PT sexual harassment

Most physical therapists face sexual harassment from patients

Reuters Health News

Inappropriate patient sexual behavior remains a common experience for physical therapists during their careers, according to a recent US study. More than 80% of nearly 900 physical therapists surveyed said they have encountered sexual remarks, touches, indecent exposure and sexual assault. Almost half said they've experienced one of these situations in the past year - numbers that haven't changed since the last major surveys in the 1990s. "The numbers stand for themselves, and it's quite alarming," said lead author Jill Boissonnault, George Washington University School of Medicine and Health Sciences, Washington, DC. US health care professionals have 16 times greater risk for non-fatal violence at work than other fields, the study authors write in Physical Therapy, online August 21. "Many of us are not trained in how to deal with this behavior, which can lead to consequences for both the physical therapist and the patient, who may be discharged from care early when this happens," Boissonnault told Reuters Health by phone. The most recent studies that focused specifically on patient sexual harassment and physical therapists were done in the US, Canada and Australia in the late 1990s. At that time, nearly 80% of therapists said they had experienced sexual harassment, and one quarter of those reported psychological consequences such as anger, guilt, fear, anxiety and depression. "It's important to pull out those particular numbers because sexual harassment by a patient is a different situation than with a coworker or boss," said co-author Ziadee Cambier, Swedish Medical Center, Seattle. "We have a duty of care to the patient," Cambier told Reuters Health. "The way we address that behavior is entangled with meeting the healthcare needs of the patient and our own ethical and legal obligations." The research team surveyed 892 physical therapists and physical therapy students across the country, recruited through physical therapy academic programs and the American Physical Therapy Association. About 80% were women, and 60% reported working with patients who had dementia, delirium or brain injuries. Most treated an equal number of male and female patients. Researchers found that 84% of survey participants had experienced inappropriate patient sexual behavior during their career, and 47% during the past year. Women reported significantly higher rates of harassment, especially staring, suggestive remarks, inappropriate touches, date requests, sexual gestures, requests for sexual activity and masturbation. Several factors increased the risk of experiencing inappropriate behavior, such as routinely working with patients with brain impairments and having fewer than five years of direct patient experience. Harassment was most common between a female therapist and male patient. Treating mostly male patients increased the odds of harassment by almost 400%, and treating an equal mix of patients doubled the odds, as compared to those who mainly treated female patients. In the open-ended portion of the survey, therapists shared details about some of their experiences and how they were affected. Several physical therapists also talked about the lack of support, training and policies related to patient sexual harassment. "I was told that when patients were inappropriate with me, it was 'part of the job,'" one therapist reported. "I did not have support from management to address the situation or to take further steps." Future studies should also look at organizational policies and practices about employee safety, said Paul Spector, University of South Florida, Tampa, who was not involved in the study. "In organizations with a good climate, supervisors are supportive," he told Reuters Health. "There are policies in place to prevent this experience and respond appropriately when it happens." Educating patients about professional guidelines may be helpful as well, he added. "The public should be aware and appreciate what the providers who help them when they are ill have to put up with," Spector said. "Maybe a little understanding might encourage people to treat them with more kindness." —Carolyn Crist

2. LBP

LBP and Exercise and sucession smoking

Spine (Phila Pa 1976). 2017 Aug 15;42(16):1220-1225. doi: 10.1097/BRS.0000000000002063.

Associations Between Low Back Pain and Muscle-strengthening Activity in U.S. Adults.

Alnojeidi AH[1], Johnson TM, Richardson MR, Churilla JR.

STUDY DESIGN:
This was a cross-sectional study.

OBJECTIVE:
The primary aim of the study was to examine the association between low back pain (LBP) and muscle-strengthening activity (MSA) among U.S. adults using gender-stratified analyses.

SUMMARY OF BACKGROUND DATA:
LBP is a common medical condition that impacts quality of life and professional productivity and increases the financial burden on the health care system by augmenting medical treatment costs. Previous studies analyzing gender-dependent relationships between MSA and LBP have produced mixed results.

METHODS:
Our sample included 12,721 participants from the 1999 to 2004 National Health and Nutrition Examination Survey (NHANES). Participants were categorized into one of three levels of self-reported MSA: no MSA, insufficient MSA (1 day/wk), or meeting the 2008 Department of Health and Human Services (DHHS) recommendation for MSA (≥2 days/wk).

RESULTS:
Gender-stratified analyses revealed significantly lower odds of reporting LBP among women [odds ratio (OR) 0.82, 95% confidence interval (CI) 0.70-0.96, P=0.03] and men (OR 0.86; 95% CI 0.70-0.96, P=0.01) who reported amounts of MSA that met the DHHS recommendation compared with those reporting no MSA. Following adjustment for smoking status, the odds remained significant among women (P=0.03) but not among men (P=0.21).

CONCLUSION:
These findings indicate that engaging in MSA at least 2 days/wk is associated with lower odds of LBP and that smoking may be an important mediating factor that should be considered in future LBP research.

No evidence of splinting

Eur Spine J. 2017 Sep 12. doi: 10.1007/s00586-017-5287-0.

Evidence of splinting in low back pain? A systematic review of perturbation studies.

Prins MR[1,2,3], Griffioen M[4], Veeger TTJ[4], Kiers H[5], Meijer OG[4,6], van der Wurff P[7,5], Bruijn SM[4,6], van Dieën JH[4].

PURPOSE:
The purpose of this systematic review was to assess whether LBP patients demonstrate signs of splinting by evaluating the reactions to unexpected mechanical perturbations in terms of (1) trunk muscle activity, (2) kinetic and (3) kinematic trunk responses and (4) estimated mechanical properties of the trunk.

METHODS:
The literature was systematically reviewed to identify studies that compared responses to mechanical trunk perturbations between LBP patients and healthy controls in terms of muscle activation, kinematics, kinetics, and/or mechanical properties. If more than four studies reported an outcome, the results of these studies were pooled.

RESULTS:
Nineteen studies were included, of which sixteen reported muscle activation, five kinematic responses, two kinetic responses, and two estimated mechanical trunk properties. We found evidence of a longer response time of muscle activation, which would be in line with splinting behaviour in LBP. No signs of splinting behaviour were found in any of the other outcome measures.

CONCLUSIONS:
We conclude that there is currently no convincing evidence for the presence of splinting behaviour in LBP patients, because we found no indications for splinting in terms of kinetic and kinematic responses to perturbation and derived mechanical properties of the trunk. Consistent evidence on delayed onsets of muscle activation in response to perturbations was found, but this may have other causes than splinting behaviour.

ABSTRACTS

MRI findings

AJNR Am J Neuroradiol. 2017 Sep;38(9):1826-1832. doi: 10.3174/ajnr.A5357. Epub 2017 Aug 3.

Prospective Comparison of Changes in Lumbar Spine MRI Findings over Time between Individuals with Acute Low Back Pain and Controls: An Exploratory Study.

Panagopoulos J[1], Magnussen JS[1,2], Hush J[1,2], Maher CG[3], Crites-Battie M[4], Jarvik JG[5], Jensen TS[6,7,8], Hancock MJ[9,2].

BACKGROUND AND PURPOSE:
The clinical importance of lumbar MR imaging findings is unclear. This study was an exploratory investigation of whether lumbar spine MR imaging findings change more commonly during a 12-week period in individuals with acute low back pain compared with pain-free controls.

MATERIALS AND METHODS:
Twenty individuals with recent-onset low back pain and 10 pain-free controls were recruited into an exploratory prospective cohort study. All participants had a lumbar spine MR imaging at baseline and repeat MR imaging scans at 1, 2, 6, and 12 weeks. The proportion of individuals who had MR imaging findings that changed during the 12-week period was compared with the same proportion in the controls.

RESULTS:
In 85% of subjects, we identified a change in at least 1 MR imaging finding during the 12 weeks; however, the proportion was similar in the controls (80%). A change in disc herniation, annular fissure, and nerve root compromise was reported more than twice as commonly in the subjects as in controls (65% versus 30%, 25% versus 10%, and 15% versus 0%, respectively). Caution is required in interpreting these findings due to wide confidence intervals, including no statistical difference. For all other MR imaging findings, the proportions of subjects and controls in whom MR imaging findings were reported to change during 12 weeks were similar.

