

1. LUMBAR SPINE

Fatty infiltrate

Eur Spine J. 2017 Jul 11. doi: 10.1007/s00586-017-5212-6.

Change in fatty infiltration of lumbar multifidus, erector spinae, and psoas muscles in asymptomatic adults of Asian or Caucasian ethnicities.

Crawford RJ^{1,2}, Elliott JM^{3,4,5}, Volken T³.

Author information

Abstract

PURPOSE:

Fatty infiltration (FI) is a feature of degenerating muscle that predominates in the low lumbar spine, associates with pain, and is confounded by age, spinal degeneration, and curvature. We determined rates for decline of lumbar muscle quality according to ethnicity, muscle, and spinal level in asymptomatic subjects.

METHODS:

Cross-sectional simulation study assessing aggregated data; 650 Asians aged 20-89 years versus 80 Caucasians aged 20-62 years. Change in lumbar multifidus, erector spinae (ES), and psoas fat content were computed using synthetic data and Monte Carlo simulations. General linear regression models and multivariate adaptive regression splines enabled estimation of yearly decline rates [with 95% confidence intervals (CI)].

RESULTS:

ES at L1-5 (total) shows steeply reduced density (rate; CI) for Asians in older (>53.3 years) adulthood (-0.32; -0.27 to -0.36/year). For Asians, multifidus (-0.18; -0.15 to -0.20/year) and psoas (-0.04; -0.03 to -0.06/year) also decline, while ES in younger ≤53.3 years) adults does not (0.06; 0.01-0.12/year). Caucasian multifidus declines (increasing FI % rate; CI) insignificantly faster (L1-5; 0.23; 0.10-0.36%/year) than ES (0.13; 0.04-0.22%/year). Multifidus decline does not differ between ethnicities. ES in older Asians generally declines fastest across ethnicities and muscles, and particularly in the low lumbar levels. Low lumbar levels show higher rates of decline in Asians, with mixed level-dependencies apparent in Caucasians.

CONCLUSIONS:

Decline in lumbar muscle composition may differ between ethnicities and muscles. ES and low lumbar levels appear increasingly susceptible in Asians. Longitudinal studies examining rate of change to muscle composition may provide distinction between spinal conditions.

2. LBP

Beliefs and LBP

Both positive and negative beliefs are important in patients with spine pain: findings from the oioc registry

Maria M. Wertli Ulrike Held Angela Lis Marco Campello Sherri Weiser

DOI: <http://dx.doi.org/10.1016/j.spinee.2017.07.166>

Background Context Negative beliefs are known to influence treatment outcome in patients with spine pain (SP). The impact of positive beliefs is less clear.

Purpose Assess the influence of positive and negative beliefs on baseline and treatment responses in patients with SP.

Study Design/Setting

Retrospective cross-sectional and longitudinal analysis of prospectively collected data of outpatient physical therapy patients with SP. Questionnaires administered before and during treatment included the STarT Back distress scale (negative beliefs), and expectation and self-efficacy questions (positive beliefs).

Patient Sample Patients with SP with a baseline assessment and follow-up assessment.

Outcome Measure Perceived disability (oswestry disability index (ODI) or neck disability index (NDI). A clinical meaningful change (MCID) was defined as decrease in ODI / NDI of $\geq 30\%$.

Methods We used the Akaike Information Criterion (AIC) from the first imputed dataset of the prediction model to select predictor variables. Prediction models were fitted to the outcome variables. This study was not funded and the authors have no conflict of interest to declare.

Results

In the cross-sectional analysis 1,695 low back pain (LBP) episodes and 487 neck pain (NP) episodes were analyzed. SBST-distress was positively associated with perceived disability in both LBP and NP; LBP (Beta 2.31, 95% CI 1.75 – 2.88) and NP (Beta 2.57, 95% CI 1.47 – 3.67). Lower self-efficacy was negatively associated with more perceived disability for LBP (Beta 0.50, 0.29 – 0.72) but not for NP while less positive expectations was associated with more perceived disability in NP (Beta 0.57, 0.02 – 1.12) but not in LBP. In the longitudinal analysis 607 LBP episodes (36%) and 176 (36%) NP episodes were included. SBST-distress did not predict treatment outcome in spine patients. In LBP, patients with a lower positive expectation were less likely to experience a MCID in perceived disability (OR per point increase 0.89, 95% CI 0.83 – 0.96) and there was a similar trend in NP (0.90, 0.79 – 1.03). In patients with LBP, lower self-efficacy at baseline was associated with a higher likelihood that an MCID was achieved (OR per point increase 1.09, 1.01 – 1.19). In NP, self-efficacy was not included in the final model.

Conclusions

Our study demonstrates that both negative and positive beliefs are associated with perceptions of disability however, in this study only positive beliefs were associated with treatment outcome.

Risk factors for sciatica hospitalization

Lifestyle risk factors increase the risk of hospitalization for sciatica: Findings of four prospective cohort studies

American Journal of Medicine

Shiri R, et al.

S

This research strived to gauge the effects of lifestyle risk factors on the risk of hospitalization for sciatica. In addition, it ascertained whether overweight or obesity altered the effect of leisure-time physical activity on hospitalization for sciatica. The findings brought to light the fact that smoking and obesity increase the risk of hospitalization for sciatica. On the other hand, walking or cycling to work safeguarded against hospitalization for sciatica. Walking and cycling could be suggested for the prevention of sciatica in the general population.

Methods

- This research comprised of four Finnish prospective cohort studies (Health 2000 Survey, Mobile Clinic Survey, Helsinki Health Study and Young Finns Study).
- It included 34,589 members and 1259 hospitalizations for sciatica during 12 to 30 years follow-up.
- Sciatica was based on hospital discharge register data.
- A random-effects individual participant data meta-analysis was carried out.

Results

- The current smoking at baseline increased the risk of subsequent hospitalization for sciatica by 33% (CI 13-56%), after adjustment for confounding factors.
- On the other hand, past smokers were not found to be at increased risk.
- Obesity defined by body mass index raised the risk of hospitalization for sciatica by 36% (CI 7-74%).
- It was noted that the abdominal obesity defined by waist circumference increased the risk by 41% (CI 3-93%).
- Walking or cycling to work lowered the risk of hospitalization for sciatica by 33% (CI 4-53%), and the effect was independent of body weight and other leisure activities.
- However, other types of leisure activities did not exhibit a statistically significant effect.

5. SURGERY

Second surgical factors

Spine (Phila Pa 1976). 2017 Jul 15;42(14):1106-1114. doi: 10.1097/BRS.0000000000002088.

Reoperation for Recurrent Intervertebral Disc Herniation in the Spine Patient Outcomes Research Trial: Analysis of Rate, Risk Factors, and Outcome.

Abdu RW¹, Abdu WA, Pearson AM, Zhao W, Lurie JD, Weinstein JN.

Author information

Abstract

STUDY DESIGN:

This study was a post-hoc subgroup analysis of prospectively collected data in the Spine Patient Outcomes Research Trial (SPORT).

OBJECTIVE:

The aim of this study was to determine the risk factors for and to compare the outcomes of patients undergoing revision disc excision surgery in SPORT.

SUMMARY OF BACKGROUND DATA:

Risk factors for reherniation and outcomes after revision surgery have not been well-studied. This information is critical for proper patient counseling and decision-making.

METHODS:

Patients who underwent primary discectomy in the SPORT intervertebral disc herniation cohort were analyzed to determine risk factors for undergoing revision surgery. Risk factors for undergoing revision surgery for reherniation were evaluated using univariate and multivariate analysis. Primary outcome measures consisted of Oswestry Disability Index (ODI), the Sciatica Bothersomeness index (SBI), and the Short Form 36 (SF-36) at 6 weeks, 3 months, 6 months, and yearly to 4 years.

RESULTS:

Of 810 surgical patients, 74 (9.1%) received revision surgery for reherniation. Risk factors for reherniation included: younger age (hazard ratio [HR] 0.96 [0.94-0.99]), lack of a sensory deficit (HR 0.61 [0.37-0.99]) lack of motor deficit (HR 0.54 [0.32-0.91]), and higher baseline ODI score (HR 1.02 [1.01-1.03]). The time-adjusted mean improvement from baseline to 4 years was less for the reherniation group on all outcome measures (Bodily Pain Index [BP] 39.5 vs. 44.9, $P=0.001$; Physical Function Index [PF] 37.1 vs. 44.5, $P<0.001$; ODI 33.9 vs. 38.3, $P<0.001$; SBI 8.7 vs. 10.5, $P<0.001$). At 4 years, only SBI (-9 vs. -11.4, $P=0.002$) was significantly lower in the reherniation group.

CONCLUSION:

Younger patients with higher baseline disability without neurological deficit are at increased risk of undergoing revision surgery for reherniation. Those considering revision surgery for reherniation will likely improve significantly following surgery, but possibly not as much as with primary discectomy.

LEVEL OF EVIDENCE: 3.

PRP helps fusions

Spine J. 2017 Jul 20. pii: S1529-9430(17)30488-6. doi: 10.1016/j.spinee.2017.07.167.

Platelet-rich plasma enhances bone union in posterolateral lumbar fusion: a prospective randomized controlled trial.

Kubota G¹, Kamoda H², Orita S³, Yamauchi K³, Sakuma Y⁴, Oikawa Y⁵, Inage K³, Sainoh T⁶, Sato J⁷, Ito M⁸, Yamashita M⁹, Nakamura J³, Suzuki T¹⁰, Takahashi K³, Ohtori S¹¹.

Author information

Abstract

BACKGROUND CONTEXT:

Platelet-rich plasma (PRP) accelerates bone union in vivo in a rodent model of spinal fusion surgery. However, PRP's effect on bone union after spinal surgery remains unclear.

PURPOSE:

To evaluate the efficacy of PRP after posterolateral lumbar fusion (PLF) surgery.

STUDY DESIGN/SETTING:

Single-center prospective randomized controlled clinical trial with 2-year follow-up.

PATIENT SAMPLE:

Total 62 patients (31 patients in PRP group or 31 patients in control groups) OUTCOME MEASURES: Bone fusion rate, area of bone fusion mass, duration for bone fusion, and clinical score using visual analog scale (VAS).

METHODS:

We randomized 62 patients who underwent one- or two-level instrumented PLF for lumbar degenerative spondylosis with instability to either PRP (31 patients) or control (31 patients) groups. PRP-treated patients underwent surgery using an autograft bone chip (local bone) and PRP was prepared from patient blood samples immediately before surgery; patients from the control group underwent PLF without PRP treatment. We assessed platelet counts and growth factor concentrations in PRP prepared immediately before surgery. Duration for bone union, postoperative bone fusion rate, and area of fusion mass were assessed using plain radiography every 3 months after surgery and by computed tomography (CT) at 12 or 24 months. The duration for bone fusion, and clinical scores for low back pain, leg pain, and leg numbness before, and 3, 6, 12, and 24 months after surgery were evaluated using a VAS.

RESULTS:

Data from 50 patients with complete data were included. Bone union rate at final follow-up was significantly higher in the PRP group (94%) than controls (74%) ($P = 0.002$). Area of fusion mass was significantly higher in the PRP group (572 mm^2) than controls (367 mm^2) ($P = 0.02$). The mean period necessary for union was 7.8 months in the PRP group and 9.8 months in controls ($P = 0.013$). In the PRP, platelet count was 7.7 times higher and growth factor concentrations were 50 times higher than found in plasma ($P < 0.05$). There was no significant difference in low back pain, leg pain, and leg numbness in either group at any time evaluated ($P > 0.05$).

