spouses need to be considered in planning the management of WAD.

13 B. TMJ/ORAL**College students TMJ**

J Prosthodont. 2017 Nov 14. doi: 10.1111/jopr.12704.

A Study to Determine the Prevalence of Temporomandibular Disorders in a Young Adult Population and its Association with Psychological and Functional Occlusal Parameters.

Jivnani HM¹, Tripathi S¹, Shanker R¹, Singh BP¹, Agrawal KK¹, Singhal R².

Author information

Abstract

PURPOSE:

To determine the prevalence of temporomandibular disorders (TMD) in medical university students and to analyze the relationship of TMD with psychological and functional occlusal parameters.

MATERIALS AND METHODS:

200 students (mean age 21.81 ± 1.99) were screened for TMD with the TMD Pain Screener. Clinical examinations identified the participants with TMD. Based on their diagnostic criteria for TMD (DC/TMD) axis I diagnosis, participants were divided into three groups: group 1- non-TMD, group 2- pain related TMD and headaches, and group 3- intra-articular joint disorders. Further study was continued involving patients diagnosed with TMD as the study group, and an equal number of age- and sex-matched participants were selected in control group. Among these, emotional distress was evaluated using the "hospital anxiety and depression scale" (HADS). Occlusal evaluations were done by using the T-Scan computerized occlusal analysis system. Occlusion time, left lateral disclusion time, right lateral disclusion time, and protrusion disclusion time were measured with T-Scan III. These parameters were compared among the groups with ANOVA test at a significance level of 0.05.

RESULTS:

17% of the population were affected by TMD. The mean HADSd (depression) and HADSa (anxiety) scores were significantly higher ($p < 0.05$) in group 2 (7.67 ± 3.68 ; 10.60 ± 3.33) and group 3 (6.89 ± 3.23 ; 9.26 ± 4.05) as compared to group 1 (3.18 ± 2.33 ; 5.29 ± 3.21). The mean values of occlusion time, left lateral disclusion time, right lateral disclusion time, and protrusion-disclusion time were also higher for group 2 and group 3 as compared to group 1.

CONCLUSIONS:

This study found that the prevalence of TMD in this university student population was 17%. There were significant associations of TMD with psychological parameters and functional occlusal parameters.

13 C. AIRWAYS/SWALLOWING/SPEECH**CPAP**

European Archives of Oto-Rhino-Laryngology
pp 1–8 | Cite as

Association between continuous positive airway pressure and serum aminotransferases in patients

Li-Da Chen Liang-Ji Zhang Xue-Jun Lin Jia-Chao Qi Hao Li Zhi Wu Qiao-Zhen Xu Ya-Ping Huang Li Lin

Introduction

Obstructive sleep apnea (OSA) has been suggested to be a potential contributing factor for nonalcoholic fatty liver disease (NAFLD). Studies on the association between continuous positive airway pressure (CPAP) and NAFLD in OSA patients are limited and controversial.

Objectives

The aim of this study was to assess the relationship between OSA and NAFLD and the effect of CPAP therapy on serum aminotransferase levels in OSA patients.

Methods

A total of 160 consecutive patients who underwent standard polysomnography were enrolled. Blood samples were obtained in the morning after sleep for biological profile measurements. Non-invasive ultrasound techniques were used to assess liver steatosis and fibrosis. Within the OSA group, serum aminotransferases were detected before and after CPAP treatment.

Results

Alanine aminotransferase (ALT), aspartate aminotransferase (AST), gamma-glutamyltransferase, and liver steatosis score increased significantly with an increase in OSA severity. Stepwise multiple regression with liver steatosis score, ALT, AST as dependent variable, respectively, apnea–hypopnea index ($\beta = 0.447, p = 0.020$; $\beta = 0.266, p = 0.001$; $\beta = 0.351, p = 0.020$, respectively) significantly predicted the liver steatosis score, ALT, AST after adjustment for confounders. After 3 months of CPAP treatment, there was a significant decrease in both ALT (54.20 ± 24.34 vs. $46.52 \pm 24.95, p = 0.000$) and AST (31.82 ± 8.91 vs. $29.00 \pm 8.34, p = 0.039$).

Conclusions

OSA severity was independently associated with liver steatosis and elevation of serum aminotransferases. 3 months of CPAP therapy were associated with a statistically significant improvement on liver injury in OSA patients.

16. CONCUSSIONS

Exercise

Scand J Med Sci Sports. 2017 Dec;27(12):2002-2008. doi: 10.1111/sms.12844. Epub 2017 Mar 8.

Do post-concussion-like symptom responses change following exercise or sports participation in a non-concussed cohort?

Balasundaram AP^{1,2}, Athens J³, Schneiders AG⁴, McCrory P⁵, Sullivan SJ².

Author information

Abstract

The purposes of this study were (a) to determine the reliable change in post-concussion-like symptoms reported following self-selected exercise or sports activities and (b) to explore the potential influence of gender and exercise parameters on post-concussion-like symptoms reported by a non-concussed cohort following exercise/training.

A pre-to-post observational design was used. A convenience sample of students aged 18-30 years who visited a university recreation center to engage in their chosen exercise activity and a purposeful sample of men's and women's rugby union players engaged in their regular training sessions were included in the study. All participants reported their symptoms using the symptom scale of the Sport Concussion Assessment Tool 2. The reliable change index was used to determine the change in symptom scores reported from pre-to post-exercise/training. Multiple linear regression analysis was used to model the exercise variables to explain the impact on the reporting of symptoms. A total of 260 participants (146 males and 114 females) completed their self-selected exercise activity or rugby union training.

Approximately two-thirds of all participants did not demonstrate a change (increase or decrease) in total symptom score (201/260, 77.9%) and/or symptom severity score (212/260, 81.9%) from pre-to post-exercise/training. The symptom response following exercise or sports training did not change in the majority of participants. Clinicians need to be aware of these findings to make informed decisions on return-to-play following a concussive brain injury.

26. CARPAL TUNNEL SYNDROME

Comparison of surgeries

J Hand Surg Am. 2017 Dec 6. pii: S0363-5023(17)30341-6. doi: 10.1016/j.jhssa.2017.10.033.