CONCLUSIONS:
Changes in MR imaging findings were observed in a similar proportion of the low back pain and control groups, except for herniations, annular fissures, and nerve root compromise, which were twice as common in subjects with low back pain.

5. SURGERY

Fusion

Spine (Phila Pa 1976). 2017 Sep 15;42(18):E1077-E1086. doi: 10.1097/BRS.0000000000002068.

Decompression Surgery Alone Versus Decompression Plus Fusion in Symptomatic Lumbar Spinal Stenosis: A Swiss Prospective Multicenter Cohort Study With 3 Years of Follow-up.

Ulrich NH[1], Burgstaller JM, Pichierri G, Wertli MM, Farshad M, Porchet F, Steurer J, Held U; LSOS Study Group.

STUDY DESIGN:
Retrospective analysis of a prospective, multicenter cohort study.

OBJECTIVE:
To estimate the added effect of surgical fusion as compared to decompression surgery alone in symptomatic lumbar spinal stenosis patients with spondylolisthesis.

SUMMARY OF BACKGROUND DATA:
The optimal surgical management of lumbar spinal stenosis patients with spondylolisthesis remains controversial.

METHODS:
Patients of the Lumbar Stenosis Outcome Study with confirmed DLSS and spondylolisthesis were enrolled in this study. The outcomes of this study were Spinal Stenosis Measure (SSM) symptoms (score range 1-5, best-worst) and function (1-4) over time, measured at baseline, 6, 12, 24, and 36 months follow-up. In order to quantify the effect of fusion surgery as compared to decompression alone and number of decompressed levels, we used mixed effects models and accounted for the repeated observations in main outcomes (SSM symptoms and SSM function) over time. In addition to individual patients' random effects, we also fitted random slopes for follow-up time points and compared these two approaches with Akaike's Information Criterion and the chi-square test. Confounders were adjusted with fixed effects for age, sex, body mass index, diabetes, Cumulative Illness Rating Scale musculoskeletal disorders, and duration of symptoms.

RESULTS:
One hundred thirty-one patients undergoing decompression surgery alone (n=85) or decompression with fusion surgery (n=46) were included in this study. In the multiple mixed effects model the adjusted effect of fusion compared with decompression alone surgery on SSM symptoms was 0.06 (95% confidence interval: -0.16-0.27) and -0.07 (95% confidence interval: -0.25-0.10) on SSM function, respectively.

CONCLUSION:
Among the patients with degenerative lumbar spinal stenosis and spondylolisthesis our study confirms that in the two groups, decompression alone and decompression with fusion, patients distinctively benefited from surgical treatment. When adjusted for confounders, fusion surgery was not associated with a more favorable outcome in both SSM scores as compared to decompression alone surgery.

Fusion

Identifying subsets of patients with single-level degenerative disc disease for lumbar fusion: the value of prognostic tests in surgical decision making

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Marc L. Schröder, MD, PhD

DOI: http://dx.doi.org/10.1016/j.spinee.2017.08.242

Background Context

Fusion surgery for degenerative disc disease (DDD) has become a standard of care, albeit not without controversy. Outcomes are inconsistent and a superiority over conservative treatment is debatable. Proper patient selection is key to clinical success, and a comprehensive understanding of prognostic tests does not currently exist.

Purpose To investigate the value of prognostic tests and sociodemographic factors in predicting outcomes following lumbar fusion surgery for DDD.

Study Design

This is a retrospective analysis of prospectively collected data.

Patient Sample

We included patients who underwent fusion surgery for DDD between 2010 and 2016.

Outcome Measures

The outcome measures included pre- and postoperative Visual Analogue Scale and Oswestry Disability Index scores.

Materials and Methods

Prospectively collected patient data was reviewed for preoperative tests, perioperative data and clinical outcomes. Prognostic tests used were discography, pantaloon cast test, Modic changes and a summary of physical symptoms, coined “loading factor”. By means of multivariate stepwise regression, prognostic factors that were useful in predicting outcomes were identified. VS, PV and DZ declare no potential conflicts of interest. MS is a consultant to Mazor Robotics, Ltd.

Results

A total of 91 patients fit the inclusion criteria, with a mean follow-up of 33±16 months. Discography, Modic changes and loading factor were of no value for predicting outcome scores ($p > 0.05$). A positive pantaloon cast test predicted improved outcomes in back pain severity, but only in patients without prior surgery ($p = 0.02$). Demographic factors which showed a consistent reduction in back pain were female sex ($p = 0.021$) and no prior surgery at index level ($p = 0.009$). No other sociodemographic factors were of predictive value ($p > 0.05$).

Conclusions

In patients without prior surgery, the pantaloon cast test appears to be the most promising prognostic tool. Other prognostic selection tools such as discography and Modic changes yield disappointing results. In this study female patients and those without prior spine surgery appear to be most likely to benefit from fusion surgery for DDD.

6. PELVIC GIRDLE

TA and pelvic girdle pain

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Contraction of the transverse abdominal muscle in pelvic girdle pain is enhanced by pain provocation during the task

Jan M. Mens Annelies Pool-Goudzwaard
DOI: http://dx.doi.org/10.1016/j.msksp.2017.09.001

- Contraction of the transverse abdominal muscle is studied in pelvic girdle pain.
- The contraction is close to zero as long as the task is not pain provoking.
- The contraction is enhanced as the task provokes pain.
- The results of this study may have consequences for the treatment of this patient group.

Abstract

Background

Understanding of the pathogenesis of pain in the lumbopelvic region remains a challenge. It is suggested that lumbopelvic pain is related to decreased contraction of the transverse abdominal muscles (TrA).

Objective

To investigate how pain provoked by a task influences TrA contraction during that task.

Design

A case-control cross-sectional study.

Method

We recruited 40 non-pregnant women with persistent pregnancy-related posterior pelvic girdle pain (PGP) and 33 parous women (healthy controls) without PGP. TrA thickness was measured by ultrasound at various levels of bilateral hip adduction, with increments of 20 N from 0 to 140 N. Pain during the tests was registered.

Results

After correction for the level of adduction force, TrA thickness increase during pain-provoking tests of participants with PGP was 6.3 percentage points higher than in their pain-free tests ($p = 0.01$) and 0.91 percentage points higher than in the pain-free tests of healthy controls ($p < 0.01$).

Conclusion

TrA contraction in PGP is enhanced when a task provokes pain. These results may have consequences for the treatment of persistent pregnancy-related posterior pelvic girdle pain.

Coccygectomies

Coccygectomy for posttraumatic coccygodynia: a long-term prospective study

El Mohsen Arafa, Abd MD; El Rady Mahmoud, Abd MD; Zayan, Mohammed MD; Kotb, Ahmed MD

Current Orthopaedic Practice: September/October 2017 - Volume 28 - Issue 5 - p 484–488

doi: 10.1097/BCO.0000000000000536
Original Research

Background: Coccygodynia is pain around the coccyx; its most common etiology is trauma. About 20% of patients do not respond to conservative measures in the form of medical treatment, local injection, or physical therapy. Our prospective clinical study aims at highlighting the results of coccygectomy for coccygodynia caused by trauma that could not be treated conservatively.

Methods: Thirty eight patients were included in the study with 28 women (73.7%) and 10 men (26.3%). After failure of conservative treatment measures, coccygectomy was done in all patients. The duration of symptoms before the surgical procedure varied between 9 and 48 mo with a mean of 19.6 mo. Clinical presentation of the local pain was quantified according to a visual analog scale (VAS) on deep manual palpation at the tip of coccyx preoperatively and at 4 mo, 12 mo, then at 2-year and 4-year follow-up.

Results: The mean preoperative VAS was 9.2, at 4 mo it was 2.7, and at 12 mo it was 1.8. At 2 and 4-year postoperative follow-up, VAS was 1.5 and 1.3, respectively (P=0.0001).

Conclusion: Coccygectomy for coccygodynia caused by a traumatic event affords significant pain relief postoperatively. Coccygectomy is recommended as a last resort treatment for coccygodynia after failed conservative treatment.

Level of Evidence: Level IV (prospective study).