CONCLUSIONS:

Patients treated with PRP showed a higher fusion rate, greater fusion mass, and more rapid bone union after spinal fusion surgery than patients not treated with PRP.

7. PELVIC ORGANS/WOMAN'S HEALTH

Preterms pain

Effects of covering the eyes versus playing intrauterine sounds on premature infants' pain and physiological parameters during venipuncture

Journal of Pediatric Nursing

Alemdar DK, et al.

sponsor

This trial was conducted to identify the effect of covering the eyes and playing the intrauterine ambient sounds on premature infants' pain and physiological parameters during venipuncture. Investigations suggested that the effect of covering the eyes and playing the intrauterine ambient sounds in preterm infants was probably simple, safe, and supportive stimuli that facilitate positive effects during painful procedures.

Methods

- This was a randomized controlled trial.
- In this trial, 94 preterm infants were randomly divided into 3 groups: intrauterine sounds (n = 32), covered eyes (n = 32), and control (n = 30) groups.
- Data were collected on the Preterm Infant Information Form, Preterm Infant Follow-up Form, and Neonatal Infant Pain Scale (NIPS).

Results

- In investigations, a significant difference was found between the intervention and control groups' NIPS score after venipuncture, which was primarily due to covered eyes' group.
- Between the intervention and control groups' NIPS score, no significant difference was found during venipuncture.
- Moreover, no significant difference was found between the intervention and control groups of infants physiological parameters before, during, and after venipuncture.
- Evidence suggested that the practice of covering preterm infants' eyes during venipuncture positively affected their pain scores after venipuncture.

Caffeine intake at 15 weeks affects fetus brain development

Maternal caffeine consumption during pregnancy and behavioral disorders in 11-year-old offspring: A Danish National Birth Cohort Study

The Journal of Pediatrics

Mikkelsen SH, et al.

This study was carried out to investigate the association between maternal caffeine consumption from coffee and tea during pregnancy and offspring behavioral disorders. Findings suggested that high maternal caffeine consumption from coffee and tea at 15 weeks of gestation was associated with behavioral disorders in 11-year-old offspring. It was hypothesized that caffeine exposure might affect the fetal brain and program for behavioral disorders later in life. The fetal brain appeared to be more sensitive to caffeine exposure at 15 weeks of pregnancy compared with 30 weeks of gestation.

Methods

- The physicians examined 47 491 children enrolled in the Danish National Birth Cohort between 1996 and 2002.
- At 15 and 30 weeks of gestation, data on maternal coffee and tea consumption was accumulated.
- When the child was 11 years old, the Strength and Difficulties Questionnaire was filled in by children, parents, and teachers.
- They examined risk ratios (RRs) for offspring behavioral disorders.

Results

- At 15 weeks of gestation 3% and 4% of the pregnant women consumed ≥ 8 cups/d of coffee or tea, respectively.
- Investigations suggested that maternal coffee consumption ≥ 8 cups/d at 15 weeks of gestation was associated with increased risk of hyperactivity-inattention disorder (RR 1.47; 95% CI 1.18–1.83), conduct-oppositional disorders (RR 1.22; 95% CI 1.01–1.48), and any psychiatric disorder (RR 1.23; 95% CI 1.08–1.40).
- Maternal tea consumption ≥ 8 cups/d at 15 weeks of gestation was associated with increased risk of anxiety-depressive disorders (RR 1.28; 95% CI 1.09–1.52) and any psychiatric disorder (RR 1.24; 95% CI 1.11–1.40).
- An increased risk of hyperactivity-inattention disorder was observed with increasing daily caffeine consumption at 15 weeks of gestation.

Periodontal problems and male infertility

J Clin Periodontol. 2017 Jul 26. doi: 10.1111/jcpe.12785.

Idiopathic male infertility related to periodontal and caries status.

Práger N¹, Pásztor N², Várnagy Á³, Kozinszky Z⁴, Baráth Z¹, Gorzó I⁵, Radnai M⁶.

Author information**Abstract****OBJECTIVES:**

The present study was undertaken to evaluate the possible correlation between the periodontal and dental status and sperm pathology in idiopathic male infertility.

METHODS:

The periodontal and caries status and semen quality of 199 men presented with unexplained male infertility were examined. Periodontal and dental factors were analyzed by sperm pathology categories.

RESULTS:

106 men had normal sperm parameters, whereas 93 men had some type of spermpathology; 27.95% had oligozoospermia, 23.65% asthenozoospermia, 16.12% cryptozoospermia, 32.25% combined oligo-asthenozoospermia. Poor periodontal status was found in about half of the study group (45.7%). The DMFT index was not a significantly higher in any of the spermpathology groups. The odds of calculus, bleeding on probing (BOP) and BOP at $\geq 50\%$ of the teeth was significantly higher in the combined group (AOR=1.04, AOR=1.13, AOR=4.92, respectively) in multivariate analyses compared to those in the normozoospermia group. Gingival bleeding in the history and urban residency were the only predictors for pathospermia shown by the logistic regression model (AORs were 1.82 and 2.26, respectively).

CONCLUSIONS:

Some features of poor periodontal status, as gingival bleeding in the history, presence of calculus and bleeding on probing, were associated with oligo+asthenozoospermia in men with idiopathic infertility. This article is protected by copyright. All rights reserved.

Pelvic denervation

Curr Opin Obstet Gynecol. 2017 Aug;29(4):225-230. doi: 10.1097/GCO.0000000000000379.

Pelvic denervation procedures for dysmenorrhea.

Ramirez C¹, Donnellan N.

Author information

Abstract

PURPOSE OF REVIEW:

Chronic pelvic pain and dysmenorrhea are common conditions affecting reproductive-age women. Surgical pelvic denervation procedures may be a treatment option for women with midline dysmenorrhea, in which medical management is declined by the patient, ineffective at managing symptoms, or medically contraindicated. This review describes the surgical techniques and complications associated with pelvic denervation procedures as well as the current evidence for these procedures in women with primary dysmenorrhea and dysmenorrhea secondary to endometriosis.

RECENT FINDINGS:

Presacral neurectomy is the preferred pelvic denervation procedure in patients with primary dysmenorrhea and midline chronic pelvic pain associated with endometriosis. In patients with endometriosis presacral neurectomy is a useful adjunct to excision or ablation of all endometrial lesions to improve postoperative pain relief. There is no additional patient benefit of performing combined presacral neurectomy and uterine nerve ablation procedures.

SUMMARY:

Pelvic denervation procedures can be performed safely and quickly with a low risk of complication if the surgeon is knowledgeable and skilled in operating in the presacral space. Patients should be adequately counseled on expected success rates and potential complications associated with pelvic denervation procedures.

Pelvic pain

Curr Opin Obstet Gynecol. 2017 Aug;29(4):231-239. doi: 10.1097/GCO.0000000000000376.

The role of nonpharmacologic therapies in management of chronic pelvic pain: what to do when surgery fails.

Till SR¹, Wahl HN, As-Sanie S.

Author information

Abstract

PURPOSE OF REVIEW:

To provide an update on nonsurgical and nonpharmacologic strategies for the management of chronic pelvic pain (CPP).

RECENT FINDINGS:

Effective treatment of patients with CPP requires a multifaceted approach, with thoughtful consideration of surgical, pharmacologic, and nonpharmacologic strategies. Evidence for physical therapy and trigger point injections for treatment of myofascial components of CPP is increasing. Neuromodulation techniques, such as percutaneous tibial nerve stimulation and transcutaneous electrical stimulation, have limited but favorable preliminary data in patients with CPP. Behavioral strategies, such as exercise, cognitive behavioral therapy, and mindfulness, have demonstrated significant improvements in pain, function and quality of life in patients with a variety of chronic pain conditions and are promising avenues for future research in CPP.

SUMMARY:

Nonpharmacologic therapies are important adjuncts to surgical and pharmacologic treatment for CPP and should be considered integral to a comprehensive treatment approach.

8. VISCERA

Rural life and IBD

Am J Gastroenterol. 2017 Jul 25. doi: 10.1038/ajg.2017.208.

Rural and Urban Residence During Early Life is Associated with a Lower Risk of Inflammatory Bowel Disease: A Population-Based Inception and Birth Cohort Study.

Benchimol EI^{1,2,3,4,5}, Kaplan GG^{6,7}, Otley AR⁸, Nguyen GC^{5,9}, Underwood FE^{6,7}, Guttman A^{5,10}, Jones JL¹¹, Potter BK⁴, Catley CA⁵, Nugent ZJ¹², Cui Y¹¹, Tanyingoh D⁶, Mojaverian N⁵, Bitton A¹³, Carroll MW¹⁴, deBruyn J¹⁵, Dummer TJB¹⁶, El-Matary W¹⁷, Griffiths AM¹⁰, Jacobson K^{18,19}, Kuenzig ME^{1,2,5}, Leddin D¹¹, Lix LM²⁰, Mack DR^{1,2,3}, Murthy SK^{5,21}, Sánchez JNP²², Singh H^{12,23}, Targownik LE^{12,23}, Vutcovici M¹³, Bernstein CN^{12,23}.

Author information

Abstract

OBJECTIVES:

To determine the association between inflammatory bowel disease (IBD) and rural/urban household at the time of diagnosis, or within the first 5 years (y) of life.

METHODS:

Population-based cohorts of residents of four Canadian provinces were created using health administrative data. Rural/urban status was derived from postal codes based on population density and distance to metropolitan areas. Validated algorithms identified all incident IBD cases from administrative data (Alberta: 1999-2008, Manitoba and Ontario: 1999-2010, and Nova Scotia: 2000-2008). We determined sex-standardized incidence (per 100,000 patient-years) and incident rate ratios (IRR) using Poisson regression. A birth cohort was created of children in whom full administrative data were available from birth (Alberta 1996-2010, Manitoba 1988-2010, and Ontario 1991-2010). IRR was calculated for residents who lived continuously in rural/urban households during each of the first 5 years of life.

RESULTS:

There were 6,662 rural residents and 38,905 urban residents with IBD. Incidence of IBD per 100,000 was 33.16 (95% CI 27.24-39.08) in urban residents, and 30.72 (95% CI 23.81-37.64) in rural residents (IRR 0.90, 95% CI 0.81-0.99). The protective association was strongest in children <10 years (IRR 0.58, 95% CI 0.43-0.73) and 10-17.9 years (IRR 0.72, 95% CI 0.64-0.81). In the birth cohort, comprising 331 rural and 2,302 urban residents, rurality in the first 1-5 years of life was associated with lower risk of IBD (IRR 0.75-0.78).

CONCLUSIONS:

People living in rural households had lower risk of developing IBD. This association is strongest in young children and adolescents, and in children exposed to the rural environment early in life. Am J Gastroenterol advance online publication, 25 July 2017; doi:10.1038/ajg.2017.208.

Hypertension and osteoporosis

Osteoporos Int. 2017 Apr 26. doi: 10.1007/s00198-017-4050-z.

Meta-analysis of hypertension and osteoporotic fracture risk in women and men.

Li C¹, Zeng Y¹, Tao L¹, Liu S², Ni Z³, Huang Q⁴, Wang Q⁵.

Author information

Abstract

The present meta-analysis synthesized evidence from 10 articles encompassing 28 independent studies to verify the association between hypertension and osteoporotic fracture risk in women and men. Our results indicate that the risk of osteoporotic fracture among individuals with hypertension was higher than that among individuals without hypertension.

INTRODUCTION:

Epidemiological studies have suggested that hypertension is related to osteoporotic fracture. However, discrepancies exist in the reported findings. In this study, a systematic review of relevant published articles was conducted to verify the association between hypertension and osteoporotic fracture risk in women and men.