Comparative Morbidity of Cubital Tunnel Surgeries: A Prospective Cohort Study.

Staples R¹, London D¹, Dardas AZ¹, Goldfarb CA¹, Calfee RP².

Author information

Abstract

PURPOSE:

Randomized controlled trials have not identified a superior surgical approach to cubital tunnel syndrome surgery. This study evaluates the early morbidity of open in situ decompression and transposition.

METHODS:

This prospective cohort study enrolled 125 adult patients indicated for cubital tunnel surgery at a tertiary institution. Exclusion criteria included preoperative use of narcotics and concurrent elbow procedures. In situ decompressions (n = 47) and ulnar nerve transpositions (n = 78) were performed. Data were collected by independent clinicians at 3 postoperative intervals: 1 to 3 weeks, 4 to 8 weeks, and longer than 8 weeks. Postoperative data quantified surgical morbidity: visual analog scale (0-10) surgical site pain, narcotic consumption, patient-reported disability (Levine-Katz, Patient-Reported Elbow Evaluation [PREE] scores). Olecranon paresthesia and wound complications (hematoma, drainage, infection) were recorded.

RESULTS:

No preoperative differences in age, sex, or the presence of pain existed between the surgical groups. Surgical site pain was not significantly different at any time. Following transposition, a significantly greater percentage of patients were using narcotics at 4 to 8 weeks after surgery and the average total morphine equivalents consumed per patient was significantly greater. Both Levine-Katz and PREE scores indicated greater disability at 1 to 3 and 4 to 8 weeks after transposition, but this significant difference resolved by final follow-up. Olecranon paresthesias occurred after both procedures but were significantly less frequent at 4 to 8 weeks and longer than 8 weeks after decompression. Twelve hematomas occurred following transposition (15%) with 1 requiring operative debridement and 5 hematomas resolved with nonsurgical treatment after in situ decompression (11%).

CONCLUSIONS:

Ulnar nerve transposition imparts greater surgical morbidity than decompression with greater narcotic consumption, more patient-reported disability up to 8 weeks after surgery, and more persistent olecranon paresthesia. However, most differences in surgical morbidity are transient with resolution after 8 weeks following surgery.

31. KNEE

Weight and damage

BMC Musculoskelet Disord. 2017 Dec 8;18(1):517. doi: 10.1186/s12891-017-1884-7.

Association of body mass index with knee cartilage damage in an asymptomatic population-based study.

Keng A¹, Sayre EC², Guermazi A^{3,4}, Nicolaou S^{5,6}, Esdaile JM^{2,6}, Thorne A⁷, Singer J^{7,8}, Kopec JA^{2,8}, Cibere J^{9,10,11}.

Author information

Abstract

BACKGROUND:

Cartilage changes are an important early finding of osteoarthritis (OA), which can exist even before symptoms. Our objective was to determine the prevalence of knee cartilage damage on magnetic resonance imaging (MRI) in an asymptomatic population-based cross-sectional study and to evaluate the association of body mass index (BMI) with cartilage damage.

METHODS:

Subjects, aged 40-79 years, without knee pain (n = 73) were recruited as a random population sample and assessed for BMI (kg/m²), including current BMI (measured), past BMI at age 25 (self-reported) and change in BMI. Knee cartilage was scored semi-quantitatively (grades 0-4) on MRI. In primary analysis, cartilage damage was defined as ≥ 2 (at least moderate) and in a secondary analysis as ≥ 3 (severe). We also conducted a sensitivity analysis by dichotomizing current BMI as < 25 vs. ≥ 25 . Logistic regression was used to evaluate the association of each BMI variable with prevalent MRI-detected cartilage damage, adjusted for age and sex.

RESULTS:

Of 73 subjects, knee cartilage damage ≥ 2 and ≥ 3 was present in 65.4% and 28.7%, respectively. The median current BMI was 26.1, median past BMI 21.6, and median change in BMI was a gain of 2.8. For cartilage damage ≥ 2 , current BMI had a non-statistically significant OR of 1.65 per 5 units (95% CI 0.93-2.92). For cartilage damage ≥ 3 , current BMI showed a trend towards statistical significance with an OR of 1.70 per 5 units (95% CI 0.99-2.92). Past BMI and change in BMI were not significantly associated with cartilage damage. Current BMI ≥ 25 was statistically significantly associated with cartilage damage ≥ 2 (OR 3.04 (95% CI 1.10-8.42)), but not for ≥ 3 (OR 2.63 (95% CI 0.86-8.03)).

CONCLUSIONS:

MRI-detected knee cartilage damage was highly prevalent in this asymptomatic population-based cohort. We report a trend towards significance of BMI with cartilage damage severity. Subjects with abnormal current BMI (≥ 25) had a 3-fold increased odds of cartilage damage ≥ 2 , compared to those with normal BMI. This study lends support towards the role of obesity in the pathogenesis of knee cartilage damage at an asymptomatic stage of disease.

34. PATELLA**Resection**

Arthroscopy. 2017 Dec 8. pii: S0749-8063(17)31210-0. doi: 10.1016/j.arthro.2017.09.021.

Return to Sports After Tibial Tubercle Osteotomy for Patellofemoral Pain and Osteoarthritis.

Liu JN¹, Wu HH², Garcia GH³, Kalbian IL⁴, Strickland SM⁴, Shubin Stein BE⁴.

Author information

Abstract**PURPOSE:**

To determine the rate of return to sports and clinical outcomes after anteromedialization (AMZ) tibial tubercle osteotomy (TTO) for patients with patellofemoral pain and/or osteoarthritis.