7. PELVIC ORGANS/WOMAN'S HEALTH

Vestibulodynia

Clin J Pain. 2017 Oct;33(10):870-876. doi: 10.1097/AJP.0000000000000480.

Provoked Vestibulodynia: A Comparative Examination of Mental Health, Sleep, Sexual Functioning, and Relationship Adjustment.

Dargie E[1], Gilron I, Pukall CF.

OBJECTIVES:
Provoked vestibulodynia (PVD) is an idiopathic vulvar pain condition characterized by burning pain at the vaginal opening in response to contact or pressure. Previous research has established some of the psychosocial difficulties experienced by these patients, but direct comparisons with other pain conditions are needed. The purpose of this study was to compare women with PVD to those with postherpetic neuralgia and pain-free control participants.

MATERIALS AND METHODS:
Participants were invited to complete an anonymous online survey consisting of sociodemographic questions and a range of validated measures.

RESULTS:
Women with PVD and postherpetic neuralgia (PHN) did not differ in terms of pain catastrophizing or pain anxiety, but women with PHN reported greater pain disability than those with PVD. Participants in both pain groups reported significantly more symptoms of stress, depression, anxiety, and sleep disturbances than pain-free controls; women with PHN reported more symptoms of depression than those with PVD, with no other differences between pain groups. Groups did not differ on relationship adjustment, but participants with PVD reported poorer sexual functioning than the other groups.

DISCUSSION:
These results indicate that women with PVD and PHN experience similar mental health difficulties, but women with PHN experience more severe impact on their day-to-day functioning and mood. These results support the classification of PVD as a chronic pain condition, as both the pain groups differed from pain-free control participants on a range of measures. Finally, the presence of mental health difficulties and poorer sexual functioning highlights the importance of conducting biopsychosocial pain assessments.

Men's pelvic floor rx

Comprehensive pelvic floor physical therapy for men with idiopathic chronic pelvic pain syndrome: A prospective study
Fertility and Sterility | September 12, 2017
Savio LF, et al.

A comprehensive examination was conducted of men with Chronic Pelvic Pain Syndrome (CPPS), who underwent comprehensive pelvic floor physical therapy program for symptom improvement. It was deduced that this therapy could serve as an effective treatment for select patients. In order to validate the routine use of pelvic floor rehabilitation in men with CPPS and to speculate the characteristics of men who would respond to therapy, prospective research was necessitated.

Methods

- The enrollees comprised of 14 men who underwent physical therapy for idiopathic CPPS from October 2015 to October 2016.
- The exclusion criteria was men with clearly identifiable causes of pelvic pain, such as previous surgery, chronic infection, trauma, prostatitis and epididymitis.
- The therapy consisted of manual therapy of pelvic floor and abdominal musculature; therapeutic exercises; biofeedback and electrical stimulation.
- NIH-CPSI questionnaires were collected at initial evaluation, every subsequent 10th visit, and discharge.

Results

- Higher scores reflected worse symptoms.
- A reduction of 7 points to robustly speculate being a treatment responder (sensitivity 100%, specificity 76%) and a change in 4 points to predict modest response was obtained from previous validation of the modified NIH-CPSI.

Diet and fertility

Am J Obstet Gynecol. 2017 Aug 24. pii: S0002-9378(17)30945-6. doi: 10.1016/j.ajog.2017.08.010.

Diet and fertility: a review.

Gaskins AJ[1], Chavarro JE[2].

The literature on the relationship between diet and human fertility has greatly expanded over the last decade, resulting in the identification of a few clear patterns. Intake of supplemental folic acid, particularly at doses higher than those recommended for the prevention of neural tube defects, has been consistently related to lower frequency of infertility, lower risk of pregnancy loss, and greater success in infertility treatment. On the other hand and despite promising evidence from animal models, vitamin D does not appear to exert an important role in human fertility in the absence of deficiency. Antioxidant supplementation does not appear to offer any benefits to women undergoing infertility treatment, but it appears to be beneficial when it is the male partner who is supplemented. However, the available evidence does not allow discerning which specific antioxidants, or at which doses, are responsible for this benefit. Long-chain omega-3 fatty acids appear to improve female fertility, although it remains unclear to what extent contamination of shared food sources, such as fish with high levels of environmental toxicants, can dampen this benefit.

Lastly, adherence to healthy diets favoring seafood, poultry, whole grains, fruits, and vegetables are related to better fertility in women and better semen quality in men. The cumulative evidence has also piled against popular hypotheses. Dairy and soy, once proposed as reproductive toxicants, have not been consistently related to poor fertility. In fact, soy and soy supplements appear to exert a beneficial effect among women undergoing infertility treatment. Similarly, because data from large, high-quality studies continue to accumulate, the evidence of a potentially deleterious effect of moderate alcohol and caffeine intake on the ability to become pregnant seems less solid than it once did. While a complete picture of the role of nutrition on fertility is far from complete, much progress has been made. The most salient gaps in the current evidence include jointly considering female and male diets and testing the most consistent findings in randomized trials.

Acupuncture and dysmenorrhea

BMC Complement Altern Med. 2017 Aug 31;17(1):436. doi: 10.1186/s12906-017-1924-8.

Effects of acupoint-stimulation for the treatment of primary dysmenorrhoea compared with NSAIDs: a systematic review and meta-analysis of 19 RCTs.

Xu Y[1,2], Zhao W[1,3], Li T[4], Bu H[5], Zhao Z[6], Zhao Y[7,8], Song S[9].

Abstract

BACKGROUND:

Primary dysmenorrhoea (PD), defined as painful menses in women with normal pelvic anatomy, is one of the most common gynaecological syndromes. Acupoint-stimulation could potentially be an effective intervention for PD. Our aim was to determine the effectiveness of acupoint-stimulation compared with Non-Steroidal Anti-Inflammatory Drugs (NASIDs) in the treatment of PD.

METHODS:

Six databases were searched to December 2014. Sixteen studies involving 1679 PD patients were included. We included randomized controlled trials that compared acupoint-stimulation with NASIDs for the treatment of PD. The main outcomes assessed were clinical effectiveness rate, symptom score, visual analogue score, variation in peripheral blood prostaglandin F2α (PGF2α) and side effects. All analyses were performed using Comprehensive Meta-Analysis statistical software.

RESULTS:

(1) The total efficacy was better than control group: odds ratio = 5.57; 95% confidence interval (95% CI) = 3.96, 7.83; P < 0.00001; (2) The effect of intervention was positive in relieving the severity of PD symptoms: mean difference (MD) = 2.99; 95%CI = 2.49, 3.49; P < 0.00001; (3) No statistical difference existed between two groups in terms of a reduction in the VAS: MD = 1.24; 95%CI = -3.37, 5.85; P = 0.60; (4) The effect of intervention on the variation in peripheral blood PGF2α between two groups was positive: MD = 7.55; 95%CI = 4.29,10.82; P < 0.00001; (5) The side effects of control groups was more than the acupoint-stimulation group: OR = 0.03; 95%CI =0.00,0.22; P = 0.0005.

CONCLUSIONS:

According to this article, acupoint-stimulation can relieve pain effectively in the treatment of PD and offers advantages in increasing the overall effectiveness.

8. VISCERA

Relationship of IBD and Autoimmune diseases

World J Gastroenterol. Sep 7, 2017; 23(33): 6137-6146
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Patients with inflammatory bowel disease have increased risk of autoimmune and inflammatory diseases

Morten L Halling, Jens Kjeldsen, Torben Knudsen, Jan Nielsen, Lars Koch Hansen

AIM

To investigate whether immune mediated diseases (IMD) are more frequent in patients with inflammatory bowel disease (IBD).

METHODS

In this population based registry study, a total of 47325 patients with IBD were alive and registered in the Danish National Patient Registry on December 16, 2013. Controls were randomly selected from the Danish Civil Registration System (CRS) and matched for sex, age, and municipality. We used ICD 10 codes to identify the diagnoses of the included patients. The IBD population was divided into three subgroups: Ulcerative colitis (UC), Crohn's disease (CD) and Both the latter referring to those registered with both diagnoses. Subsequently, odds-ratios (OR) and 95%CI were obtained separately for each group and their respective controls. The use of Bonferoni post-test correction adjusted the significance level to $P < 0.00125$. *P*-values were estimated using Fisher's exact test.