METHODS:

PubMed (1953_October 5th, 2016) and Embase (1974_October 5th, 2016) were systematically searched for relevant articles. Odds ratios (ORs) and confidence intervals (CIs) were derived using random effect models. Categorical, subgroup, heterogeneity, publication bias, and meta-regression analyses were conducted.

RESULTS:

We analyzed 10 articles encompassing 28 independent studies, 1,430,431 participants, and 148,048 osteoporotic fracture cases. The risk of osteoporotic fracture among individuals with hypertension was higher (pooled OR = 1.33, 95% CI 1.25-1.40; $I^2 = 72.3\%$, $P < 0.001$) than that among individuals without hypertension. The association between hypertension and fracture risk was slightly stronger in women (pooled OR = 1.52, 95% CI 1.30-1.79) than in men (pooled OR = 1.35, 95% CI 1.26-1.44). Studies conducted in Asia revealed results that were consistent with those of studies performed in Europe.

CONCLUSIONS:

Hypertension is associated with osteoporotic fracture risk. However, the biological mechanisms underlying the effect of hypertension on osteoporotic fracture remain to be elucidated.

IBS and deficient bile

Clin Gastroenterol Hepatol. 2017 Jun 27. pii: S1542-3565(17)30786-3. doi: 10.1016/j.cgh.2017.06.039

Bile Acid Deficiency in Subgroup of Patients With Irritable Bowel Syndrome With Constipation Based on Biomarkers in Serum and Fecal Samples.

Vijayvargiya P¹, Busciglio I¹, Burton D¹, Donato L², Lueke A², Camilleri M³.

Author information

Abstract

BACKGROUND & AIMS:

Short-term administration of delayed-release chenodeoxycholic acid to patients with irritable bowel syndrome with constipation (IBS-C) accelerates colonic transit and reduces symptoms. A preliminary study has shown that patients with IBS-C have reduced levels of bile acids (BAs) in feces and reduced synthesis of BA. We compared levels of primary and secondary BAs in fecal samples collected over a 48-hr period from patients with IBS-C on a diet that contained 100 g fat per day, and compared them with levels in samples from healthy volunteers (controls). We also examined the relationship between overall colonic transit and biomarkers of BAs in patients with IBS-C.

METHODS:

We performed a retrospective study of 45 patients with IBS-C and 184 controls. For controls, we estimated the 10th percentile of fasting serum levels of C4 (n=184) and 48-hr fecal BAs (n=46), and the 90th percentile of fasting serum level of fibroblast growth factor 19 (FGF19, n=50). Colonic transit was measured in patients using a validated scintigraphic method. Data from patients with IBS-C were analyzed using Spearman correlations to determine relationships among levels of C4, FGF19, fecal BAs, and colonic transit.

RESULTS:

Among the patients with IBS-C, 2/45 had low serum levels of C4, 4/43 had increased serum levels of FGF19, and 6/39 had low levels of BAs in feces collected over 48-hrs. Patients with IBS-C had a significant increase in proportions of fecal lithocholic acid compared with controls (P=.04) and decrease in deoxycholic acid compared to controls (P=.03). In patients with IBS-C, there were inverse relationships between serum levels of C4 and FGF19 and correlations among levels of 48-hr fecal BAs, colonic transit, and serum C4 and FGF19.

CONCLUSION:

Approximately 15% of patients with IBS-C have reduced total BAs and level of deoxycholic acid in fecal samples collected over 48 hrs on a 100 g fat diet. In these patients, lower levels of excretion of BAs into feces correlated with slower colonic transit.

IBS grouping

Aliment Pharmacol Ther. 2017 Jul 3. doi: 10.1111/apt.14207.

Mixture model analysis identifies irritable bowel syndrome subgroups characterised by specific profiles of gastrointestinal, extraintestinal somatic and psychological symptoms.

Polster A¹, Van Oudenhove L², Jones M³, Öhman L⁴, Törnblom H¹, Simrén M^{1,5}.

Author information**Abstract****BACKGROUND:**

Current subgrouping of Irritable Bowel Syndrome (IBS) is exclusively based on stool consistency without considering other relevant gastrointestinal (GI), extraintestinal somatic or psychological features.

AIM:

To identify subgroups based on a comprehensive set of IBS-related parameters.

METHODS:

Mixture model analysis was used, with the following input variables: 13 single-item scores from the IBS-specific Gastrointestinal Symptom Rating Scale, average stool consistency and frequency from a 7-day Bristol Stool Form diary, 12 single-item extraintestinal symptom scores from the Patient Health Questionnaire-12, and anxiety and depression subscale scores from the Hospital Anxiety and Depression scale. The resulting latent subgroups were compared regarding symptom profiles using analysis of variance followed by pair-wise comparisons.

RESULTS:

One hundred and seventy-two IBS patients (Rome III; 69% female; mean age 33.7 [range 18-60] years) were included. The optimal subgrouping showed six latent groups, characterised by: (I) constipation with low comorbidities, (II) constipation with high comorbidities, (III) diarrhoea with low comorbidities, (IV) diarrhoea and pain with high comorbidities, (V) mixed GI symptoms with high comorbidities, (VI) a mix of symptoms with overall mild severity. The subgroups showed differences in the distribution of Rome III-subtypes, IBS severity, presence of anxiety and depression, and gender, but not regarding age, IBS duration or reported post-infectious onset of IBS.

CONCLUSIONS:

This model-based subgrouping of IBS partly supports the distinction of subgroups based on bowel habits, but additionally distinguishes subgroups with or without co-morbid extraintestinal somatic and psychological symptoms. The resulting groups show specific profiles of symptom combinations.

IBS and chronic problems

Eur J Gastroenterol Hepatol. 2017 Aug;29(8):916-925. doi: 10.1097/MEG.0000000000000891.

Chronic comorbidities associated with inflammatory bowel disease: prevalence and impact on healthcare costs in Switzerland.

Bähler C¹, Schoepfer AM, Vavricka SR, Brüngger B, Reich O.

Author information

Abstract

OBJECTIVE:

Inflammatory bowel disease (IBD) was shown to be associated with a variety of chronic comorbidities. We aimed to evaluate the frequency of 21 chronic conditions and compared frequencies in IBD and non-IBD populations. Further, healthcare costs of those (additional) chronic conditions were calculated.

PATIENTS AND METHODS:

A total of 4791 IBD patients, who were insured at Helsana Insurance Group in 2014, were compared with 1 114 638 individuals without IBD. Entropy balancing was performed to create balanced samples. Chronic conditions were identified by means of the updated Pharmacy-based Cost Group model. Multivariate log-transformed linear regression modeling was performed to estimate the effect of the morbidity status (non-IBD +none, +1, +2, and +3 or more chronic conditions) on the healthcare costs.

RESULTS:

Overall, 78% of IBD patients had at least one comorbidity, with a median of three comorbidities. Largest differences between individuals with and without IBD were found for rheumatologic conditions, acid-related disorders, pain, bone diseases, migraines, cancer, and iron-deficiency anemia, whereas no significant differences between the two groups were found for diabetes, dementia, hyperlipidemia, glaucoma, gout, HIV, psychoses, and Parkinson's disease after adjustments for a variety of covariates. Each increase in the morbidity status led to increased healthcare costs; rheumatologic conditions, acid-related disorders, and pain as the most frequent comorbidities more than doubled total costs in IBD patients.

CONCLUSION:

We found a considerably high prevalence of concomitant chronic diseases in IBD patients. This was associated with considerably higher healthcare costs, especially in the outpatient setting.

10 A. CERVICAL SPINE**Scapula management****Effects of movement impairment based treatment in the management of mechanical neck pain**

T.M. AshwiniH. Karvannan V. Prem

DOI: <http://dx.doi.org/10.1016/j.jbmt.2017.07.007>

Abstract**Background**

Neck pain is a common musculoskeletal complaint in computer users due to prolonged static or awkward work postures. It has been shown that pathogenesis of neck pain is associated with scapular movement impairment syndromes. However, there is a dearth of literature in treatment based on these syndromes.

Aim

To identify the effects of movement impairment based treatment in the management of mechanical neck pain in computer users.

Methods

In the present study, twenty-seven subjects were recruited. Based on the scapular impairment syndrome identified, they were trained with scapular movement impairment based exercises for four weeks. Pain, disability and cervical range of motion were measured with numeric pain rating scale, neck disability index and inclinometer respectively at baseline and at four weeks.

Results

Twenty-one subjects completed the study. After four weeks, a significant difference of 4.81 points for numeric pain rating scale and 24.47% for neck disability index at 95% CI were found. The cervical range of motion showed a significant change ($p < 0.05$) of 10.09° for flexion, 24.47° for extension, 7.42° for right lateral flexion, 6.23° for left lateral flexion, 15.52° for right rotation and 14.95° for left rotation at 95% CI.

Conclusions

Exercises based on scapular impairment syndromes were given for four weeks. It was found to be effective in relieving pain and reducing dysfunction in computer users with mechanical neck pain.

10 B. CERVICAL EXERCISES**Core exercises**

Eur J Pain. 2017 Jul 20. doi: 10.1002/ejp.1073.

Cervical stability training with and without core stability training for patients with cervical disc herniation: A randomized, single-blind study.

Buyukturan B¹, Guclu-Gunduz A², Buyukturan O¹, Dadali Y³, Bilgin S⁴, Kurt EE⁵.

Author information

Abstract

BACKGROUND:

This study aims at evaluating and comparing the effects of cervical stability training to combined cervical and core stability training in patients with neck pain and cervical disc herniation.

METHODS:

Fifty patients with neck pain and cervical disc herniation were included in the study, randomly divided into two groups as cervical stability and cervical-core stability. Training was applied three times a week in three phases, and lasted for a total duration of 8 weeks. Pain, activation and static endurance of deep cervical flexor muscles, static endurance of neck muscles, cross-sectional diameter of M. Longus Colli, static endurance of trunk muscles, disability and kinesiophobia were assessed.

RESULTS:

Pain, activation and static endurance of deep cervical flexors, static endurance of neck muscles, cross-sectional diameter of M. Longus Colli, static endurance of trunk muscles, disability and kinesiophobia improved in both groups following the training sessions ($p < 0.05$). Comparison of the effectiveness of these two training methods revealed that the cervical stability group produced a greater increase in the right transverse diameter of M. Longus Colli ($p < 0.05$). However, static endurance of trunk muscles and kinesiophobia displayed better improvement in the cervical-core stability group ($p < 0.05$).

CONCLUSIONS:

Cervical stability training provided benefit to patients with cervical disc herniation. The addition of core stability training did not provide any additional significant benefit. Further research is required to investigate the efficacy of combining other techniques with cervical stability training in patients with cervical disc herniation.

SIGNIFICANCE:

Both cervical stability training and its combination with core stability training were significantly and similarly effective on neck pain and neck muscle endurance in patients with cervical disc herniation.

12 B. CERVICAL SURGERIES

Comparisons

Spine J. 2017 Jun 30. pii: S1529-9430(17)30310-8. doi: 10.1016/j.spinee.2017.06.036.

The five-year cost-effectiveness of two-level anterior cervical discectomy and fusion or cervical disc replacement: a markov analysis.

Overley SC¹, McAnany SJ², Brochin RL¹, Kim JS¹, Merrill RK¹, Qureshi SA³.

Author information

Abstract

BACKGROUND CONTEXT:

Anterior cervical discectomy and fusion (ACDF) and cervical disc replacement (CDR) are both acceptable surgical options for the treatment of cervical myelopathy and/or radiculopathy. To date, there are limited economic analyses assessing the relative cost-effectiveness of two-level ACDF versus CDR.