METHODS:

This study is a retrospective case series of consecutive patients who underwent unilateral or staged bilateral AMZ TTO for a primary diagnosis of patellofemoral pain or arthritis. Included were all patients with minimum 1-year follow-up. The indication for surgery was failure of at least 6 months of nonoperative treatment. Simultaneous tubercle distalization or proximal-medial soft-tissue procedures were excluded; however, prior patellar instability procedures did not prohibit inclusion if there was no recurrence. A diagnostic arthroscopy was performed to evaluate the cartilage surfaces; AMZ TTO was performed by use of a freehand technique and two 4.5-mm fully threaded screws for fixation. A gradual return to activities was permitted at 6 months; however, contact sports were prohibited until 9 months postoperatively. Patients were evaluated retrospectively for participation in sports using a questionnaire about the level of participation, return to sporting activities, and Kujala score. Statistical analysis included 1-way analysis of variance and χ^2 or Fisher exact and paired t tests.

RESULTS:

Forty-eight patients played sports within 3 years before surgery. The majority were female patients (84.2%). The average age at surgery was 29.6 years, with an average follow-up period of 4.6 years. The average Kujala score improved from 51.2 to 82.6 ($P < .0001$); the average pain score improved from 4.1 to 1.8 ($P < .001$). Of the patients, 83.3% returned to at least 1 sport on average 7.8 months postoperatively. Of these, 77.5% believed they returned to sports at the same level or a higher level.

CONCLUSIONS:

Patients undergoing AMZ TTO for patellofemoral pain or arthritis had an 83.3% rate of return to 1 or more sporting activities at an average of 7.8 months after surgery, with many patients returning at the same level or a higher level of intensity compared with their preoperative state.

37. OSTEOARTHRITIS/KNEE**Knee OA and muscle mass**

Clinical Rheumatology
pp 1–8 | Cite as

Decreased muscle mass is independently associated with knee pain in female patients with radiographically mild osteoarthritis: a nationwide cross-sectional study (KNHANES 2010–2011)

Hee Min Park o Jae Kim Byeori Lee Minkyoungh Kwon Seung Min Jung Sang-Won Lee Yong-Beom Park Jason Jungsik Song

To evaluate the association between muscle mass and knee pain in relation to radiographic severity of knee osteoarthritis.

We consulted nationwide health examination and survey records collected from 2010 to 2011 and extracted data regarding female patients aged > 50 years and diagnosed with knee osteoarthritis. Radiographic severity was assessed on plain radiographs using the Kellgren-Lawrence system, whereas appendicular skeletal mass was obtained from dual-energy X-ray absorptiometry data. We performed multivariate logistic regression to evaluate the association between knee pain and muscle mass index (appendicular skeletal muscle mass divided by body weight in percentile) in patient groups stratified by radiographic severity of knee osteoarthritis. Among 17,476 participants of the national survey, 2013 female knee osteoarthritis patients were identified and stratified by radiographic severity (grade ≤ 1, $n = 1136$; grade 2, $n = 240$; grade 3, $n = 379$; and grade 4, $n = 258$). For mild osteoarthritis (Kellgren-Lawrence grade 2), muscle mass index was significantly lower in patients with knee pain than in those without knee pain (24.9 ± 3.9 vs $26.5 \pm 6.3\%$, $P = 0.023$), whereas no such difference was noted for severe osteoarthritis (Kellgren-Lawrence grade > 2).

After adjusting for clinical variables by multivariate logistic regression, decreased muscle mass index remained significantly associated with knee pain in patients with mild osteoarthritis but not in those with severe osteoarthritis (regression coefficient 0.915, 95% confidence interval 0.854–0.981, $P = 0.012$). Lower muscle mass may be a risk factor for knee pain in patients with radiographically mild knee osteoarthritis but not in those with radiographically severe osteoarthritis.

Arthroscopic vs conservative care**Comparison of Arthroscopic and Conservative Treatments for Knee Osteoarthritis: A 5-Year Retrospective Comparative Study**

Xiangzheng Su, M.D. Chunbao Li, M.D. Weixiong Liao, M.D. Jianheng Liu, M.D. ,
Hao Zhang, M.D. Ji Li, M.D. Zhongli Li, M.D.

Purpose

To compare the effectiveness of arthroscopic and conservative treatments in patients with knee osteoarthritis (KOA) with 5 years of follow-up.

Methods

Patients diagnosed with Kellgren-Lawrence grade 2 to 4 KOA who underwent arthroscopic or conservative treatment from May 2005 to May 2012 were included. The Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) total score was collected 1, 2, 3, 4, and 5 years after the initial treatment, and the number of patients who underwent total knee arthroplasty (TKA) at every time point was recorded.

Results

Three hundred eighty-two patients (168 in the conservative group and 214 in the arthroscopy group) were included. Five years after the initial treatment, 32 of the 214 patients who underwent arthroscopy (15.0%) compared with 30 of the 168 patients in the conservative treatment group (17.9%) ultimately underwent TKA, with no statistically significant difference between groups ($P = .20$). The WOMAC score was significantly lower in the arthroscopy group than in the conservative group at year 1 (24.33 ± 21.56 vs 36.43 ± 16.22 , respectively) and year 2 (26.31 ± 17.84 vs 35.41 ± 19.21 , respectively). There were no significant between-group differences at years 3, 4, and 5.

Conclusions

Compared with conservative treatment, arthroscopy provided no benefit in decreasing or delaying arthroplasty surgery. However, arthroscopy had a greater ability to relieve symptoms at 1 and 2 years. Our results suggest that arthroscopy can relieve symptoms up to 2 years without elevating the risk of arthroplasty.

Level of Evidence Level III, retrospective comparative study.

40. ANKLE SPRAINS AND INSTABILITY

Proprioceptive training

J Athl Train. 2017 Nov 15. doi: 10.4085/1062-6050-52.11.16.

Proprioceptive Training for the Prevention of Ankle Sprains: An Evidence-Based Review.

Reference: Schiftan GS, Ross LA, Hahne AJ. The effectiveness of proprioceptive training in preventing ankle sprains in sporting populations: a systematic review and meta-analysis. *J Sci Med Sport*. 2015;18(3):238-244.

CLINICAL QUESTION: Does the use of proprioceptive training as a sole intervention decrease the incidence of initial or recurrent ankle sprains in the athletic population?