RESULTS

There were significantly more women than men in the registry, and a greater percentage of comorbidity in the IBD groups ($P < 0.05$). Twenty different IMDs were all significantly more frequent in the IBD group. Sixteen were associated with UC versus twelve with CD. In both UC and CD ORs were significantly increased ($P < 0.00125$) for primary sclerosing cholangitis (PSC), celiac disease, type 1 diabetes (T1D), sarcoidosis, asthma, iridocyclitis, psoriasis, pyoderma gangrenosum, rheumatoid arthritis, and ankylosing spondylitis. Restricted to UC ($P < 0.00125$) were autoimmune hepatitis, primary biliary cholangitis, Grave's disease, polymyalgia rheumatica, temporal arteritis , and atrophic gastritis. Restricted to CD ($P < 0.00125$) were psoriatic arthritis and episcleritis. Restricted to women with UC ($P < 0.00125$) were atrophic gastritis, rheumatoid arthritis, temporal arteritis, and polymyalgia rheumatica. Restricted to women with CD were episcleritis, rheumatoid arthritis, and psoriatic arthritis. The only disease restricted to men ($P < 0.00125$) was sarcoidosis.

CONCLUSION

Immune mediated diseases were significantly more frequent in patients with IBD. Our results strengthen the hypothesis that some IMDs and IBD may have overlapping pathogenic pathways.

Ketogenic diet helps infant's epilepsy

World J Gastroenterol. Sep 7, 2017; 23(33): 6164-6171 doi: 10.3748/wjg.v23.i33.6164

Ketogenic diet poses a significant effect on imbalanced gut microbiota in infants with refractory epilepsy

Gan Xie, Qian Zhou, Chuang-Zhao Qiu, Wen-Kui Dai, He-Ping Wang, Yin-Hu Li, Jian-Xiang Liao, Xin-Guo Lu, Su-Fang Lin, Jing-Hua Ye, Zhuo-Ya Ma, Wen-Jian Wang

AIM

To investigate whether patients with refractory epilepsy and healthy infants differ in gut microbiota (GM), and how ketogenic diet (KD) alters GM.

METHODS

A total of 14 epileptic and 30 healthy infants were recruited and seizure frequencies were recorded. Stool samples were collected for 16S rDNA sequencing using the Illumina Miseq platform. The composition of GM in each sample was analyzed with MOTHUR, and inter-group comparison was conducted by R software.

RESULTS

After being on KD treatment for a week, 64% of epileptic infants showed an obvious improvement, with a 50% decrease in seizure frequency. GM structure in epileptic infants (P1 group) differed dramatically from that in healthy infants (Health group). Proteobacteria, which had accumulated significantly in the P1 group, decreased dramatically after KD treatment (P2 group). Cronobacter predominated in the P1 group and remained at a low level both in the Health and P2 groups. Bacteroides increased significantly in the P2 group, in which Prevotella and Bifidobacterium also grew in numbers and kept increasing.

CONCLUSION

GM pattern in healthy infants differed dramatically from that of the epileptic group. KD could significantly modify symptoms of epilepsy and reshape the GM of epileptic infants.

Key Words: Ketogenic diet, Cronobacter, Seizures, Gut microbiota, Epilepsy

Core tip: Many infants with epilepsy are refractory to current antiepileptic drugs, and ketogenic diet (KD) could help to moderate seizure frequency as an alternative treatment. A large number of reports have demonstrated that gut microbiota (GM) can affect children's neurodevelopment. Concurrently, GM could be dramatically affected by diet. KD could rapidly alter GM and alleviate seizure frequency in infants with refractory epilepsy. The GM structure of epileptic infants - comprising large numbers of pathogens, such as Streptococcus - differed from that of healthy controls. After KD therapy, GM of epileptic patients changed significantly, with fewer pathogens and more beneficial bacteria.

Inflammatory relapse in UC

Acute histological inflammatory activity is associated with clinical relapse in patients with ulcerative colitis in clinical and endoscopic remission.
Digestive and Liver Diseases | September 14, 2017
Lobaton T, et al.

The role of histology as a risk factor for clinical relapse (CR) in patients in both clinical and endoscopic remission was evaluated. The physicians revealed that the presence of acute histological inflammatory activity (AHA) was a risk factor for clinical relapse in ulcerative colitis (UC) patients in clinical and endoscopic remission.

Methods

- The physicians enrolled patients with left-sided or extensive UC in clinical and endoscopic remission (Mayo endoscopic subscore ≤1) undergoing colonoscopy for dysplasia surveillance with random colonic biopsies between 2005-2015.
- They evaluated basal plasmacytosis, acute (AHA), and the chronic (CHA) histological inflammatory activity of all biopsy sets.

Results

- The physicians included 113 patients.
- At inclusion, median time in clinical remission was 27 months (IQR 15-56).
- Within the first year, 8% of patients relapsed and 33% during the whole follow-up period.
- The presence of AHA was associated with CR within the first year of follow-up, alone (P = 0.048) or together with a past flare within the previous 12 months (P = 0.01) in the univariate analysis.
- AHA remained the only risk factor for relapse (RR = 7.5; IC95%; 1.8-29.9; P = 0.005), together with a flare within the previous 12 months, in the multivariate analysis.

Low FODMAT diet and GI distress

Med Sci Sports Exerc. 2017 Sep 7. doi: 10.1249/MSS.0000000000001419.

Low FODMAP: A Preliminary Strategy to Reduce Gastrointestinal Distress in Athletes.

Lis DM[1], Stellingwerff T, Kitic CM, Fell JW, Ahuja KDK.
Author information

Abstract
INTRODUCTION:
Gastrointestinal (GI) distress in endurance athletes is prevalent and detrimental to performance. Adverse GI symptomatology can be analogous with irritable bowel syndrome, where fermentable oligosaccharide, disaccharide, monosaccharide and polyols (FODMAP) reduction has demonstrated efficacy. This study investigated the effects of low FODMAP (LFOD) diet on GI distress parameters in runners with a history of non-clinical exercise-associated GI symptoms.

METHODS:
Eleven recreationally competitive runners (5 males, 6 females; 5km personal best 23:00±4:02 min:sec) participated in the study. Runners were allocated to a randomized 6-day LFOD or high FODMAP (HFOD) diet separated by a 1-day wash-out in a controlled, single-blinded cross-over study. In each period participants completed two strenuous running sessions consisting of 5x1000m and a 7km threshold run. GI symptoms (during-exercise and daily) and the Daily Analysis of Life Demand for Athletes (DALDA) questionnaires were completed. Area under the curve (AUC) was calculated for daily GI symptoms across each dietary period and analysis was conducted using multilevel mixed-effects linear regression for comparison between the two diets.

RESULTS:
A significantly smaller AUC for daily GI symptoms.6-days during the LFOD compared to HFOD (mean difference -13.4, 95% CI [-22, -4.60], P=0.003) was observed. The daily GI symptoms that were significantly lower during LFOD were flatulence (P<0.001), urge to defecate (P=0.04), loose stool (P=0.03) and diarrhea (P=0.004). No significant differences in during exercise symptoms or DALDA responses were observed between diets (p>0.05).

CONCLUSION:
Preliminary findings suggest that short-term FODMAP reduction may be a beneficial intervention to minimize daily GI symptoms in runners with exercise-related GI distress.

Appetite and ex

J Endocrinol. 2017 Sep 4. pii: JOE-16-0570. doi: 10.1530/JOE-16-0570.

Appetite, food intake and gut hormone responses to intense aerobic exercise of different duration.

Holliday A[1], Blannin AK[2].

This study investigated the effect of acute bouts of high-intensity aerobic exercise of differing durations on subjective appetite, food intake and appetite-associated hormones in endurance-trained males.