PURPOSE:

The purpose of this study was to determine the five-year cost-effectiveness of two-level ACDF versus CDR.

STUDY DESIGN:

Secondary analysis of prospectively collected data.

PATIENT SAMPLE:

Patients in the Prestige Cervical Disc Investigational Device Exemption study who underwent either 2 level CDR or 2 level ACDF.

OUTCOME MEASURES:

Cost and quality adjusted life years (QALYs).

METHODS:

A Markov-state transition model was used to evaluate data from the two-level Prestige Cervical Disc IDE study. Data from the 36-item Short Form Health Survey were converted into utilities using the SF-6D algorithm. Costs were calculated from the payer perspective. QALYs were used to represent effectiveness. A probabilistic sensitivity analysis was performed using a Monte Carlo simulation.

RESULTS:

The base case analysis, assuming a 40 year-old person who failed appropriate conservative care, generated a five-year cost of \$130,417 for CDR and \$116,717 for ACDF. CDR and ACDF generated of 3.45 and 3.23 QALY's respectively. The ICER was calculated to be \$62,337/QALY for CDR. The Monte Carlo simulation validated the base case scenario. CDR had an average cost of \$130,445 (CI: \$108,395; \$152,761) with an average effectiveness of 3.46 (CI: 3.05; 3.83). ACDF had an average cost of \$116,595 (CI: 95,439; \$137,937) and an average effectiveness of 3.23 (CI: 2.84; 3.59). The ICER was calculated at \$62,133/QALY with respect to CDR. Using a \$100,000/QALY WTP, CDR is the more cost-effective strategy and would be selected 61.5% of the time by the simulation.

CONCLUSIONS:

Two-level CDR and ACDF are both cost-effective strategies at five years. Neither strategy was found to be more cost-effective with an ICER greater than the \$50,000/QALY WTP threshold. The assumptions used in the analysis were strongly validated with the results of the probabilistic sensitivity analysis.

13. CRANIUM/TMJ**Periodontal problems and male infertility**

J Clin Periodontol. 2017 Jul 26. doi: 10.1111/jcpe.12785. [Epub ahead of print]

Idiopathic male infertility related to periodontal and caries status.

Práger N¹, Pásztor N², Várnagy Á³, Kozinszky Z⁴, Baráth Z¹, Gorzó I⁵, Radnai M⁶.

OBJECTIVES:

The present study was undertaken to evaluate the possible correlation between the periodontal and dental status and sperm pathology in idiopathic male infertility.

METHODS:

The periodontal and caries status and semen quality of 199 men presented with unexplained male infertility were examined. Periodontal and dental factors were analyzed by sperm pathology categories.

RESULTS:

106 men had normal sperm parameters, whereas 93 men had some type of spermpathology; 27.95% had oligozoospermia, 23.65% asthenozoospermia, 16.12% cryptozoospermia, 32.25% combined oligo-asthenozoospermia. Poor periodontal status was found in about half of the study group (45.7%). The DMFT index was not a significantly higher in any of the spermpathology groups. The odds of calculus, bleeding on probing (BOP) and BOP at $\geq 50\%$ of the teeth was significantly higher in the combined group (AOR=1.04, AOR=1.13, AOR=4.92, respectively) in multivariate analyses compared to those in the normozoospermia group. Gingival bleeding in the history and urban residency were the only predictors for pathospermia shown by the logistic regression model (AORs were 1.82 and 2.26, respectively).

CONCLUSIONS:

Some features of poor periodontal status, as gingival bleeding in the history, presence of calculus and bleeding on probing, were associated with oligo+asthenozoospermia in men with idiopathic infertility. This article is protected by copyright. All rights reserved.

Sleep apnea and opioid use

Sleep Breath. 2017 Jul 24. doi: 10.1007/s11325-017-1539-9.

Association of opioid prescription and perioperative complications in obstructive sleep apnea patients undergoing total joint arthroplasties.

Mörwald EE^{1,2}, Olson A³, Cozowicz C^{1,2}, Poeran J³, Mazumdar M³, Memtsoudis SG^{4,5,6}.

Author information

Abstract

PURPOSE:

Obstructive sleep apnea (OSA) has been linked to higher rates of perioperative complications. Practice guidelines recommend minimizing opioids in this cohort to reduce complications. However, a paucity of evidence exists relating different levels of opioid prescription to perioperative complications. Our aim was to investigate if different levels of opioid prescription are related to perioperative complication risk in patients with OSA.

METHODS:

A total of 107,610 OSA patients undergoing total knee or hip arthroplasty between 2006 and 2013 were identified in a nationwide database and divided into subgroups according to the amount of opioids prescribed. We then compared those subgroups for odds of perioperative complications using multilevel multivariable logistic regression models.

RESULTS:

OSA patients with higher levels of opioid prescription had increased odds for gastrointestinal complications (OR 1.90, 95% CI 1.47-2.46), prolonged length of stay (OR 1.64, 95% CI 1.57-1.72), and increased cost of care (OR 1.48, 95% CI 1.40-1.57). However, we found lower odds for pulmonary complications (OR 0.85, 95% CI 0.74-0.96) for the high-prescription group.

CONCLUSIONS:

Higher levels of opioid prescription were associated with higher odds for gastrointestinal complications and adverse effects on cost and length of stay but lower odds for pulmonary complications in OSA patients undergoing joint arthroplasties. The latter finding is unlikely causal but may represent more preventive measures and early interventions among those patients. Attempts to reduce opioid prescription should be undertaken to improve quality and safety of care in this challenging cohort in the perioperative setting.

Sleep apnea helped

Restoration of Sleep Architecture after Maxillomandibular Advancement: Success Beyond the Apnea–Hypopnea Index

S.Y.-C. Liu L.-K. Huon C. Ruoff R.W. Riley K.P. Strohl Z. Peng

DOI: <http://dx.doi.org/10.1016/j.ijom.2017.07.001>**Abstract**

While effects of maxillomandibular advancement (MMA) on respiratory parameters for patients with obstructive sleep apnea (OSA) are well described, effects on sleep architecture before and after MMA are not.

A retrospective cohort analysis on sleep architecture was examined in 10 OSA patients who underwent MMA surgery between July 2013 and November 2014, and had prespecified complete polysomnography (PSG) datasets. Sleep stages were examined relative to a Western European population-based control group. All of the respiratory parameters improved significantly post MMA. Rapid eye movement (REM) latency decreased from 178.0 ± 142.8 to 96.6 ± 64.5 min ($P = 0.035$). %NREM (non-rapid eye movement)1 ($P = 0.045$) and %WASO (wakefulness after sleep onset) ($P = 0.006$) decreased, while %REM increased ($P = 0.002$) after MMA. WASO decreased from 64.2 ± 57 min to 22.4 ± 15.4 min ($P = 0.017$).

Preoperatively, OSA subjects showed significantly lower sleep efficiency ($P = 0.016$), sleep onset latency ($P = 0.015$), and % REM ($P < 0.001$) than the normative population dataset, while post MMA there was a significant decrease in %NREM1 sleep ($P < 0.001$) and in %WASO ($P < 0.001$). MMA results in a marked decrease in WASO and increase in REM, and to a lesser extent NREM sleep. Patients after MMA show values similar to population controls except for a lower WASO.

Plasma for OF pain

Clin Neuropharmacol. 2017 Jul/Aug;40(4):163-168. doi: 10.1097/WNF.0000000000000225.

Duloxetine Plasma Concentrations and Its Effectiveness in the Treatment of Nonorganic Chronic Pain in the Orofacial Region.

Kobayashi Y¹, Nagashima W, Tokura T, Yoshida K, Umemura E, Miyauchi T, Arao M, Ito M, Kimura H, Kurita K, Ozaki N.

Author information

Abstract

OBJECTIVE:

The purpose of this study was to examine the relationship between the pain-relieving effects of duloxetine and its plasma concentrations in patients with burning mouth syndrome and atypical odontalgia characterized by chronic nonorganic pain in the orofacial region.

METHODS:

We administered duloxetine to 77 patients diagnosed as having burning mouth syndrome or atypical odontalgia for 12 weeks. The initial dose of duloxetine was established as 20 mg/d and was increased to 40 mg/d after week 2. We evaluated pain using the visual analog scale and depressive symptoms using the Structured Interview Guide for the Hamilton Depression Rating Scale at weeks 0, 2, 4, 6, 8, 10, and 12 and measured plasma concentrations of duloxetine 12 weeks after the start of its administration.

RESULTS:

Visual analog scale scores were significantly lower 12 weeks after than at the start of the administration of duloxetine (paired t test, $t = 6.65$, $P < 0.0001$). We examined the relationship between the rate of decreases in visual analog scale scores and plasma concentrations of duloxetine. There was no significant linear regression or quadratic regression.

CONCLUSIONS:

Duloxetine significantly relieved pain in patients with chronic nonorganic pain in the orofacial region. However, no relationship was observed between its pain-relieving effects and plasma concentrations.

14. HEADACHES

Cognitive decline with migraine

J Headache Pain. 2017 Dec;18(1):77. doi: 10.1186/s10194-017-0779-1. Epub 2017 Jul 25.

Subjective cognitive decline in patients with migraine and its relationship with depression, anxiety, and sleep quality.

Lee SH¹, Kang Y², Cho SJ³.

Author information

Abstract

BACKGROUND:

Cognitive decline is a major concern in patients with migraine. Depression, anxiety, and/or poor sleep quality are well-known comorbidities of migraine, but available evidence on the subjective cognitive decline (SCD) is limited. This study aimed to investigate the presence and frequency of SCD and its relationship with anxiety, depression and sleep quality in patients with migraine.

METHODS:

We enrolled patients with migraine who scored within the normal range of the Korean-Mini Mental State Examination and the Korean-Montreal Cognitive Assessment. Using the Subjective Cognitive Decline Questionnaire (SCD-Q), participants with ≥ 7 were assigned to the SCD group. The Headache Impact Test-6, Generalized Anxiety Disorder-7, Patient Health Questionnaire-9, and Pittsburgh Sleep Quality Index were used and analyzed between the two groups.

RESULTS:

A total of 188 patients with migraine, aged 38.1 ± 9.9 years, were enrolled. The mean SCD-Q score was 6.5 ± 5.5 , and 44.7% of participants were identified as SCD. Migraineurs with SCD reported higher headache pain intensity and headache impact, as well as greater prevalence of anxiety, depression, reduced quality of sleep, and shorter sleep duration during weekdays compared to migraineurs without SCD. There were no significant differences in terms of age, sex, migraine type (chronic/episodic), medication, or sleep duration during weekends between the two groups. Upon multivariate logistic analysis adjusted for age, sex, headache characteristics, and psychological variables, depression was associated with increased risk of SCD (Odds ratio 1.31, 95% confidence interval 1.16-1.49) and sleep duration during weekdays was associated with decreased risk of SCD (Odds ratio 0.66, 95% confidence interval 0.44-0.97).

CONCLUSIONS:

A non-negligible number of patients with migraine complained of SCD. Depression and short sleep duration during weekdays were related to SCD among adult migraineurs.

Scoliosis and back pain

J Headache Pain. 2017 Dec;18(1):73. doi: 10.1186/s10194-017-0780-8. Epub 2017 Jul 21.

Spine (Phila Pa 1976). 2017 Aug 1;42(15):E914-E919. doi: 10.1097/BRS.0000000000001986.

Back Pain Prevalence Is Associated With Curve-type and Severity in Adolescents With Idiopathic Scoliosis: A Cross-sectional Study.

Thérroux J¹, Le May S, Hebert JJ, Labelle H.