DATA SOURCES: The authors completed a comprehensive literature search of MEDLINE, CINAHL, SPORTDiscus, and Physiotherapy Evidence Database (PEDro) from inception to October 2013. The reference lists of all identified articles were manually screened to obtain additional studies. The following key words were used. Phase 1 population terms were sport*, athlete*, and a combination of the two. Phase 2 intervention terms were propriocept*, balance, neuromusc* adj5 train*, and combinations thereof. Phase 3 condition terms were ankle adj5 sprain*, sprain* adj5 ankle, and combinations thereof.

STUDY SELECTION: Studies were included according to the following criteria: (1) the design was a moderate- to high-level randomized controlled trial (>4/10 on the PEDro scale), (2) the participants were physically active (regardless of previous ankle injury), (3) the intervention group received proprioceptive training only, compared with a control group that received no proprioceptive training, and (4) the rate of ankle sprains was reported as a main outcome. Search results were limited to the English language. No restrictions were placed on publication dates.

DATA EXTRACTION: Two authors independently reviewed the studies for eligibility. The quality of the pertinent articles was assessed using the PEDro scale, and data were extracted to calculate the relative risk. Data extracted were number of participants, intervention, frequency, duration, follow-up period, and injury rate.

RESULTS: Of the initial 345 studies screened, 7 were included in this review for a total of 3726 participants. Three analyses were conducted for proprioceptive training used (1) to prevent ankle sprains regardless of history (n = 3654), (2) to prevent recurrent ankle sprains (n = 1542), or (3) as the primary preventive measure for those without a history of ankle sprain (n = 946).

Regardless of a history of ankle sprain, participants had a reduction in ankle-sprain rates (relative risk [RR] = 0.65, 95% confidence interval [CI] = 0.55, 0.77; numbers needed to treat [NNT] = 17, 95% CI = 11, 33). For individuals with a history of ankle sprains, proprioception training demonstrated a reduction in repeat ankle sprains (RR = 0.64, 95% CI = 0.51, 0.81; NNT = 13, 95% CI = 7, 100). Proprioceptive training as a primary preventive measure demonstrated significant results (RR = 0.57, 95% CI = 0.34, 0.97; NNT = 33, 95% CI = 16, 1000).

CONCLUSIONS: Proprioceptive training programs were effective in reducing the incidence rates of ankle sprains in the athletic population, including those with and those without a history of ankle sprains.

44. RHUMATOID ARTHRITIS

Children more problems

Arthritis Care Res (Hoboken). 2017 Dec 11. doi: 10.1002/acr.23461.

Children born by women with rheumatoid arthritis have increased susceptibility for selected chronic diseases - a nationwide cohort study.

Jølvig LR^{1,2}, Nielsen J^{1,2}, Kesmodel US^{3,4}, Nielsen RG⁵, Beck-Nielsen SS^{6,7}, Nørgård BM^{1,2}.
Author information

Abstract

OBJECTIVE:

Fetal exposure to maternal rheumatoid arthritis (RA) might impact the long-term risk of disease in the offspring. We examined a possible association between maternal RA and 15 selected groups of chronic diseases in the offspring.

METHODS:

This nationwide cohort study was based on the Danish health registries and included data on all children born alive in Denmark from January 1st 1989 to December 31st 2013. The cohort comprised 2106 children born by women with RA (exposed), and 1 378 539 children born by women without RA (unexposed). Cox proportional hazard regression models were used, taking a large range of confounders into consideration, computing the Hazard Ratios (HR) of child- and adolescence diseases.

RESULTS:

In children being exposed to maternal RA in utero, the HR's of thyroid diseases was 2.19 (95% CI, 1.14 - 4.21), epilepsy 1.61 (95% CI, 1.16 - 2.25), and RA 2.89 (95% CI, 2.06 - 4.05). The HR's for anxiety and personality disorders and chronic lung disease including asthma were in the range of 1.15 - 1.16, but these were not statistically significant.

CONCLUSIONS:

Our results suggest that in utero exposure to maternal RA is associated with an increased risk of thyroid disease and epilepsy in childhood and adolescence, and in particular an increased risk of RA, compared to children born by mothers without RA. These important findings should encourage pediatricians and general practitioners to an increased awareness of certain chronic diseases in children being exposed to RA in utero. This article is protected by copyright. All rights reserved.

45 A. MANUAL THERAPY LUMBAR & GENERAL

Manual therapy

Mechanisms of chronic pain – key considerations for appropriate physical therapy management

Carol A. Courtney, César Fernández-de-las-Peñas & Samantha Bond
Pages 118-127 | Published online: 21 Mar 2017

<https://doi.org/10.1080/10669817.2017.1300397>

Abstract

In last decades, knowledge of nociceptive pain mechanisms has expanded rapidly. The use of quantitative sensory testing has provided evidence that peripheral and central sensitization mechanisms play a relevant role in localized and widespread chronic pain syndromes. In fact, almost any patient suffering with a chronic pain condition will demonstrate impairments in the central nervous system. In addition, it is accepted that pain is associated with different types of trigger factors including social, physiological, and psychological. This rational has provoked a change in the understanding of potential mechanisms of manual therapies, changing from a biomechanical/medical viewpoint, to a neurophysiological/nociceptive viewpoint. Therefore, interventions for patients with chronic pain should be applied based on current knowledge of nociceptive mechanisms since determining potential drivers of the sensitization process is critical for effective management. The current paper reviews mechanisms of chronic pain from a clinical and neurophysiological point of view and summarizes key messages for clinicians for proper management of individuals with chronic pain.

Pain pressure thresholds

Spinal manipulation does not affect pressure pain thresholds in the absence of neuromodulators: a randomized controlled trial

Max K Jordon , Paul F. Beattie, Sarah D'Urso & Sarah Scriven
Pages 172-181 | Published online: 12 Sep 2016

Abstract

Background: Measurement of pressure pain threshold (PPT) is a way to determine one of the many potential treatment effects of spinal manipulative therapy.

Objective: To determine how multiple spinal manipulations administered in a single-session affected PPTs at local and distal sites in asymptomatic individuals.