Twelve endurance-trained males (age=21±2 years; BMI=21.0±1.6 kg•m-2; VO2max=61.6±6.0 mL• kg-1• min-1) completed four trials, within a maximum 28-day period, in a counterbalanced order: resting (REST); 15-minutes exercise bout (15-MIN); 30-minute exercise bout (30-MIN) and 45-minute exercise bout (45-MIN). All exercise was completed on a cycle ergometer at an intensity of ~76% VO2max. Sixty minutes post-exercise, participants consumed an ad libitum meal. Measures of subjective appetite and blood samples were obtained throughout the morning, with plasma analysed for acylated ghrelin, total polypeptide tyrosine-tyrosine (PYY) and total glucagon-like peptide 1 (GLP-1) concentrations. We found that neither subjective appetite nor absolute food intake differed between trials. Relative energy intake (intake - expenditure) was significantly greater after REST (2641±1616 kJ) compared with both 30-MIN (1039±1520 kJ) and 45-MIN (260±1731 kJ), and significantly greater after 15-MIN (2699±1239 kJ) compared with 45-MIN (condition main effect, $p<0.001$). GLP-1 concentration increased immediately post-exercise in 30-MIN and 45-MIN, respectively (condition-x-time interaction, $p<0.001$). Acylated ghrelin was transiently suppressed in all exercise trials (condition-x-time interaction, $p=0.011$); the greatest, most enduring suppression was observed in 45-MIN. PYY concentration was unchanged with exercise.

High-intensity aerobic cycling lasting up to 45 minutes did not suppress subjective appetite or affect absolute food intake, but did reduce relative energy intake, in well-trained endurance athletes. Findings question the role of appetite hormones in regulating subjective appetite in the acute post-exercise period.

Breast feeding helps to reduce incidence of Crohn's disease

Aliment Pharmacol Ther. 2017 Sep 11. doi: 10.1111/apt.14291.

Systematic review with meta-analysis: breastfeeding and the risk of Crohn's disease and ulcerative colitis.

Xu L[1,2], Lochhead P[1], Ko Y[3], Claggett B[2,4], Leong RW[3], Ananthakrishnan AN[1,2].

BACKGROUND:
Breastfeeding is a modifiable factor that may influence development of inflammatory bowel diseases. However, literature on this has been inconsistent and not accounted for heterogeneity in populations and exposure.

AIM:
To conduct a meta-analysis to examine the association between breastfeeding in infancy and risk of Crohn's disease (CD) and ulcerative colitis (UC).

METHODS:
A systematic search of Medline/PubMed and Embase was performed for full text, English-language literature through November 2016. Studies were included if they described breastfeeding in infancy in patients with CD or UC, and healthy controls. Data were pooled using a random effects model for analysis.

RESULTS:
A total of 35 studies were included in the final analysis, comprising 7536 individuals with CD, 7353 with UC and 330 222 controls. Ever being breastfed was associated with a lower risk of CD (OR 0.71, 95% CI 0.59-0.85) and UC (OR 0.78, 95% CI 0.67-0.91). While this inverse association was observed in all ethnicity groups, the magnitude of protection was significantly greater among Asians (OR 0.31, 95% CI 0.20-0.48) compared to Caucasians (OR 0.78, 95% CI 0.66-0.93; P = .0001) in CD. Breastfeeding duration showed a dose-dependent association, with strongest decrease in risk when breastfed for at least 12 months for CD (OR 0.20, 95% CI 0.08-0.50) and UC (OR 0.21, 95% CI 0.10-0.43) as compared to 3 or 6 months.

CONCLUSION:
Breastfeeding in infancy protects against the development of CD and ulcerative colitis.

IBS after intestinal infection

Gut. 2017 Jun 10. pii: gutjnl-2017-313713. doi: 10.1136/gutjnl-2017-313713.

Incidence of irritable bowel syndrome and chronic fatigue following GI infection: a population-level study using routinely collected claims data.

Donnachie E[1], Schneider A[2], Mehring M[2], Enck P[3].

OBJECTIVES:
To investigate the occurrence of postinfectious IBS in routine outpatient care, comparing different types of GI infection and its interaction with psychosomatic comorbidity.

DESIGN:
Retrospective cohort study using routinely collected claims data covering statutorily insured patients in Bavaria, Germany. Cases were defined as patients without prior record of functional intestinal disorder with a first-time diagnosis of GI infection between January 2005 and December 2013 and classed according to the type of infection. Each case was matched by age, sex and district of residence to a patient without history of GI infection. Prior psychological disorder (depression, anxiety or stress reaction disorder) was assessed in the 2 years prior to inclusion. Proportional hazards regression models were used to estimate the HRs for GI infection and psychological disorder. Chronic fatigue syndrome (CFS) was assessed as a comparator outcome.

RESULTS:
A total of 508 278 patients with first diagnosis of GI infection were identified, resulting in a matched cohort of 1 016 556 patients. All infection types were associated with an increased risk of IBS (HR: 2.19-4.25) and CFS (HR 1.35-1.82). Prior psychological disorder was a distinct risk factor for IBS (HR: 1.73) and CFS (HR: 2.08). Female sex was a further risk factor for both conditions.

CONCLUSION:
Psychological disorder and GI infections are distinct risk factors for IBS. The high incidence of non-specific GI infection suggests that postinfectious IBS is a common clinical occurrence in primary care. Chronic fatigue is a further significant sequela of GI infection.

CV disease and standing

The Relationship Between Occupational Standing and Sitting and Incident Heart Disease Over a 12-Year Period in Ontario, Canada

Peter Smith Huiting Ma Richard H Glazier Mahée Gilbert-Ouimet Cameron Mustard

American Journal of Epidemiology, kwx298, https://doi.org/10.1093/aje/kwx298

Abstract

While a growing body of research is examining the impacts of prolonged occupational sitting on cardiovascular and other health risk factors, relatively little work examined the effects of occupational standing.

The objectives of this paper were to examine the relationship between occupations that require predominantly sitting, and those that require predominantly standing, and incident heart disease. A prospective cohort study combining responses to a population health survey with administrative health care records, linked at the individual level was conducted in Ontario, Canada. The sample included 7320 employed labour market participants (50% male) working 15 hours a week or more and free of heart disease at baseline. Incident heart disease was assessed using administrative records over an approximately 12-year follow-up period (2003-2015). Models were adjusted for a wide range of potential confounding factors. Occupations involving predominantly standing were associated with an approximately two-fold risk of heart disease compared to occupations involving predominantly sitting. This association was robust to adjustment for other health, socio-demographic and work variables. Cardiovascular risk associated with occupations that involve combinations of sitting, standing and walking differed for men and women, with these occupations associated with lower cardiovascular risk estimates among men, but elevated risk estimates among women.

Elimination diet esophagitis

Aliment Pharmacol Ther. 2017 Sep 6. doi: 10.1111/apt.14290. [

Food elimination diets are effective for long-term treatment of adults with eosinophilic oesophagitis.

Reed CC[1], Fan C[1], Koutlas NT[1], Shaheen NJ[1], Dellon ES[1].

BACKGROUND:
Limited data describe the long-term efficacy of dietary elimination in eosinophilic oesophagitis (EoE).

AIM:
To assess the long-term outcomes of food elimination diets for treatment of adults with EoE.

METHODS:
We conducted a retrospective cohort study at our centre analysing all EoE patients receiving a food elimination diet without concomitant steroids. Baseline data were abstracted using standardised collection forms. Follow-up data from a mean 24.9-month period were collected for patients with a histological response to a food elimination diet during and after food reintroduction. The main outcomes were symptomatic, endoscopic and histological responses.

RESULTS:
Of 52 patients, 18 received a 6-food food elimination diet, 32 received targeted diet, and two received a 6-food food elimination diet with targeted elimination. There were 21 (40%) patients with an initial histological response. Responders reported less dysphagia after treatment (95% baseline vs 11%; P = .001) and at the end of follow-up (95% baseline vs 33%; P = .008). Significant and durable endoscopic improvements were recorded at the same time points: Endoscopic reference score: 3.2 vs 0.7; P = .001; and 3.2 vs 1.7; P = .06. Histological findings improved after the most restrictive diet in responders (49.8 vs 4.1 eosinophils per high-power field; P = .001) and remained suppressed in the 10 initial responders maintaining compliance at the end of follow-up (5.2 eosinophils per high-power field).

CONCLUSIONS:
Among EoE patients responding to a food elimination diet and remaining adherent, maintenance dietary therapy produced durable long-term symptomatic, endoscopic and histological disease control. These long-term data confirm that a food elimination diet is an effective maintenance treatment option in select adults with EoE.