STUDY

A cross-sectional study.

OBJECTIVES:

The aim of this study was to investigate spinal pain prevalence in adolescents with idiopathic scoliosis (AIS) and to explore associations between pain intensity and pain-related disability with scoliosis site, severity, and spinal bracing.

SUMMARY OF BACKGROUND DATA:

The causal link between spinal pain and AIS remains unclear. Spinal asymmetry has been recognized as a back pain risk factor, which is a known cause of care-seeking in adolescents.

METHODS:

Participants were recruited from an outpatient tertiary-care scoliosis clinic. Pain intensity and pain-related disability were measured by the Brief Pain Inventory questionnaire and the Roland-Morris Disability Questionnaire. Scoliosis severity estimation was performed using Cobb angles. Associations were explored using multiple linear regressions and reported with unstandardized beta coefficients (β) adjusted for age and sex.

RESULTS:

We recruited 500 patients (85% female) with mean (SD) age of 14.2 (1.8) years. Means (SD) of thoracic and lumbar Cobb angle were 24.54(9.77) and 24.13 (12.40), respectively. Spinal pain prevalence was 68% [95% confidence interval (95% CI): 64.5-72.4] with a mean intensity of 1.63 (SD, 1.89). Spinal pain intensity was positively associated with scoliosis severity in the main thoracic ($P=0.003$) and lumbar ($P=0.001$) regions. The mean (SD) disability score was 1.73 (2.98). Disability was positively associated with scoliosis severity in the proximal thoracic ($P=0.035$), main thoracic ($P=0.000$), and lumbar ($P=0.000$) regions. Spinal bracing was associated with lower spinal pain intensity in the thoracic ($P=0.000$) and lumbar regions ($P=0.009$). Bracing was also related with lower disability for all spinal areas ($P<0.045$).

CONCLUSION:

Spinal pain is common among patients with AIS, and greater spinal deformity was associated with higher pain intensity. These findings should inform clinical decision-making when caring for patients with AIS.

Perceived stress**Both positive and negative beliefs are important in patients with spine pain: findings from the oioc registry**

Moon HJ¹, Seo JG², Park SP³.

Author information

Abstract

BACKGROUND:

Perceived stress is the most common trigger for migraine. The objective of this study was to examine the clinical significance of perceived stress in migraine patients.

METHODS:

This is a case-control study. Consecutive migraine patients who visited a tertiary care hospital were enrolled for this study. They completed self-reported questionnaires including Perceived Stress Scale (PSS), 12-item Allodynia Symptom Checklist (ASC-12), Migraine Disability Assessment Scale (MIDAS), Patient Health Questionnaire-9 (PHQ-9), Generalized Anxiety Disorder-7 (GAD-7), Epworth Sleepiness Scale (ESS), Insomnia Severity Index (ISI), and Migraine-Specific Quality of Life Questionnaire (MSQ). Degree of perceived stress in migraine patients was measured and compared to that in healthy controls. Predictors for perceived stress and their impact on quality of life (QOL) of migraine patients were also determined.

RESULTS:

A total of 227 migraine patients were eligible for this study, including 103 (45.4%) who had chronic migraine (CM). Mean PSS score was significantly ($p < 0.05$) higher in CM patients than that in controls after adjusting for education, depression, and anxiety. Although several factors were associated with PSS score, major predictors for PSS were GAD-7 score ($\beta = 0.358$, $p < 0.001$), PHQ-9 score ($\beta = 0.304$, $p < 0.001$), ISI score ($\beta = 0.154$, $p = 0.005$), and CM ($\beta = -0.104$, $p = 0.027$). There was an inverse relationship between PSS scores and three-dimensional scores of MSQ ($p < 0.001$).

CONCLUSIONS:

Chronic migraine is a critical factor for perceived stress. Perceived stress affects QOL of migraine patients

White matter changes

Hum Brain Mapp. 2017 Jul 21. doi: 10.1002/hbm.23729

Integration of white matter network is associated with interindividual differences in psychologically mediated placebo response in migraine patients.

Liu J^{1,2}, Ma S³, Mu J^{1,2}, Chen T^{1,2}, Xu Q^{1,2}, Dun W³, Tian J^{1,2}, Zhang M³.

Individual differences of brain changes of neural communication and integration in the modular architecture of the human brain network exist for the repeated migraine attack and physical or psychological stressors. However, whether the interindividual variability in the migraine brain connectome predicts placebo response to placebo treatment is still unclear.

Using DTI and graph theory approaches, we systematically investigated the topological organization of white matter networks in 71 patients with migraine without aura (MO) and 50 matched healthy controls at three levels: global network measure, nodal efficiency, and nodal intramodule/intermodule efficiency. All patients participated in an 8-week sham acupuncture treatment to induce analgesia.

In our results, 30% (n = 21) of patients had 50% change in migraine days from baseline after placebo treatment. At baseline, abnormal increased network integration was found in MO patients as compared with the HC group, and the increased global efficiency before starting clinical treatment was associated with their following placebo response. For nodal efficiency, significantly increased within-subnetwork nodal efficiency and intersubnetwork connectivity of the hippocampus and middle frontal gyrus in patients' white matter network were correlated with the responses of follow-up placebo treatment.

Our findings suggested that the trait-like individual differences in pain-related maladaptive stress interfered with and diminished the capacity of chronic pain modulation differently, and the placebo response for treatment could be predicted from a prior white matter network modular structure in migraineurs. Hum Brain Mapp, 2017. © 2017 Wiley Periodicals, Inc

16. CONCUSSIONS

Criteria

Br J Sports Med. 2017 Jul 22. pii: bjsports-2016-096551. doi: 10.1136/bjsports-2016-096551.

A systematic review of criteria used to define recovery from sport-related concussion in youth athletes.

Haider MN¹, Leddy JJ², Pavlesen S², Kluczynski M², Baker JG^{2,3}, Miecznikowski JC⁴, Willer BS¹.

OBJECTIVE:

The Concussion in Sport Group guidelines recommend a multifaceted approach to help clinicians make return to sport decisions. The purpose of this study was to identify the most common multifaceted measures used to define clinical recovery from sport-related concussion in young athletes (high school and/or college level) and to summarise existing knowledge of criteria used to make return to sport decisions.

DESIGN:

Systematic review.

DATA SOURCES:

The PubMed (MEDLINE), SPORTDiscus and Embase electronic databases were searched from 1 January 2000 to 1 March 2017 by three independent reviewers.

ELIGIBILITY CRITERIA:

Inclusion criteria: elementary, high school and college age groups, and a specific definition of clinical recovery that required two or more measures.

EXCLUSION CRITERIA:

review articles, articles using the same sample population, case studies, non-English language and those that used one measure only or did not specify the recovery measures used.

STUDY QUALITY:

Study quality was assessed using the Downs and Black Criteria.

RESULTS:

Of 2023 publications, 43 met inclusion criteria. Included articles reported the following measures of recovery: somatic symptom resolution or return to baseline (100%), cognitive recovery or return to baseline (86%), no exacerbation of symptoms on physical exertion (49%), normalisation of balance (30%), normal special physical examination (12%), successful return to school (5%), no exacerbation of symptoms with cognitive exertion (2%) and normalisation of cerebral blood flow (2%). Follow-up to validate the return to sport decision was reported in eight (19%) articles. Most studies were case-control or cohort (level of evidence 4) and had significant risk of bias.

CONCLUSION:

All studies of sport-related concussion use symptom reports to define recovery. A minority of studies used multiple measures of outcome or had clearly defined recovery criteria, the most common being a combination of a self-reported symptom checklist and a computerised neurocognitive test. Future studies ideally should define recovery a priori using objective physiological measures in addition to symptom reports.

17. SHOULDER GIRDLE**Dyskinesia**

Br J Sports Med. 2017 Jul 22. pii: bjsports-2017-097559. doi: 10.1136/bjsports-2017-097559.

Scapular dyskinesia increases the risk of future shoulder pain by 43% in asymptomatic athletes: a systematic review and meta-analysis.

Hickey D¹, Solvig V¹, Cavalheri V¹, Harrold M¹, Mckenna L¹.

BACKGROUND:

It is unclear whether the presence of scapular dyskinesia increases the risk of developing shoulder pain in asymptomatic athletes.

OBJECTIVES:

To determine whether the presence of scapular dyskinesia in asymptomatic athletes increases the risk of developing shoulder pain by systematic review and meta-analysis.

METHODS:

A systematic search was conducted in the Cochrane Library, Embase, PubMed, Cumulative Index to Nursing and Allied Health Literature, Allied and Complementary Medicine Database and SPORTDiscus. Prospective studies that assessed athletes for scapular dyskinesia and recorded incidents of shoulder pain were included. Study quality was assessed using the Downs and Black checklist. Meta-analysis was conducted to derive a pooled risk ratio (RR) for the development of shoulder pain in athletes with scapular dyskinesia compared with those without scapular dyskinesia.

RESULTS:

Five studies were included with a total of 419 athletes. Of the athletes with scapular dyskinesia, 35% (56/160) experienced shoulder pain during the follow-up, whereas 25% (65/259) of athletes without scapular dyskinesia experienced symptoms. The presence of scapular dyskinesia at baseline indicated a 43% increased risk of a shoulder pain event over a 9 to 24-month follow-up (RR=1.43, 95% CI 1.05 to 1.93).

CONCLUSIONS:

Athletes with scapular dyskinesia have 43% greater risk of developing shoulder pain than those without scapular dyskinesia.

18. CLAVICLE

AC joint and shoulder problems

Int Orthop. 2017 Aug;41(8):1633-1640. doi: 10.1007/s00264-017-3469-3. Epub 2017 Apr 28.

Concomitant glenohumeral pathologies associated with acute and chronic grade III and grade V acromioclavicular joint injuries.

Jensen G¹, Millett PJ^{2,3}, Tahal DS³, Al Ibadi M⁴, Lill H⁴, Katthagen JC^{4,3,5}.

PURPOSE:

The purpose of this study was to identify the risk of concomitant glenohumeral pathologies with acromioclavicular joint injuries grade III and V.

METHODS:

Patients who underwent arthroscopically-assisted stabilization of acromioclavicular joint injuries grade III or grade V between 01/2007 and 12/2015 were identified in the patient databases of two surgical centres. Gender, age at index surgery, grade of acromioclavicular joint injury (Rockwood III or Rockwood V), and duration between injury and index surgery (classified as acute or chronic) were of interest. Concomitant glenohumeral pathologies were noted and their treatment was classified as debridement or reconstructive procedure.

RESULTS:

A total of 376 patients (336 male, 40 female) were included. Mean age at time of arthroscopic acromioclavicular joint reconstruction surgery was 42.1 ± 14.0 years. Overall, 201 patients (53%) had one or more concomitant glenohumeral pathologies. Lesions of the biceps tendon complex and rotator cuff were the most common. Forty-five patients (12.0%) had concomitant glenohumeral pathologies that required an additional repair. The remaining 156 patients (41.5%) received a debridement of their concomitant pathologies. Rockwood grade V compared to Rockwood grade III ($p = 0.013$; odds ratio 1.7), and chronic compared to acute injury were significantly associated with having a concomitant glenohumeral pathology ($p = 0.019$; odds ratio 1.7). The probability of having a concomitant glenohumeral pathology was also significantly associated with increasing age ($p < 0.0001$).

CONCLUSIONS:

Concomitant glenohumeral pathologies were observed in 53% of surgically treated patients with an acute or chronic acromioclavicular joint injury of either grade III or V. Twenty-two percent of these patients with concomitant glenohumeral pathologies received an additional dedicated repair procedure. Although a significant difference in occurrence of concomitant glenohumeral pathologies was seen between Rockwood grades III and V, and between acute and chronic lesions, increasing age was identified as the most dominant predictor.