Methods: Participants were randomly assigned into one of three groups: Group one ($n = 18$) received a lumbar manipulation followed by a cervical manipulation. Group two ($n = 17$) received a cervical manipulation followed by a lumbar manipulation. The control group ($n = 19$) received two bouts of five minutes of rest. At baseline and after each intervention or rest period, each participant's PPTs were obtained using a handheld algometer. The PPTs were tested bilaterally over the lateral epicondyles of the humerus and over the mid-bellies of the upper trapezius, lumbar paraspinal, and the tibialis anterior muscles. This study was registered with ClinicalTrials.gov, and its Identifier is NCT02828501.

Results: Repeated-measures ANOVAs and Kruskal–Wallis tests showed no significant within- or between-group differences in PPT. Within-group effect sizes in the changes of PPT ranged from $-.48$ at the left paraspinal muscles to $.24$ at the left lateral humeral epicondyle. Statistical power to detect significant differences at α of 0.05 was calculated to be 0.94.

Conclusions: This study suggests that in young adults who do not have current or recent symptoms of spinal pain, multiple within-session treatments of cervical and lumbar spinal manipulation fail to influence PPTs. Changes in PPT that are observed in symptomatic individuals are likely to be primarily influenced by pain-related neuromodulators rather than by an isolated, mechanical effect of spinal manipulation.

45 B. MANUAL THERAPY CERVICAL**Grip strength****Effects of cervical manipulation on pain, grip force control, and upper extremity muscle activity: a randomized controlled trial**

Marcelo Anderson Bracht, Ana Carina Buogo Coan, Abdalghani Yahya  & Marcio José dos Santos

Pages 1-11 | Published online: 31 Oct 2017

Abstract

Objectives: Individuals with neck pain experience disrupted grip force control when performing manipulative tasks. Manipulative physical therapy might decrease pain and change the activity of surrounding muscles; however, its effect on upper limb motor control remains undetermined. This study aims to analyze the effects of cervical manipulation on pressure pain threshold (PPT), upper extremity muscle activity along with grip force control in individuals with neck pain.

Methods: Thirty subjects with neck pain were instructed to grasp and lift an object before and after cervical ($n = 15$) or sham ($n = 15$) manipulation. The patients' PPT, electromyographic (EMG) activity of the upper extremity/scapular muscles, and grip force control were analyzed before and after one session of manipulation.

Results: No significant differences were found in the grip force control, PPT and EMG activity variables between groups.

Discussion: These results suggest that a single session of cervical manipulation may not modify upper limb motor control, more specifically grip force control and EMG activity, in patients with cervical pain. Future studies should investigate potential changes in grip force control in patients with different features of neck pain and/or by applying long-term treatment.

48 C. MUSCLES**Muscle tears**

Arthroscopy. 2017 Dec 1. pii: S0749-8063(17)30689-8. doi: 10.1016/j.arthro.2017.06.048.

Accuracy of 3 Clinical Tests to Diagnose Proximal Hamstrings Tears With and Without Sciatic Nerve Involvement in Patients With Posterior Hip Pain.

Martin RL¹, Schröder RG², Gomez-Hoyos J³, Khoury AN², Palmer IJ², McGovern RP⁴, Martin HD⁵.

Author information

Abstract**PURPOSE:**

To determine the diagnostic accuracy of the active hamstring test at 30° (A-30) and 90° (A-90) of knee flexion, the long stride heel strike (LSHS) test, and combination of the 3 tests for individuals with hamstring tendon tears, with and without sciatic nerve involvement.

METHODS:

A retrospective review of 564 consecutive clinical records identified 42 subjects with a mean age of 50.31 ± 15 years who underwent a standard physical examination prior to magnetic resonance imaging (MRI) evaluation and diagnostic injection for posterior hip. The physical examination included the A-30, A-90, and LSHS tests. Sensitivity, specificity, positive likelihood ratio, negative likelihood ratio, and diagnostic odds ratio were calculated to determine the diagnostic accuracy of these 3 tests.

RESULTS:

Forty-two subjects (female = 32 and male = 10) with a mean age of 50.31 years (range 15-77, ± SD 14.52) met the inclusion criteria and were included in the review. Based on MRI and/or injection, 64.28% (27/42) of subjects were diagnosed with hamstring tear. Fourteen (51.85%) presented with sciatic nerve involvement. The sensitivity, specificity, positive likelihood ratio, negative likelihood ratio, and diagnostic odds ratio for each test were as follows: A-30 knee flexion: 0.73, 0.97, 23.43, 0.28, and 84.73; A-90 knee flexion: 0.62, 0.97, 20.00, 0.39, and 51.67; LSHS: 0.55, 0.73, 2.08, 0.61, and 3.44. The most accurate findings were obtained when the results of the A-30 and A-90 were combined, with sensitivity, specificity, positive likelihood ratio, negative likelihood ratio, and diagnostic odds ratio of 0.84, 0.97, 26.86, 0.17, and 161.89, respectively.

CONCLUSION:

The combination of the active hamstring A-30 and A-90 tests proved to be a highly accurate and valuable tool to diagnose proximal hamstring tendons tears with or without sciatic nerve involvement in subjects presenting with posterior hip pain.

53. CORE**Multifidus**

Neuromodulation. 2017 Dec 12. doi: 10.1111/ner.12738.

Muscle Control and Non-specific Chronic Low Back Pain.

Russo M¹, Deckers K², Eldabe S³, Kiesel K⁴, Gilligan C⁵, Viececi J⁶, Crosby P⁷.

[Author information](#)

Abstract**OBJECTIVES:**

Chronic low back pain (CLBP) is the most prevalent of the painful musculoskeletal conditions. CLBP is a heterogeneous condition with many causes and diagnoses, but there are few established therapies with strong evidence of effectiveness (or cost effectiveness). CLBP for which it is not possible to identify any specific cause is often referred to as non-specific chronic LBP (NSCLBP). One type of NSCLBP is continuing and recurrent primarily nociceptive CLBP due to vertebral joint overload subsequent to functional instability of the lumbar spine. This condition may occur due to disruption of the motor control system to the key stabilizing muscles in the lumbar spine, particularly the lumbar multifidus muscle (MF).