Inflammatory diet and CA

Gastroenterology. 2017 Aug 30. pii: S0016-5085(17)36078-X. doi: 10.1053/j.gastro.2017.08.045.

Association Between Inflammatory Diet Pattern and Risk of Colorectal Carcinoma Subtypes Classified by Immune Responses to Tumor.

Liu L[1], Nishihara R[2], Qian ZR[3], Tabung FK[4], Nevo D[5], Zhang X[6], Song M[7], Cao Y[7], Mima K[3], Masugi Y[3], Shi Y[8], da Silva A[3], Twombly T[3], Gu M[9], Li W[3], Hamada T[3], Kosumi K[3], Inamura K[10], Nowak JA[11], Drew DA[12], Lochhead P[12], Nosho K[13], Wu K[14], Wang M[15], Garrett WS[16], Chan AT[17], Fuchs CS[18], Giovannucci EL[19], Ogino S[20].

BACKGROUND & AIMS:
Dietary patterns affect systemic and local intestinal inflammation, which have been linked to colorectal carcinogenesis. Chronic inflammation can interfere with the adaptive immune response. We investigated whether the association of a diet that promotes intestinal inflammation with risk of colorectal carcinoma was stronger for tumors with lower lymphocytic reactions than tumors with higher lymphocytic reactions.

METHODS:
We collected data from the molecular pathological epidemiology databases of 2 prospective cohort studies: the Nurses' Health Study (since 1976) and the Health Professional Follow-up Study (since 1986). We used duplication-method time-varying Cox proportional cause-specific hazards regression to assess the association of empirical dietary inflammatory pattern (EDIP) score (derived from food frequency questionnaire data) with colorectal carcinoma subtype. Foods that contribute to high EDIP scores include red and processed meats, refined grains, carbonated beverages, and some vegetables; foods that contribute to low EDIP scores include beer, wine, coffee, tea, yellow and leafy vegetables, and fruit juice. Colorectal tissue samples were analyzed histologically for patterns of lymphocytic reactions (Crohn's-like lymphoid reaction, peritumoral lymphocytic reaction, intratumoral periglandular reaction, and tumor-infiltrating lymphocytes).

RESULTS:
During follow up of 124,433 participants, we documented 1311 incident colon and rectal cancer cases with available tissue data. The association between the EDIP and colorectal cancer risk was significant (P_{trend} = .02), and varied with degree of peritumoral lymphocytic reaction ($P_{heterogeneity}$ < .001). Higher EDIP scores were associated with increased risk of colorectal cancer with an absent or low peritumoral lymphocytic reaction (highest vs lowest EDIP score quintile hazard ratio = 2.60; 95% CI, 1.60-4.23; P_{trend} < .001) but not risk of tumors with intermediate or high peritumoral lymphocytic reaction (P_{trend} > .80).

CONCLUSIONS:
In a prospective cohort study, we associated inflammatory diets with a higher risk of colorectal cancer subtype that contains little or no peritumoral lymphocytic reaction. These findings suggest that diet-related inflammation might contribute to development of colorectal cancer, by suppressing the adaptive anti-tumor immune response.

10 A. CERVICAL SPINE

I phone ap for ROM

A new iPhone® application for measuring active craniocervical range of motion in patients with non-specific neck pain: a reliability and validity study

Mohammad Reza Pourahmadi, Rasool Bagheri, MSc, PT Morteza Taghipour, MSc, PT , Ismail Ebrahimi Takamjani, PhD, PT (Dean, Professor) Javad Sarrafzadeh, PhD, PT (Associate Professor) Mohammad Ali Mohseni-Bandpei, PhD, PT (Professor)

DOI: http://dx.doi.org/10.1016/j.spinee.2017.08.229

Background Context

Measurement of cervical spine range of motion (ROM) is often considered to be an essential component of cervical spine physiotherapy assessment.

Purpose To investigate the reliability and validity of an iPhone® app (Goniometer Pro©) for measuring active craniocervical ROM (ACCROM) in patients with non-specific neck pain.

Study Design/Setting

A cross-sectional study was conducted at the musculoskeletal biomechanics laboratory located at Iran University of Medical Sciences.

Patient Sample Forty non-specific neck pain patients participated in this study.

Outcome Measures

ACCROM including flexion, extension, lateral flexion, and rotation.

Method

Following the recruitment process, ACCROM was measured using a universal goniometer and iPhone® 7 app. Two blinded examiners each utilized the universal goniometer and iPhone® to measure ACCROM in the following sequences: flexion, extension, lateral flexion, and rotation. The second (2 h later) and third (48 h later) sessions were carried out in the same manner as the first session. Intraclass correlation coefficient (ICC) models were used to determine the intra-rater and inter-rater reliability. The Pearson's correlation coefficients were used to establish concurrent validity of the iPhone® app. Minimum detectable change at the 95% confidence level (MDC_{95}) was also computed.

Results

Good intra-rater and inter-rater reliability was demonstrated for the goniometer with ICC values of ≥ 0.66 and ≥ 0.70 and the iPhone® app with ICC values of ≥ 0.62 and ≥ 0.65, respectively. The MDC_{95} ranged from 2.21° to 12.50° for the intra-rater analysis and from 3.40° to 12.61° for the inter-rater analysis. The concurrent validity between the two instruments was high, with r values of ≥ 0.63. The magnitude of the differences between the UG and iPhone® app values (effect sizes) was small with Cohen's d values of ≤ 0.17.

Conclusions

The iPhone® app possesses good reliability and high validity. It seems that this app can be used for measuring ACCROM.

12 A. WHIPLASH

Emotional impact

BMJ Open. 2017 Sep 5;7(9):e017515. doi: 10.1136/bmjopen-2017-017515.

Psychological distress following a motor vehicle crash: evidence from a statewide retrospective study examining settlement times and costs of compensation claims.

Guest R[1], Tran Y[1], Gopinath B[1], Cameron ID[1], Craig A[1].

OBJECTIVE:
To determine whether psychological distress associated with musculoskeletal injuries sustained in a motor vehicle crash (MVC), regardless of time of onset, impacts compensation outcomes such as claim settlement times and costs. Second, to identify factors routinely collected by insurance companies that contribute to psychological distress during the compensation process.

DESIGN:
Statewide retrospective study.

DATA SOURCE:
Analysis of the New South Wales statewide (Australia) injury register for MVC survivors who lodged a compensation claim from 2011 to 2013.

PARTICIPANTS:
6341 adults who sustained a musculoskeletal injury and who settled a claim for injury after an MVC. Participants included those diagnosed with psychological distress (n=607) versus those not (n=5734).

MAIN OUTCOME MEASURES:
Time to settlement and total costs of claims, as well as socio-demographic and injury characteristics that may contribute to elevated psychological distress, such as socio-economic disadvantage, and injury severity.

RESULTS:
Psychological distress in those with a musculoskeletal injury was associated with significantly longer settlement times (an additional 17 weeks) and considerably higher costs (an additional $A41 575.00 or 4.3 times more expensive). Multivariate logistic regression analysis identified risk factors for psychological distress including being female, social disadvantage, unemployment prior to the claim, not being at fault in the MVC, requiring ambulance transportation and rehabilitation as part of recovery.

CONCLUSIONS:
Results provide compelling evidence that psychological distress has an adverse impact on people with musculoskeletal injury as they progress through compensation. Findings suggest that additional resources should be directed toward claimants who are at risk (eg, the socially disadvantaged or those unemployed prior to the claim), the major aim being to reduce risk of psychological distress, such as post-traumatic stress disorder, and associated risk of increased settlement times and claim costs. Prospective studies are now required that investigate treatment strategies for those at risk of psychological distress associated with an MVC.

13 B. TMJ/ORAL

TMJ changes following whipash injury

J Oral Rehabil. 2017 Sep 11. doi: 10.1111/joor.12571

Effects on jaw function shortly after whiplash trauma.

Lampa E[1], Wänman A[1], Nordh E[2], Häggman-Henrikson B[1,3].

Normal jaw function involves muscles and joints of both jaw and neck. A whiplash trauma may disturb the integrated jaw-neck sensory-motor function and thereby impair chewing ability, however, it is not known if such impairment is present shortly after a neck trauma or develops over time.