20 A. ROTATOR CUFF**Total replacement**

J Shoulder Elbow Surg. 2017 Jul 3. pii: S1058-2746(17)30246-X. doi: 10.1016/j.jse.2017.03.039.

Reverse shoulder arthroplasty for irreparable massive rotator cuff tears: a systematic review with meta-analysis and meta-regression.

Sevivas N¹, Ferreira N², Andrade R³, Moreira P⁴, Portugal R⁵, Alves D⁴, Vieira da Silva M⁶, Sousa N⁴, Salgado AJ⁴, Espregueira-Mendes J⁷.

BACKGROUND:

Massive rotator cuff tears (MRCTs) are very large tears that are often associated with an uncertain prognosis. Indeed, some MRCTs even without osteoarthritis are considered irreparable, and nonanatomic solutions are needed to improve the patient's symptoms. Reverse shoulder arthroplasty (RSA) is an option that can provide a more predictable pain relief and recovery of function. Nonetheless, outcomes after RSA for irreparable MRCTs have not been well defined. The aim of this study was to quantitatively aggregate the findings associated with the use of RSA in this subset of patients and analyze the effect on patient functional status and pain.

METHODS:

A comprehensive search was performed until October 2015 using MEDLINE, Scopus, Cochrane Database of Systematic Reviews, and Central Register of Controlled Trials databases. Studies that assessed the outcomes of RSA in patients with irreparable MRCT without osteoarthritis (with at least 2 years of follow-up) were included. If the results of MRCT without osteoarthritis were not possible to subgroup, the study was excluded. Methodologic quality was assessed using the Coleman Methodology Score.

RESULTS:

Included were 6 studies (266 shoulders) with a follow-up ranging from 24 to 61.4 months. The mean Coleman Methodology Score was 58.2 ± 11.8 points. There was an overall improvement from preoperative to postoperative assessments of the clinical score (Cohen $d = 1.35$, $P < .001$), forward flexion ($d = 0.50$, $P = .009$), external rotation ($d = 0.40$, $P < .001$), function ($d = 1.04$, $P < .001$), and pain ($d = -0.89$, $P < .001$).

CONCLUSION:

Patients with irreparable MRCT without presence of osteoarthritis have a high likelihood of achieving a painless shoulder and functional improvements after RSA.

22 B. INSTABILITY**Bankart repair industry standard**

J Shoulder Elbow Surg. 2017 Jul 3. pii: S1058-2746(17)30250-1. doi: 10.1016/j.jse.2017.04.013.

Mid-term to long-term outcome of the open Bankart repair for recurrent traumatic anterior dislocation of the shoulder.

Neviaser RJ¹, Benke MT², Neviaser AS².

BACKGROUND:

The purpose of this study was to assess the long-term outcome of the open Bankart repair for traumatic, recurrent anterior dislocation of the shoulder by evaluation of recurrence, range of motion, return to sports, arthritis, patient satisfaction, and outcome measures.

METHODS:

Of 162 patients, 127 patients (mean age, 31 years) were evaluated at a mean follow-up of 17.1 years (5-24) after undergoing an open Bankart repair using suture anchors. An independent orthopedic surgeon obtained a history and examined each for range of motion. Radiographs for arthritis and osteolysis were obtained unless the patient refused. Questionnaires including return to sports and function as well as satisfaction and outcome measures were completed by all patients.

RESULTS:

There was 1 recurrent dislocation (0.8%) and 1 recurrent subluxation (0.8%) but no pain or apprehension. All remaining shoulders were stable. Compared with the normal shoulder, there was statistical difference in external rotation in abduction and at the side as well as in internal rotation but not in forward elevation or abduction. However, no patient considered any measurable loss functionally significant. Of 107 patients who participated in sports, 98 returned to the sport; 7 of the remaining 9 discontinued for reasons other than the shoulder. There were 91 patients who agreed to radiography; 48 had normal findings, 34 had mild arthrosis, 9 had moderate arthrosis, and none had severe arthrosis. Mean postoperative outcome scores were as follows: American Shoulder and Elbow Surgeons, 93.53; Rowe, 91.41; and Western Ontario Shoulder Instability Index, 327.7. There were 125 patients who were satisfied and would undergo the procedure again.

CONCLUSION:

The open Bankart procedure remains the standard by which other techniques can be measured for treatment of recurrent, traumatic anterior dislocation of the shoulder.

Posterior shoulder

J Shoulder Elbow Surg. 2017 Jul 19. pii: S1058-2746(17)30319-1. doi: 10.1016/j.jse.2017.05.033.

Arthroscopic treatment of posterior shoulder instability in patients with and without glenoid dysplasia: a comparative outcomes analysis.

Galvin JW¹, Morte DR², Grassbaugh JA³, Parada SA⁴, Burns SH³, Eichinger JK⁵.

BACKGROUND:

The purpose of this study was to evaluate the influence of glenoid dysplasia on outcomes after isolated arthroscopic posterior labral repair in a young military population.

METHODS:

Thirty-seven male patients who underwent arthroscopic posterior labral repair for symptomatic posterior shoulder instability were evaluated at a mean duration of 3.1 years. A comparative analysis was performed for those with glenoid dysplasia and without dysplasia. Additional factors analyzed included military occupational specialty (MOS), preoperative mental health clinical encounters and mental health medication use, and radiographic characteristics (version, posterior humeral head subluxation, and posterior capsular area) on a preoperative standard shoulder magnetic resonance arthrogram. The groups were analyzed with regard to shoulder outcome scores (subjective shoulder value [SSV], American Shoulder and Elbow Surgeons [ASES] rating scale, Western Ontario Shoulder Instability Index [WOSI]), need for revision surgery, and medical separation from the military.

RESULTS:

Of 37 patients, 3 (8.1%) underwent revision surgery and 6 (16%) underwent medical separation. Overall outcome assessment demonstrated a mean SSV of 67.9 (range, 25-100) \pm 22.1, mean ASES of 65.6 (range, 15-100) \pm 22, and mean WOSI of 822.6 (range, 5-1854) \pm 538. There were no significant differences in clinical outcome scores between the glenoid dysplasia and no dysplasia groups (SSV, $P = .55$; ASES, $P = .57$; WOSI, $P = .56$). MOS ($P = .02$) and a history of mental health encounters ($P = .04$) were significantly associated with diminished outcomes.

CONCLUSIONS:

The presence or absence of glenoid dysplasia did not influence the outcome after arthroscopic posterior labral repair in a young military population. However, a history of mental health clinical encounters and an infantry MOS were significantly associated with poorer clinical outcomes.

32 A. KNEE/ACL**ALL injury**

Skeletal Radiol. 2017 Sep;46(9):1193-1200. doi: 10.1007/s00256-017-2657-y. Epub 2017 Apr 21.

The magnetic resonance imaging appearance of the anterolateral ligament of the knee in association with anterior cruciate rupture.

Kosy JD¹, Schranz PJ², Patel A², Anaspure R², Mandalia VI².

OBJECTIVE:

The magnetic resonance imaging (MRI) appearance of the anterolateral ligament (ALL) has been described. However, the appearance of this structure and injury, in the presence of anterior cruciate ligament (ACL) injury, is less well defined. We studied the incidence of injury to the ALL and the pattern of this injury on MRI.

MATERIALS AND METHODS:

Following Institutional Review Board approval, a retrospective study of 375 consecutive MRI studies was performed. Cases were identified from a prospective database of ACL reconstruction patients. Following exclusions, 280 MRIs (277 patients; 197 males; 80 females; mean age 30.2 years, range, 16-54) were evaluated. Injury was defined as full thickness, partial thickness, or an avulsion fracture. Each study was independently assessed by two consultant musculoskeletal radiologists.

RESULTS:

Injury to the ALL was identified (by at least one observer) in only 10.7% of cases (2.50% full thickness, 7.50% partial thickness, and 0.71% avulsion fracture). There was an almost perfect level of interobserver agreement for both the identification of an injury ($\kappa = 0.854$) and grading of injury ($\kappa = 0.858$). The MRI incidence of ALL injury was significantly greater within 6 weeks of the knee injury (18.5 vs. 8.37%; $p < 0.05$).

CONCLUSIONS:

ALL injury was identified in only one-tenth of cases of ACL rupture. MRI changes can be reliably identified with strong agreement between observers. ALL injury is found more frequently on MRI within 6 weeks of the knee injury (compared to scans performed after this time period) suggesting that some injuries may resolve or become less visible.

34. PATELLA

Gait changes

Gait Posture. 2017 Jul 10. pii: S0966-6362(17)30737-3. doi: 10.1016/j.gaitpost.2017.07.034.

Higher pain level and lower functional capacity are associated with the number of altered kinematics in women with patellofemoral pain.

Ferrari D¹, Briani RV², de Oliveira Silva D³, Pazzinatto MF⁴, Ferreira AS⁵, Alves N⁶, de Azevedo FM⁷.

This study investigated whether women with patellofemoral pain (PFP) present kinematic alterations in proximal, local, and distal factors simultaneously, and determined the association between the number of kinematic alterations, pain level, and functional status.

A three-dimensional motion analysis system was used to analyze the peak hip adduction, peak knee flexion, and peak rearfoot eversion, addressing the proximal, local, and distal factors, respectively, in fifty women. Functional status and pain level were assessed using the anterior knee pain scale (AKPS) and a visual analogic scale. Receiver operating characteristic curves were calculated to identify participants with and without kinematic alterations and the number of them was obtained for each participant. Associations between the number of kinematic alterations, pain level, and AKPS score were determined by the Pearson correlation.

Results showed that 52% of women with PFP presented at least two kinematic alterations of which 24% were local/proximal, 16% local/distal, and 12% proximal/distal. Three kinematic alterations were found in 48% of the women with PFP. A strong positive correlation was found between the number of kinematic alterations and pain ($r=0.78$; $p<0.001$). A strong negative correlation was found between the number of altered kinematics and functional status ($r=-0.79$; $p<0.001$).

Findings revealed that women with PFP presented at least two kinematic alterations and a higher number of kinematic alterations was associated with higher pain levels and lower functional status. Clinicians should carefully assess movement pattern of women with PFP as it could indicate a more severe condition, which is associated with a poor prognosis.

Osteochondritis dissecans

Osteoarthritis Cartilage. 2017 Jul 12. pii: S1063-4584(17)31083-X. doi: 10.1016/j.joca.2017.07.005.

Incidence of Symptomatic Osteochondritis Dissecans Lesions of the Knee: A Population-Based Study in Olmsted County.

Pareek A¹, Sanders TL², Wu IT³, Larson DR⁴, Saris DB⁵, Krych AJ¹.

OBJECTIVE:

To (1) define the population-based incidence of OCD lesions of the knee using the population of Olmsted County, (2) examine trends over time, and (3) evaluate changes in the rate of surgical management.

METHOD:

The study population included 302 individuals who were diagnosed with knee OCD lesions between January 1, 1976 and December 31, 2014. The complete medical records were reviewed to confirm diagnosis and to extract injury and treatment details. Age- and gender-specific incidence rates were calculated and adjusted to the 2010 US population. Poisson regression analyses were performed to examine incidence and surgery trends by age, gender, and calendar period.