METHODS:

This review presents the evidence for MF involvement in CLBP, mechanisms of action of disruption of control of the MF, and options for restoring control of the MF as a treatment for NSCLBP.

RESULTS:

Imaging assessment of motor control dysfunction of the MF in individual patients is fraught with difficulty. MRI or ultrasound imaging techniques, while reliable, have limited diagnostic or predictive utility. For some patients, restoration of motor control to the MF with specific exercises can be effective, but population results are not persuasive since most patients are unable to voluntarily contract the MF and may be inhibited from doing so due to arthrogenic muscle inhibition.

CONCLUSIONS:

Targeting MF control with restorative neurostimulation promises a new treatment option.

56. ATHLETICS**Injury risk**

Scand J Med Sci Sports. 2017 Dec;27(12):2059-2069. doi: 10.1111/sms.12855. Epub 2017 Mar 29.

Multiple factors explain injury risk in adolescent elite athletes: Applying a biopsychosocial perspective.

von Rosen P¹, Frohm A^{1,2}, Kottorp A^{1,3}, Fridén C^{1,4}, Heijne A¹.

Author information

Abstract

Many risk factors for injury are presented in the literature, few of those are however consistent and the majority is associated with adult and not adolescent elite athletes.

The aim was to identify risk factors for injury in adolescent elite athletes, by applying a biopsychosocial approach. A total of 496 adolescent elite athletes (age range 15-19), participating in 16 different sports, were monitored repeatedly over 52 weeks using a valid questionnaire about injuries, training exposure, sleep, stress, nutrition, and competence-based self-esteem. Univariate and multiple Cox regression analyses were used to calculate hazard ratios (HR) for risk factors for first reported injury. The main finding was that an increase in training load, training intensity, and at the same time decreasing the sleep volume resulted in a higher risk for injury compared to no change in these variables (HR 2.25, 95% CI, 1.46-3.45, P<.01), which was the strongest risk factor identified. In addition, an increase by one score of competence-based self-esteem increased the hazard for injury with 1.02 (HR 95% CI, 1.00-1.04, P=.01).

Based on the multiple Cox regression analysis, an athlete having the identified risk factors (Risk Index, competence-based self-esteem), with an average competence-based self-esteem score, had more than a threefold increased risk for injury (HR 3.35), compared to an athlete with a low competence-based self-esteem and no change in sleep or training volume. Our findings confirm injury occurrence as a result of multiple risk factors interacting in complex ways.

Recognizing cardiac arrest

Netherlands Heart Journal
pp 1–5| Cite as

Early recognition of sudden cardiac arrest in athletes during sports activity

- N. M. Panhuyzen H. J. Wellens J. J. Piek

-

Introduction

Sudden cardiac arrest (SCA) in athletes is an unexpected life-threatening event, which is often not recognised early and cardiopulmonary resuscitation (CPR) is not always initiated immediately. We describe key features to rapidly recognise non-traumatic SCA in athletes during sports activity.

Methods

We reviewed videos and images of athletes suffering from non-traumatic SCA during sports activity. We searched Google images, Google videos and YouTube.com using the keywords ‘sudden cardiac death athlete’ and ‘resuscitation athlete’. We analysed (1) the athlete’s performance before syncope, (2) the athlete’s performance at the start of syncope, (3) the position of the body, and (4) the athlete’s facial expressions before CPR. We analysed our data by describing these four features to answer our research question.

Results

We analysed the sequence of events in six well-known soccer players in whom a camera-witnessed non-traumatic SCA occurred during their athletic activity. All six athletes showed no changes before syncope. Four became unstable while standing and unexpectedly collapsed falling on their back. Two suddenly ‘dropped dead’ and fell face down. All six had their eyes wide open with a fixed gaze and fixed pupils.

Conclusions

Sudden unexpected loss of consciousness in an athlete in action and a fixed gaze eye position are key features of SCA. Immediate cardiac massage should follow. The described features to immediately recognise SCA in athletes during sports activity should be taught to everyone involved in athletic activity leading to earlier recognition of SCA followed by earlier CPR.

57. GAIT

Walking and LBP

Disabil Rehabil. 2017 Dec 5:1-11. doi: 10.1080/09638288.2017.1410730.

The effectiveness of walking versus exercise on pain and function in chronic low back pain: a systematic review and meta-analysis of randomized trials.

Vanti C¹, Andreatta S², Borghi S¹, Guccione AA³, Pillastrini P¹, Bertozzi L⁴.
Author information

Abstract

OBJECTIVE:

Walking is commonly recommended to relieve pain and improve function in chronic low back pain. The purpose of this study was to conduct a systematic review and meta-analysis of randomized controlled trials concerning the effectiveness of walking interventions compared to other physical exercise on pain, disability, quality of life and fear-avoidance, in chronic low back pain.

METHODS:

Randomized controlled trials investigating the effects of walking alone compared to exercise and to exercise with added walking on adults with chronic low back pain were identified using the MEDLINE, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Physiotherapy Evidence Database (PEDro), Cochrane Central Register of Controlled Trials (CENTRAL), PsychINFO, and SPORT DiscusTM databases. Two reviewers independently selected the studies and extracted the results. Study quality was assessed using the PEDro scale and the clinical relevance of each outcome measure was evaluated.

RESULTS:

Meta-analysis of five randomized controlled trials meeting inclusion criteria was performed. The effectiveness of walking and exercise at short-, mid-, and long-term follow-ups appeared statistically similar. Adding walking to exercise did not induce any further statistical improvement, at short-term.

CONCLUSIONS:

Pain, disability, quality of life and fear-avoidance similarly improve by walking or exercise in chronic low back pain. Walking may be considered as an alternative to other physical activity. Further studies with larger samples, different walking dosages, and different walking types should be conducted. Implications for Rehabilitation Walking is commonly recommended as an activity in chronic low back pain. Pain, disability, and fear-avoidance similarly improve by walking or exercise. Adding walking to exercise does not induce greater improvement in the short-term. Walking may be a less-expensive alternative to physical exercise in chronic low back pain.

59. PAIN**Endocannabinoid gene expression**

Clin J Pain. 2018 Jan;34(1):8-14. doi: 10.1097/AJP.0000000000000508.