The aim was to evaluate jaw function after a recent whiplash trauma. Eighty cases (47 women) were examined within one month after a whiplash trauma and compared to 80 controls (47 women) without neck trauma. Participants completed the Jaw disability checklist (JDC) and Neck Disability Index (NDI) questionnaires and performed a 5-minute chewing test. Elicited fatigue and pain during chewing was noted and group differences were evaluated with Fisher's exact test and Mann-Whitney U-test. Compared to controls, cases had higher JDC ($P<0.0001$) and NDI scores (15% vs. 2%, $P<0.0001$), and reported more fatigue (53% vs 31%, $P=0.006$) and pain (30% vs 10%, $P=0.003$) during the chewing test. Cases also had a shorter onset time for fatigue and pain (both $P=0.001$) Furthermore, cases reporting symptoms during chewing had higher JDC and NDI scores compared to cases not reporting symptoms (both $P=0.01$). Symptoms mainly occurred in the trigeminal area for both groups, but also in spinal areas more often for cases than for controls.

Taken together, the results indicate that jaw-neck sensory-motor function is impaired already within one month after a whiplash trauma. The association between neck disability and jaw impairment underlines the close functional relationship between the regions, and stresses the importance of multidisciplinary assessment.

Craniofacial function

J Oral Rehabil. 2017 Sep 11. doi: 10.1111/joor.12574.

Psychometric evaluation of a motor control test battery of the craniofacial region.

von Piekartz H[1], Stotz E[2], Both A[1], Bahn G[1], Armijo-Olivo S[3], Ballenberger N[1].

BACKGROUND:
The primary objective of this study was to determine the structural and known-group validity as well as the inter-rater reliability of a test battery to evaluate the motor control of the craniofacial region.

METHODS:
70 volunteers without TMD and 25 subjects with TMD (Axes I) per the DC/TMD were asked to execute a test battery consisting of eight tests. The tests were videotaped in the same sequence in a standardized manner. Two experienced physical therapists participated in this study as blinded assessors. We used exploratory factor analysis in order to identify the underlying component structure of the 8 tests. Internal consistency (Cronbach α), inter-rater reliability (intraclass correlation coefficient), and construct validity (i.e. hypothesis testing-known-group validity) (receiver operating curves) were also explored for the test battery.

RESULTS:
The structural validity showed the presence of one factor underlying the construct of the test battery. The internal consistency was excellent (0.90) as well as the inter-rater reliability. All values of reliability were close to 0.9 or above indicating very high inter-rater reliability. The Area Under the Curve (AUC) was 0.93 for rater 1 and 0.94 for rater two respectively indicating excellent discrimination between subjects with TMD and healthy controls.

CONCLUSIONS:
The results of the present study support the psychometric properties of test battery to measure motor control of the craniofacial region when evaluated through videotaping. This test battery could be used to differentiate between healthy subjects and subjects with musculoskeletal impairments in the cervical and orofacial regions. In addition, this test battery could be used to assess the effectiveness of management strategies in the craniofacial region.

Bruxism

J Oral Rehabil. 2017 Aug 31. doi: 10.1111/joor.12558.

Oral appliances for managing sleep bruxism in adults: a systematic review from 2007 to 2017.

Jokubauskas L[1], Baltrušaitytė A[1], Pileičikienė G[1].

The review focuses on the last decade of research regarding the use of various oral appliances (OA) in the management of sleep bruxism (SB) in adults. Sixteen (N = 16) papers out of 641 identified citations involving 398 participants were included in the review. Of them, 7 were randomised controlled trials (RCTs), 7 were uncontrolled before-after studies and 2 were crossover trials. Analysis of the included articles revealed a high variability of study designs and findings. Generally, the risk of bias was low-to-unclear for RCTs and high for crossover studies, whilst the before-after studies exhibited several structural limitations. Nine studies used polysomnography/polygraphy/electromyography for SB diagnosis, whilst others were based on history taking and clinical examination. Most of them featured small samples and were short-term. Of the studies using objective SB evaluations, eight showed positive results for almost every type of OA in reducing SB activity, with a higher decrease for devices that are designed to provide a certain extent of mandibular advancement. Among the studies using a subjective SB evaluation, one demonstrated a significant reduction in SB activity, and additional two showed a myorelaxant effect of OA in SB patients.

Although many positive studies support the efficiency of OA treatment for SB, accepted evidence is insufficient to support its role in the long-term reduction of SB activity. Further studies with larger samples and sufficient treatment periods are needed to obtain more acknowledgements for clinical application.

Glucosamine helps TMJ pain

Oral Dis. 2017 Sep 1. doi: 10.1111/odi.12760.

Glucosamine oral administration as an adjunct to hyaluronic acid injection in treating temporomandibular joint osteoarthritis.

Cen X[1,2], Liu Y[1,2], Wang S[1,2], Yang X[1,3], Shi Z[1,2], Liang X[1,2].

OBJECTIVE:
To investigate the therapeutic effect of oral glucosamine (GS) as an adjunct to hyaluronic acid (HA) injection on patients with temporomandibular joint osteoarthritis (TMJ OA).

METHODS:
In this clinical trial, 136 participants, diagnosed as TMJ OA clinically and radiographically, were enrolled and randomized into two groups (Group GS+HA: oral GS+HA injection; Group placebo+HA: oral placebo+HA injection). Pain, maximum inter-incisal mouth opening (MMO), the levels of IL-1β, IL-6, and TGF-β in TMJ synovial were defined as the outcome measurements and conducted before operation, and at 1-month, 1-year follow-up.

RESULTS:
In both groups, pain scores were decreased and MMOs were increased at 1-month and 1-year follow-up, the changes at 1-year follow-up showed statistically significant intergroup differences. At 1-month follow-up, only IL-6 concentration was lower in group GS+HA than that in group placebo+HA. One year later, TGF-β concentration was higher, IL-6 and IL-1β concentrations were lower in group GS+HA than those in group placebo+HA.

CONCLUSIONS:
Both strategies alleviated symptoms in short term, but the patients treated with GS benefited more than those with placebo in long term, which may be due to the suppression of IL-1β and IL-6 and the stimulation of TGF-β.

Headgear helps

Skeletal and Dental Effectiveness of Treatment of Class II Malocclusion With Headgear: A Systematic Review and Meta-analysis

Riccardo Nucera, DDS, PhD, MSc Angela Militi, DDS, PhD Antonino Lo Giudice, DDS, PhD, MSc
Vanessa Longo, DDS Rosamaria Fastuca, DDS, MSc Alberto Caprioglio, MD, DDS
Giancarlo Cordasco, MD, DDS Moschos A. Papadopoulos, DDS, MSc

DOI: http://dx.doi.org/10.1016/j.jebdp.2017.07.008

Abstract

Objective

To evaluate the skeletal and dental effects of headgear treatment by systematically reviewing the best available scientific evidence.

Materials and Methods

A survey of articles published up to February 2017 investigating the effects of headgear in the treatment of patients with class II malocclusion was performed using 19 electronic databases. Only randomized clinical trials and prospective controlled clinical trials investigating growing patients with class II malocclusion treated with headgear were included. Two authors performed independently study selection, data extraction, and risk of bias assessment. All pooled data analyses were performed using the random-effect model. Statistical heterogeneity was evaluated.

Results

In total, 6 trials were included (4 randomized clinical trials and 2 prospective controlled clinical trials), grouping data from 337 patients (170 treated patients and 167 untreated controls). The ages of the patients varied across the studies, but the majority of the trials had a sample with an age range between 8 and 9 years. The times of daily wear of the appliance varied across studies from 8 to 14 h/d. The significant mean differences in treatment effects compared with the untreated controls were −1.41° per year for SNA angle cephalometric parameter (95% confidence interval [CI]: −2.25° to −0.56°), −0.57 mm/y for anterior maxillary displacement (95% CI: −0.75 to −0.40 mm), −1.42° per year for ANB angle cephalometric parameter (95% CI: −2.12° to −0.72°), and −1.31 mm/y for the overjet cephalometric parameter (95% CI: −2.34 to −0.29 mm).

Conclusion

Headgear treatment is effective in restricting sagittal maxillary growth and reducing the overjet in the short term.