RESULTS:

The overall age- and gender-adjusted incidence annual incidence of knee OCD lesions was 6.09 per 100,000 person-years. The incidence was significantly higher ($P < 0.001$) in males (8.82, 95% CI 7.63 to 10.00 per 100,000) compared to females (3.32, 95% CI 2.61 to 4.04 per 100,000). Age- and gender-specific incidence was highest in both males and females in the 11-15 years old at 39.06 and 16.15 per 100,000, respectively. In males aged 11 to 15 years, OCD incidence increased significantly over the study period from 20.68 in 1976-1985 to 48.16 in 2006-2014 (per 100,000).

CONCLUSIONS:

The overall age- and gender-adjusted annual incidence of knee OCD lesions in the Olmsted County Population was 6.09 per 100,000 person-years with a significantly higher incidence in males compared to females. The highest incidence for both males and females occurred between the ages 11 to 15 years. Trends indicate increasing OCD incidence in younger males and decreasing surgical management in females over the last decade.

46 A. UPPER LIMB NEUROMOBILIZATION**Median nerve mob effective**

Pain Pract. 2017 Jul 22. doi: 10.1111/papr.12614.

Effects of Median Nerve Neural Mobilization in Treating Cervicobrachial Pain: A Randomized Waiting List-controlled Clinical Trial.

Rodríguez-Sanz D¹, López-López D², Unda-Solano F¹, Romero-Morales C¹, Sanz-Corbalán I³, Beltrán-Alacreu H⁴, Calvo-Lobo C⁵.

BACKGROUND:

There is a current lack of sufficiently high-quality randomized controlled clinical trials that measure the effectiveness of neural tissue mobilization techniques such as median nerve neural mobilization (MNNM) and their specific effects on cervicobrachial pain (CP). This study aim was to compare the effectiveness of MNNM in subjects with CP versus a waiting list control group (WLCG).

METHODS:

A single-blinded, parallel, randomized controlled clinical trial was performed ([NCT02596815](#)). Subjects were recruited with a medical diagnosis of CP corroborated by magnetic resonance imaging. In total, 156 individuals were screened, 60 subjects were recruited, and 51 completed the trial. Pain intensity reported using the Numeric Rating Scale for Pain (NRSP; primary outcome), cervical range of motion (CROM) and functionality using the Quick-DASH scale were the outcome measurements. Assessments were conducted at baseline and 1-hour after treatment (1, 15 and 30 intervention days). Therefore, MNNM was implemented with 30-days of follow-up.

RESULTS:

The NRSP values of the MNNM group were significantly ($p < 0.0001$; 95% CI) superior to those obtained in the WLCG. Subjects treated with MNNM reported an NRSP decrease of 3.08 points at discharge. CROM and Quick-DASH outcome values were significantly ($p < 0.0001$; 95%CI) improved only in the MNNM group. Hedges' g showed a very large effect of the MNNM intervention.

CONCLUSION:

MNNM may be superior to no treatment in reducing pain and increasing function in the affected upper limb of subjects with CP. This article is protected by copyright. All rights reserved.

52. EXERCISE**Exercise and memory in adolescents**

J Pediatr. 2017 Jun 27. pii: S0022-3476(17)30775-8. doi: 10.1016/j.jpeds.2017.05.079

Are Early Physical Activity and Sedentary Behaviors Related to Working Memory at 7 and 14 Years of Age?

López-Vicente M¹, Garcia-Aymerich J², Torrent-Pallicer J², Forns J², Ibarluzea J³, Lertxundi N⁴, González L⁵, Valera-Gran D⁶, Torrent M⁷, Dadvand P², Vrijheid M², Sunyer J⁸.

OBJECTIVE:

To evaluate the role of extracurricular physical activity and sedentary behavior at preschool and primary school age on working memory at primary school age and adolescence, respectively.

STUDY DESIGN:

This prospective study was based on a birth cohort across 4 Spanish regions. In the 3 younger subcohorts (n = 1093), parents reported lifestyle habits of child at age 4 years of age on a questionnaire, and children performed a computerized working memory task at 7 years of age. In the older subcohort (n = 307), the questionnaire was completed at 6 years of age and working memory was tested at 14 years of age. Adjusted regression models were developed to investigate the associations between lifestyle habits and working memory.

RESULTS:

Low extracurricular physical activity levels at 4 years of age were associated with a nonsignificant 0.95% (95% CI -2.81 to 0.92) reduction of correct responses in the working memory task at age 7 years of age. Low extracurricular physical activity levels at 6 years of age were associated with a 4.22% (95% CI -8.05 to -0.39) reduction of correct responses at age 14 years. Television watching was not associated with working memory. Other sedentary behaviors at 6 year of age were associated with a 5.07% (95% CI -9.68 to -0.46) reduction of correct responses in boys at 14 years of age.

CONCLUSION:

Low extracurricular physical activity levels at preschool and primary school ages were associated with poorer working memory performance at primary school age and adolescence, respectively. High sedentary behavior levels at primary school age were related negatively to working memory in adolescent boys.

53. CORE**LBP and size of core muscles****Is the size and composition of the paraspinal muscles associated with low back pain? A systematic review**

Tom A Ranger Flavia M Cicuttini Tue Secher Jensen Waruna L Peiris Sultana Monira Hussain
Jessica Fairley Donna M Urquhart

DOI: <http://dx.doi.org/10.1016/j.spinee.2017.07.002>

Abstract

Background Context Although previous studies have investigated the association between paraspinal muscle morphology and low back pain (LBP), the results are conflicting.

Purpose This systematic review examined the relationship between size and composition of the paraspinal muscles and LBP.

Study design/ setting: Systematic review

Patient sample: N/A

Outcome measures: N/A

Methods A systematic search of electronic databases was conducted to identify studies investigating the association between the cross-sectional area and/or fatty infiltration of the paraspinal muscles (erector spinae, multifidus, psoas and quadratus lumborum) and LBP. Descriptive data regarding study design and methodology were tabulated and a risk of bias assessment was performed.

Results Of the 119 studies identified, 25 met the inclusion criteria. Eight studies were reported as having low to moderate risk of bias. There was evidence for a negative association between cross-sectional area (CSA) of multifidus and LBP, but conflicting evidence for a relationship between erector spinae, psoas and quadratus lumborum CSA and LBP. Moreover, there was evidence to indicate multifidus CSA was predictive of LBP for up to 12 months in men, but insufficient evidence to indicate a relationship for longer time periods. While there was conflicting evidence for a relationship between multifidus fat infiltration and LBP, there was no or limited evidence for an association for the other paraspinal musculature.

Conclusions

This review found evidence that multifidus CSA was negatively associated with and predictive of LBP, up to 12 months but conflicting evidence for an association between erector spinae, psoas and quadratus lumborum CSA, and LBP. To further understand the role of the paraspinal musculature in LBP, there is a need for high quality cohort studies which extend over both the short and longer term.

54. POSTURE

Pain related body postures

Eur J Pain. 2017 Jul 10. doi: 10.1002/ejp.1072. [

Sex differences in the decoding of pain-related body postures.

Walsh J¹, Eccleston C^{2,3}, Keogh E².

BACKGROUND:

Pain can be detected through nonverbal cues, including facial expressions, vocalisations, and body posture. While there are sex differences in how emotional expressions are recognized, these differences have not always been found for pain. One reason for this inconsistency may be methodological, as pain studies tend not to be designed to investigate individual differences in expression recognition. Also, few studies consider sex differences outside facial expression.

METHODS:

This study applied an image degradation method used to examine individual differences in emotion recognition, to investigate sex differences in the decoding of pain body postures. Forty participants (20 male) were presented with a series of body posture images depicting pain at differing levels of image degradation. Happiness, anger and sadness expressions were also included for comparison.

RESULTS:

Results showed significant effects of image degradation, affect type, and actor sex. Females were rated as presenting more intense pain than males; this pattern was also found for fear, but not anger or happiness. The accuracy of pain intensity judgements was reduced as image clarity decreased. Male actors depicting pain were recognized with greater accuracy than female actors. Interestingly, similar patterns were found for anger and fear expressions.

CONCLUSIONS:

We conclude that sex has a significant influence on pain decoding under certain conditions, and while there are similarities with the way pain and core emotions are decoded, this may depend on the type of emotion presented. This also suggests that sex-related effects in the recognition of pain expressions may include body postural cues.

56. ATHLETICS**Headers**

Br J Sports Med. 2016 Dec 21. pii: bjsports-2016-096276. doi: 10.1136/bjsports-2016-096276.

Meta-analytical review of the effects of football heading.

Kontos AP¹, Braithwaite R², Chrisman SP³, McAllister-Deitrick J¹, Symington L¹, Reeves VL¹, Collins MW¹.

AIM/OBJECTIVE:

The objective of this study was to provide a meta-analysis examining the effects of football heading.

DESIGN:

Meta-analytical review on football heading effects on neurocognitive performance, cognition and symptom reports.

DATA SOURCES:

Combinations of the key terms were entered into the following electronic database search engines: Cochrane Libraries, PyscARTICLE, PyscINFO, PubMed, ProQuest, SPORTDiscus and Web of Science on 7 July 2016.

ELIGIBILITY CRITERIA FOR SELECTING STUDIES:

The following inclusion criteria were used to determine eligibility for studies: (1) the study examined and reported on soccer athletes; (2) the population's age, sex and sport position was described; (3) cognitive function, symptoms, balance or other outcomes were quantitatively measured; (4) football heading exposure was quantitatively measured between at least two groups and (5) the study was written in the English language after December 1979.

RESULTS:

The literature search process identified 467 unique studies. After applying exclusion criteria, 28 studies remained. Included studies had a total of 2288 participants (female participants =933, male participants =1355), aged 13-70 years. The overall results of random effects modelling of football heading were found to be inconclusive across all outcomes, groups and time points. No moderating variables related to methodological, sample or study characteristics were supported in the analysis; age was a potential moderating variable.

SUMMARY/CONCLUSIONS:

We provide the first meta-analytical review of football heading effects aggregated from multiple studies and extended findings from a recent systematic review of the effects of football heading. Our analysis indicates no overall effect for heading a football on adverse outcomes.

57. GAIT**Knee OA strengthening****Identifying Changes in Gait Waveforms Following a Strengthening Intervention for Women with Knee Osteoarthritis using Principal Components Analysis**

Elora C. Brenneman Monica R. Maly

DOI: <http://dx.doi.org/10.1016/j.gaitpost.2017.07.006>**Highlights**

- Novel strengthening intervention improved symptoms in women with knee OA.
- Subtle alterations in knee and hip sagittal moments in gait occurred at follow-up.
- Lack of other differences suggest no worsening mechanics after this program

Abstract

Lower limb strengthening exercise is pivotal for the management of symptoms related to knee osteoarthritis (OA).

Though improvement in clinical symptoms is well documented, concurrent changes in gait biomechanics are ill-defined. This may occur because discrete analyses miss changes following an intervention, analyses limited to the knee undermine potential mechanical trade-offs at other joints, or strengthening interventions not been designed based off biomechanical principles. The purpose of this study was to characterize differences in entire gait waveforms for sagittal plane ankle, knee, and hip angles and external moments; the knee adduction moment; and frontal plane hip angle and moment following 12-weeks of a previously designed novel lower limb strengthening program. Forty women with knee OA completed two laboratory visits: one at baseline and one immediately following intervention (follow-up). Self-report measures, strength, and gait analysis were completed at each visit. Principal Components Analyses were completed for sagittal angles and external moments at the ankle, knee, and hip joints, as well as frontal plane angle and moment for the hip. Participants improved self-report and strength ($p \leq 0.004$). Two significant, yet subtle differences in principal components were identified between baseline and follow-up waveforms ($p < 0.05$) pertaining to the knee and hip sagittal external moments.