Contribution of Endocannabinoid Gene Expression and Genotype on Low Back Pain Susceptibility and Chronicity.

Ramesh D¹, D'Agata A¹, Starkweather AR^{1,2}, Young EE^{1,2,3}.

Author information

Abstract

A major research emphasis has been focused on defining the molecular changes that occur from acute to chronic pain to identify potential therapeutic targets for chronic pain. As the endocannabinoid system is dynamically involved in pain signaling, a plausible mechanism that may contribute to chronic pain vulnerability involves alterations in the amount of circulating endocannabinoids. Therefore, this study sought to examine cannabinoid type 1 (CNR1), type 2 (CNR2) receptors, fatty acid amide hydrolase (FAAH), and the vanilloid receptor (transient receptor potential cation channel subfamily V member 1 [TRPV1]) gene expression profiles among individuals with acute and chronic low back pain (cLBP) at their baseline visit. We also assessed associations among selected single nucleotide polymorphisms (SNPs) of FAAH and CNR2 and measures of somatosensory function and self-report pain measures. Using a previously established quantitative sensory testing protocol, we comprehensively assessed somatosensory parameters among 42 acute LBP, 42 cLBP, and 20 pain-free participants. Samples of whole blood were drawn to examine mRNA expression and isolate genomic DNA for genotyping. CNR2 mRNA was significantly upregulated in all LBP patients compared with controls. However, FAAH mRNA and TRPV1 mRNA were significantly upregulated in cLBP compared with controls. A significant association was observed between FAAH SNP genotype and self-report pain measures, mechanical and cold pain sensitivity among LBP participants. cLBP participants showed increased FAAH and TRPV1 mRNA expression compared with acute LBP patients and controls. Further research to characterize pain-associated somatosensory changes in the context of altered mRNA expression levels and SNP associations may provide insight on the molecular underpinnings of maladaptive chronic pain.

Attentional avoidance in PTSD

Clin J Pain. 2018 Jan;34(1):22-29. doi: 10.1097/AJP.0000000000000505.

Attentional Avoidance is Associated With Increased Pain Sensitivity in Patients With Chronic Posttraumatic Pain and Comorbid Posttraumatic Stress.

Harvold M¹, MacLeod C², Vaegter HB^{3,4}.
Author information

Abstract

OBJECTIVES:

Posttraumatic stress disorder (PTSD) is common in chronic posttraumatic pain. Theoretical models suggest that attentional biases (AB) contribute to the development and maintenance of chronic pain and PTSD; however, the influence of AB on clinical and heat pain sensitivity in chronic posttraumatic pain patients is unknown. This study investigated AB for linguistic pain-related stimuli and trauma-related stimuli, and clinical and thermal sensitivity in patients with chronic posttraumatic pain with and without PTSD.

MATERIALS AND METHODS:

In total, 34 patients with chronic posttraumatic cervical pain performed the visual attentional probe task assessing patterns of selective attentional responding to trauma cues and to pain cues. The task used short (500 ms) and long (1250 ms) stimulus exposure durations to ensure sensitivity to both the orienting and maintenance of attention. Heat pain threshold was assessed at the nonpainful hand. Clinical pain intensity, psychological distress (anxiety, depression, and disability), and PTSD symptomatology were assessed with questionnaires.

RESULTS:

The Pain/PTSD group (N=14) demonstrated increased clinical and heat pain sensitivity as well as psychological distress compared with the Pain/No-PTSD group (N=20; $P<0.05$). AB scores were significantly different between groups ($P=0.04$). Irrespective of stimulus exposure duration, the Pain/PTSD group demonstrated attentional bias away from trauma and pain cues (avoidance), whereas the Pain/No-PTSD group demonstrated attentional bias toward pain cues (vigilance). Attentional avoidance of pain cues was associated with increased pain intensity and heat pain sensitivity ($P<0.02$).

DISCUSSION:

These results suggest that attentional avoidance is associated with increased chronic posttraumatic pain. The causal contribution of attentional avoidance to pain outcomes remains unclear.

61. FIBROMYALGIA

Type of exercise

Eur J Phys Rehabil Med. 2017 Nov 29. doi: 10.23736/S1973-9087.17.04876-6.

Muscle stretching exercises and resistance training in fibromyalgia: which is better? A three-arm randomized controlled trial.

Assumpção A¹, Matsutani LA^{1,2}, Yuan SL¹, Santo AS¹, Sauer J¹, Mango P¹, Marques AP³.
Author information

Abstract

BACKGROUND: Exercise therapy is an effective component of fibromyalgia (FM) treatment. However, it is important to know the effects and specificities of the different types of exercise: muscle stretching and resistance training.

AIM: To verify and compare the effectiveness of muscle stretching exercise and resistance training for symptoms and quality of life in FM patients.

DESIGN: Randomized controlled trial.

SETTING: Physical therapy service, FM outpatient clinic.

POPULATION: Forty-four women with FM (79 screened).

METHODS: Patients were randomly allocated into a stretching group (n=14), resistance group (n=16), and control group (n=14). Pain was assessed using the visual analog scale, pain threshold using a Fischer dolorimeter, FM symptoms using the Fibromyalgia Impact Questionnaire (FIQ), and quality of life using the Medical Outcomes Study 36-item Short- Form Health Survey (SF-36). The three intervention groups continued with usual medical treatment. In addition, the stretching and resistance groups performed two different exercise programs twice a week for 12 weeks.

RESULTS: After treatment, the stretching group showed the highest SF-36 physical functioning score (p=0.01) and the lowest bodily pain score (p=0.01). The resistance group had the lowest FIQ depression score (p=0.02). The control group had the highest score for FIQ morning tiredness and stiffness, and the lowest score for SF-36 vitality. In clinical analyses, the stretching group had significant improvement in quality of life for all SF-36 domains, and the resistance group had significant improvement in FM symptoms and in quality of life for SF-36 domains of physical functioning, vitality, social function, emotional role, and mental health.

CONCLUSIONS: Muscle stretching exercise was the most effective modality in improving quality of life, especially with regard to physical functioning and pain, and resistance training was the most effective modality in reducing depression.

CLINICAL REHABILITATION IMPACT: The trial included a control group and two intervention groups, both of which received exercise programs created specifically for patients with FM. In clinical practice, we suggest including both of these modalities in an exercise therapy program for FM.

Motivational interviewing

Clin J Pain. 2018 Jan;34(1):76-81. doi: 10.1097/AJP.0000000000000500.

Obesity Moderates the Effects of Motivational Interviewing Treatment Outcomes in Fibromyalgia.

Kaleth AS¹, Slaven JE², Ang DC³.
Author information

Abstract

OBJECTIVE:

Obesity is a common comorbid condition among patients with fibromyalgia (FM). Our objective was to assess if obesity moderates the treatment benefits of exercise-based motivational interviewing (MI) for FM.

MATERIALS AND METHODS:

This is a secondary data analysis of a completed clinical trial of 198 FM patients who were randomized to receive either MI or attention control (AC). Using body mass index (BMI) to divide participants into obese (BMI \geq 30 kg/m) and nonobese (BMI $<$ 30 kg m) groups, mixed linear models were used to determine interaction between treatment arms and obesity status with regards to the primary outcome of global FM symptom severity (Fibromyalgia Impact Questionnaire, FIQ). Secondary measures included pain intensity (Brief Pain Inventory), 6-Minute Walk Test, and self-reported physical activity (Community Health Activities Model Program for Seniors).

RESULTS:

Of the 198 participants, 91 (46%) were nonobese and 107 (54%) were obese. On global FM symptom severity (FIQ), the interaction between treatment arms and obesity status was significant (P=0.02). In the nonobese group, MI was associated with a greater improvement in FIQ than AC. In the obese group, MI participants reported less improvement in FIQ compared with AC. The interaction analysis was also significant for Brief Pain Inventory pain intensity (P=0.01), but not for the walk test and self-reported physical activity.

DISCUSSION:

This is the first study to show that obesity negatively affects the treatment efficacy of MI in patients with FM. Our findings suggest that exercise-based MI may be more effective if initiated after weight loss is achieved.

62 A. NUTRITION/VITAMINS**Food addiction**

Appetite. 2017 Nov 1;121:186-197. doi: 10.1016/j.appet.2017.10.038.

Food and beverage consumption and food addiction among women in the Nurses' Health Studies.

Lemeshow AR¹, Rimm EB², Hasin DS³, Gearhardt AN⁴, Flint AJ⁵, Field AE⁶, Genkinger JM⁷.

Author information**Abstract****BACKGROUND AND AIMS:**

Previous studies have not addressed a fundamental component of a food addiction disorder: the compulsive relationship between eating and potentially positively reinforcing foods. We aimed to evaluate the association between food consumption and food addiction.

METHODS:

We conducted cross-sectional analyses merging data from the Nurses' Health Study (n = 58,625) and Nurses' Health Study II (n = 65,063), two prospective cohort studies of female nurses in the United States. Diet was assessed in 2006-2007 using a food frequency questionnaire, and food addiction was assessed in 2008-2009 using the Modified Yale Food Addiction Scale.

RESULTS:

The prevalence of food addiction was 5.4%. The odds of food addiction were strongest among nurses consuming 5+ servings/week (compared with <1 serving/month) of hamburgers (multivariable odds ratio (MVOR) 4.08; 95% CI, 2.66-6.25), French fries (MVOR, 2.37; 95% CI, 1.59-3.51) and pizza (MVOR, 2.49; 95% CI, 1.67-3.69). Consumption of red/processed meat, low/no fat snacks/desserts, and low calorie beverages was positively associated with food addiction, while consumption of refined grains, sugar-sweetened beverages and fruits, vegetables, and legumes was inversely associated with food addiction.

CONCLUSIONS:

This epidemiologic study was the largest to examine food consumption and food addiction. Food addiction was positively associated with consumption of many hypothesized positively reinforcing foods that include a combination of carbohydrates and fats such as snacks, "fast foods," and candy bars. However, it was inversely or not associated with certain sweet foods, refined grains, and sugar-sweetened beverages, which is consistent with literature suggesting that carbohydrates (without other ingredients) are less associated with food addiction. Longitudinal analyses will help untangle the temporal order between food consumption and food addiction, as some relationships in our analyses were difficult to interpret due to the cross-sectional design.

Coffee consumption and hypertension

Eur J Nutr. 2017 Dec 8. doi: 10.1007/s00394-017-1591-z.

Coffee consumption and risk of hypertension: a dose-response meta-analysis of prospective studies.

D'Elia L¹, La Fata E², Galletti F², Scalfi L³, Strazzullo P².

Author information

Abstract**PURPOSE:**

Recently, a large prospective study provided additional information concerning the debated possible association between habitual coffee consumption and risk of hypertension (HPT). Therefore, we updated the state of knowledge on this issue by carrying out a comprehensive new systematic review of the literature and a meta-analysis of the available relevant studies.

METHODS:

We performed a systematic search for prospective studies on general population, published without language restrictions (1966-August 2017). A random-effects dose-response meta-analysis was conducted to combine study specific relative risks (RRs) and 95% confidence intervals. Potential non-linear relation was investigated using restricted cubic splines.

RESULTS:

Four studies (196,256 participants, 41,184 diagnosis of HPT) met the inclusion criteria. Coffee intake was assessed by dietary questionnaire. Dose-response meta-analysis showed a non-linear relationship between coffee consumption and risk of HPT (p for non-linearity < 0.001). Whereas the habitual drinking of one or two cups of coffee per day, compared with non-drinking, was not associated with risk of HPT, a significantly protective effect of coffee consumption was found starting from the consumption of three cups of coffee per day (RR = 0.97, 95% CI = 0.94 to 0.99), and was confirmed for greater consumption.

CONCLUSIONS:

The results of this analysis indicate that habitual moderate coffee intake is not associated with higher risk of HPT in the general population and that in fact a non-linear inverse dose-response relationship occurs between coffee consumption and risk of HPT.