The subtle changes in concert with the lack of differences in other joints and planes suggest the lower limb strengthening program does not translate to changes in the gait waveform. It is likely this program is improving symptoms without worsening mechanics.

59. PAIN**Deep brain stim for neuropathic pain**

World Neurosurg. 2017 Jul 11. pii: S1878-8750(17)31081-1. doi: 10.1016/j.wneu.2017.06.173.

Long-term results of Deep Brain Stimulation of the Anterior Cingulate Cortex for Neuropathic Pain.

Boccard SG¹, Prangnell SJ², Pycroft L³, Cheeran B³, Moir L³, Pereira EA⁴, Fitzgerald JJ³, Green AL³, Aziz TZ³.

BACKGROUND:

Deep Brain Stimulation of the Anterior Cingulate Cortex is a recent technique that has shown some promising short-term results in patients with chronic refractory neuropathic pain. Three years after the first case-series, we assessed its efficacy on a larger cohort, with longer follow-up.

METHODS:

24 patients (19 males; 49.1 years) with neuropathic pain underwent bilateral ACC DBS. Patient reported outcome measures were collected pre- and post-surgery, using the Numerical Rating Scale (NRS), Short-Form 36 quality of life (SF-36), McGill pain (MPQ) and EuroQol-5D questionnaires.

RESULTS:

22 patients after a trial week were fully internalized and 12 had a mean follow-up of 38.9 months. Six months post-surgery the mean NRS score dropped from 8.0 to 4.27 (P=.004). There was a significant improvement in the MPQ (mean -36%; P=.021) and EQ-5D score significantly decreased (mean -21%; P=.036). The PF domain of SF-36 was significantly improved (mean +54.2%; P=.01). Furthermore, in 83% of these patients: at 6 months NRS was improved by 60% (P<.001) and MPQ decreased by 47% (P<.01). After 1 year, NRS decreased by 43% (P<.01), EQ-5D was significantly reduced (mean -30.8; P=.05) and significant improvements were also observed for different domains of the SF-36. At longer follow-ups, efficacy was sustained up to 42 months in some patients, with a NRS as low as 3.

CONCLUSIONS:

Follow-up results confirm that ACC DBS alleviates chronic neuropathic pain refractory to pharmacotherapy and improves quality of life in a significant number of patients.

Optimism and pain

J Behav Med. 2017 Jul 17. doi: 10.1007/s10865-017-9874-7

Relationship between daily pain and affect in women with rheumatoid arthritis: lower optimism as a vulnerability factor.

Kwissa-Gajewska Z¹, Gruszczyńska E².

The aim of the study was to examine the moderating effect of optimism on the relationship between daily pain-daily affect.

Fifty-four female patients with rheumatoid arthritis completed self-report measures of optimism (once), daily pain and daily positive and negative affect for 7 consecutive days during hospitalization. Results of multilevel random coefficients modeling demonstrated a significant cross-level interaction for daily negative affect only. Simple slopes analysis revealed that low optimism was related to a stronger positive relationship between daily pain and daily negative affect, whereas this effect was insignificant for higher optimism. High optimism was also related to higher daily positive affect, regardless of pain level.

These findings suggest that low optimism may be a vulnerability factor in the daily pain-daily affect relationship rather than high optimism acting as a protective factor.

Abuse and pain

Clin J Pain. 2017 Aug;33(8):687-693. doi: 10.1097/AJP.0000000000000469.

Impact of Abuse on Adjustment and Chronic Pain Disability: A Structural Equation Model.

Mehta S¹, Rice D, Chan A, Shapiro AP, Sequeira K, Teasell RW.

INTRODUCTION/AIM:

Sexual abuse, state and trait psychosocial factors, pain intensity, and pain-related disability have been shown to be correlated among individuals with chronic pain. However, the interacting relationships among these factors are poorly understood. The current study aims to test model which examines the effect of abuse, state and trait psychosocial factors, and pain intensity on pain-related disability among individuals with chronic pain.

METHODS:

In total, 229 participants diagnosed with chronic pain were recruited from a specialist chronic pain hospital in London, Ontario. Participants completed self-report measures related to sexual abuse history, pain intensity, personality (anxiety sensitivity, experiential avoidance, perfectionism), and adjustment (depression, anxiety, disability, maladaptive worrying). A path analysis was used to test the relationship among these variables.

RESULTS:

The model provided a close fit to the data ($\chi^2=17.02$; $P=0.71$; root-mean-square error of approximation=0.00; normal fit index=0.97; comparative fit index=1.0). The model demonstrates the direct and indirect effects of childhood sexual abuse on state and trait psychosocial factors among individuals with chronic pain. Pain anxiety, maladaptive worrying, and pain intensity were the main determinants of pain-related disability.

DISCUSSION/CONCLUSIONS:

The current model has important implications in understanding the interplay of factors involved in adjustment of individuals with chronic pain. Sexual abuse did not have a direct effect on pain-related disability. However, indirect effects through other psychosocial factors were demonstrated.

62 A. NUTRITION/VITAMINS**Glycemic index and depression****Higher dietary glycemic index, but not glycemic load, is associated with a lower prevalence of depressive symptoms in a cross-sectional study of young and middle-aged Japanese women**

European Journal of Nutrition

Minobe N, et al.

Associations between dietary glycemic index (GI), glycemic load (GL) and depressive symptoms were assessed in a study population of Japanese women. As per findings, in a group of young and middle-aged Japanese women with relatively high dietary GI and GL, an inverse link between depressive symptoms and dietary GI, but not GL, was evident.

Methods

- This study included 3963 young (age 18-years) and 3826 middle-aged (mean age 47.8 years) Japanese women.
- Researchers used a validated diet history questionnaire to assess dietary GI and GL.
- Depression symptoms were defined as present when subjects had a Center for Epidemiologic Studies Depression score ≥ 16 .

Results

- Findings reported that the prevalence of depressive symptoms was 50.2% for young women and 27.3% for middle-aged women.
- According to data, the mean (SD) values of energy-adjusted dietary GI and GL (GI for glucose = 100) were, respectively, 64.9 (4.3) and 142.0 (27.4) for young women and 65.0 (4.1) and 142.2 (29.5) for middle-aged women.
- Researchers found that after adjustment for potential confounding factors, higher dietary GI was associated with a lower prevalence of depressive symptoms.
- They also noted that the adjusted OR (95% CI) for depressive symptoms in the highest compared to lowest quintiles of dietary GI was 0.66 (0.52, 0.82) for young women (P for trend = 0.001) and 0.75 (0.60, 0.96) for middle-aged women (P for trend = 0.046).
- Conversely, data reported no association between dietary GL and depressive symptoms in either age group.

Coffee and reduced risk of cancer

Cancer Sci. 2017 Jul 26. doi: 10.1111/cas.13328.

Association of coffee consumption with all-sites cancer incidence and mortality.

Sado J¹, Kitamura T¹, Kitamura Y¹, Sobue T¹, Nishino Y², Tanaka H³, Nakayama T⁴, Tsuji I⁵, Ito H³, Suzuki T⁴, Katanoda K⁶, Tominaga S³; Three-Prefecture Cohort Study Group.

The preventive effect of coffee on cancer at different sites has been reported, although the effect on all-sites cancer incidence has not been extensively investigated.

We evaluated the association between frequency of coffee consumption and risk of all-sites cancer incidence and mortality among 39,685 men and 43,124 women (age 40 to 79 years, at baseline), in the Three Prefecture Cohort Study. The association between frequency of coffee consumption and risk of all-sites cancer incidence and mortality was assessed by a Cox proportional hazards regression model, adjusted for potential confounders. During 411,341 person-years among men and 472,433 person-years among women, a total of 4,244 men and 2,601 women developed cancer at different sites and a total of 3,021 men and 1,635 women died of cancer at different sites. We showed an inverse association between frequency of coffee consumption and all-sites cancer incidence in both men and women. Comparing participants who consumed coffee with those who never drank coffee, the adjusted hazard ratios (HRs) [95% confidential interval (CI)] for all-sites cancer incidence was 0.74 (0.62-0.88) for coffee consumption of ≥ 5 cups/day in men (p for trend < 0.001) and 0.76 (0.58-1.02) in women (p for trend = 0.020).

Coffee consumption frequency was inversely associated with mortality from all-sites cancer. In this population, increasing coffee consumption resulted in a decreased risk of all-sites cancer incidence and mortality. This article is protected by copyright. All rights reserved.

Fermented soy helps heart**Fermented soy product intake is inversely associated with the development of high blood pressure: The Japan Public Health Center–Based Prospective Study**
The Journal of Nutrition

sponsor

Nozue M, et al.

Effect of habitual consumption of soy products, including fermented soy products, on high blood pressure (BP) development during 5-y period was assessed. Findings demonstrated an inverse relationship between intake of fermented soy products, but not total or nonfermented soy products, and high BP development in normotensive males and females.

Methods

- Researchers performed this current study including normotensive participants aged 40–69 y at baseline (926 men and 3239 women) who completed 2 questionnaires and whose BP was measured at the baseline survey between 1993 and 1994 and the 5-y follow-up in the Japan Public Health Center–Based Prospective Study Cohort II.
- They assessed the intake of soy products with a food-frequency questionnaire.
- High BP was defined as systolic blood pressure ≥ 130 mm Hg, diastolic blood pressure ≥ 85 mm Hg, or antihypertensive medication use.
- They also used multiple logistic regression analysis to estimate ORs and 95% CIs of high BP by frequency of soy products (miso, natto, and tofu) consumption, intake of total and fermented soy products, and intake of isoflavones from total and fermented soy products.

Results

- Findings demonstrated that multivariable-adjusted ORs of high BP for the highest compared with the lowest tertile of fermented and total soy product intake were 1.03 (95% CI: 0.84, 1.25; P-trend = 0.786) and 0.72 (95% CI: 0.56, 0.92; P-trend = 0.009), respectively.
- Researchers also noted that the frequency of nonfermented soy product (tofu) intake was not associated with the development of high BP (P-trend = 0.597).

63. PHARMACOLOGY

NSAID toxicity

The risk of major NSAID toxicity with celecoxib, ibuprofen or naproxen: A secondary analysis of the PRECISION randomized controlled clinical trial

American Journal of Medicine

Solomon DH, et al.

This trial was performed to examine the risk of major non-steroidal anti-inflammatory drugs (NSAIDs) toxicity. Collected data represented that among patients with symptomatic arthritis who had moderate to high risk of cardiovascular events, approximately one in twenty experienced a major toxicity over 1–2 years. A significantly higher risk of major toxicity was reported in patients using naproxen or ibuprofen compared to those using celecoxib.

Methods

- This analysis consisted of 24,081 patients with osteoarthritis or rheumatoid arthritis at moderate or high cardiovascular risk.
- All the participants were randomized to receive celecoxib 100–200mg twice daily, ibuprofen 600–800mg thrice daily, or naproxen 375–500mg twice daily.
- A proton pump inhibitor was provided to all patients.
- The outcome was major NSAID toxicity, including time to first occurrence of major adverse cardiovascular events, important gastrointestinal events, renal events and all-cause mortality.

Results

- 4.1% of subjects in the celecoxib arm sustained any major toxicity, 4.8% in the naproxen arm, and 5.3% in the ibuprofen arm, during follow-up.
- Analyses adjusted for aspirin use and geographic region revealed that subjects in the naproxen arm had a 19% (95% CI 1–39%) higher risk of major toxicity than celecoxib users and ibuprofen users had a 41% (95% CI 21–65%) higher risk.
- These risks translate into numbers needed to harm of 135 (95% CI 72–971) for naproxen and 82 (95% CI 53–173) for ibuprofen, both compared with celecoxib.