13 C. AIRWAYS/SWALLOWING/SPEECH

Sleep disorders and cognitive function

JAMA Neurol. 2017 Aug 28. doi: 10.1001/jamaneurol.2017.2180.

Association of Sleep-Disordered Breathing With Cognitive Function and Risk of Cognitive Impairment: A Systematic Review Meta-analysis.

Leng Y[1], McEvoy CT[1,2], Allen IE[3], Yaffe K[1,4,5,6].

IMPORTANCE:
Growing evidence suggests an association between sleep-disordered breathing (SDB) and cognitive decline in elderly persons. However, results from population-based studies have been conflicting, possibly owing to different methods to assess SDB or cognitive domains, making it difficult to draw conclusions on this association.

OBJECTIVE:
To provide a quantitative synthesis of population-based studies on the relationship between SDB and risk of cognitive impairment.

DATA SOURCES:
PubMed, EMBASE, and PsychINFO were systematically searched to identify peer-reviewed articles published in English before January 2017 that reported on the association between SDB and cognitive function.

STUDY SELECTION: We included cross-sectional and prospective studies with at least 200 participants with a mean participant age of 40 years or older.

DATA EXTRACTION AND SYNTHESIS:
Data were extracted independently by 2 investigators. We extracted and pooled adjusted risk ratios from prospective studies and standard mean differences from cross-sectional studies, using random-effect models. This meta-analysis followed the PRISMA guidelines and also adhered to the MOOSE guidelines.

MAIN OUTCOMES AND MEASURES:
Cognitive outcomes were based on standard tests or diagnosis of cognitive impairment. Sleep-disordered breathing was ascertained by apnea-hypopnea index or clinical diagnosis.

RESULTS:
We included 14 studies, 6 of which were prospective, covering a total of 4 288 419 men and women. Pooled analysis of the 6 prospective studies indicated that those with SDB were 26% (risk ratio, 1.26; 95% CI, 1.05-1.50) more likely to develop cognitive impairment, with no evidence of publication bias but significant heterogeneity between studies. After removing 1 study that introduced significant heterogeneity, the pooled risk ratio was 1.35 (95% CI, 1.11-1.65). Pooled analysis of the 7 cross-sectional studies suggested that those with SDB had slightly worse executive function (standard mean difference, -0.05; 95% CI, -0.09 to 0.00), with no evidence of heterogeneity or publication bias. Sleep-disordered breathing was not associated with global cognition or memory.

CONCLUSIONS AND RELEVANCE:
Sleep-disordered breathing is associated with an increased risk of cognitive impairment and a small worsening in executive function. Further studies are required to determine the mechanisms linking these common conditions and whether treatment of SDB might reduce risk of cognitive impairment.

Swallowing

J Oral Rehabil. 2017 Sep 11. doi: 10.1111/joor.12573

The effect of bolus volume on laryngeal closure and UES opening in swallowing: Kinematic analysis using 320-row area detector CT Study.

Shibata S[1], Inamoto Y[1,2], Saitoh E[1], Kagaya H[1], Aoyagi Y[1], Ota K[2], Akahori R[1], Fujii N[3], Palmer JB[4], Fernandez MG[4].

This study investigated the effects of three different volumes of honey-thick liquid on the temporal characteristics of swallowing.

Twenty six healthy subjects (15 males, 11 females) underwent 320-Row Area Detector CT scan while swallowing 3, 10, and 20ml of honey-thick liquid barium. Three-dimensional images were created at 10 images/s. Kinematic events involving six structures (velopharynx, hyoid bone, epiglottis, laryngeal vestibule (LV), true vocal cords (TVC), upper esophageal sphincter (UES)) and timing of bolus movement were timed using frame by frame analysis. The overall sequence of events did not differ across three volumes, however, increasing bolus volume significantly changed the onset and termination of events. The bolus head reached to pharynx and esophagus earlier and the duration of bolus passing through UES was significantly longer in 10 ml and 20ml compared to 3ml ($p<0.05$). Consequently, the onset of UES opening was significantly earlier with increased volume ($p<0.05$). LV and TVC closure occurred later in 20ml compared to 3ml ($p<0.05$). These changes in motion of pharynx and larynx appeared to promote swallow safety by preventing aspiration, suggesting that anatomical structure movements adapt in response to bolus volume. Our findings also suggest that the pharyngeal swallow behaviors may be modified by afferents in the oral cavity.

The three-dimensional visualization and quantitative measurements provided by 320-ADCT provide essential benchmarks for understanding swallowing, both normal and abnormal.

Bruxism and sleep

J Oral Rehabil. 2017 Sep 11. doi: 10.1111/joor.12572.

Decreased GABA Levels in the Brainstem in Patients with Possible Sleep Bruxism: A Pilot Study.

Fan X[1], Qu F[1], Wang JJ[2], Du X[1], Liu WC[1].

BACKGROUND:
An increasing number of studies have indicated that the central and autonomic nervous systems play roles in the genesis of sleep bruxism (SB). The role of specific neurochemicals in SB has been a subject of interest.

OBJECTIVE:
In this study, we use proton magnetic resonance spectroscopy (^{1}H-MRS) to determine whether the levels of γ-aminobutyric acid (GABA) and glutamate (Glu) are different in the brainstem and bilateral cortical masticatory area (CMA) between possible sleep bruxism (SB) patients and controls, and discuss whether the brainstem or cortical networks which may affect the central masticatory pathways are under the genesis of SB.

METHODS:
Twelve possible SB patients and twelve age- and gender-matched controls underwent ^{1}H-MRS using the "MEGA-Point Resolved Spectroscopy Sequence" (MEGA-PRESS) technique in the brainstem and bilateral CMA. ^{1}H-MRS data were processed using LCModel. Because the signal detected by MEGA-PRESS includes contributions from GABA, macromolecules (primarily proteins) and homocarnosine, the GABA signal is referred to as "GABA+". The glutamate complex (Glx) signal contains both glutamate (Glu) and glutamine (Gln), which mainly reflect glutamatergic metabolism.

RESULTS:
Edited spectra were successfully obtained from the bilateral CMA in all subjects. There were no significant differences in neurochemical levels between the left and right CMA in possible SB patients and controls. In the brainstem, significantly lower GABA+ levels were found in possible SB patients than in controls (P=0.011), whereas there was no significant difference (P=0.307) in Glx levels between the two groups.

CONCLUSIONS:
SB patients may possess abnormalities in the GABAergic system of brainstem networks.

16. CONCUSSIONS

Changes in visual reaction times

Clin J Sport Med. 2017 Sep;27(5):457-461. doi: 10.1097/JSM.0000000000000381.

Analysis of Central and Peripheral Vision Reaction Times in Patients With Postconcussion Visual Dysfunction.

Clark JF[1], Ellis JK, Burns TM, Childress JM, Divine JG.
Author information

Abstract

OBJECTIVE:
To determine whether central and peripheral vision reaction times (PVRTs) are prolonged in patients with visual dysfunction after sustaining a concussion.

DESIGN:
Comparison of Dynavision D2 central and PVRTs in patients with postconcussion visual dysfunction were compared with control data from a normative patient database. Concussion patients without visual dysfunction were not included in this study.

SETTING:
National Collegiate Athletic Association Division 1 college training room and university based, academic health center.

PARTICIPANTS:
Patients were selected for inclusion based on diagnosis of new visual dysfunction as indicated either by physical examination of the team physician or by patient self-report of symptoms. Patients included college athletes, college students, and concussion patient's presenting to a university based, academic health center.

INTERVENTION:
Measurement of central and PVRTs using a Dynavision D2 reaction time program were used as the dependent variables. Evaluations were conducted from 3 days to 11 months postconcussion, depending on the temporal development of visual symptoms after the concussion. No intervention was used.

MAIN OUTCOME MEASURES:
Average central and PVRTs for patients with postconcussion visual symptoms were compared with an asymptomatic control group with no history of concussion.

RESULTS:
Both central and PVRTs were significantly prolonged in patients with postconcussion visual symptoms compared with patients with no history of concussion.

CONCLUSIONS:
Central and PVRTs are both prolonged in patients with postconcussion visual dysfunction with PVRT being disproportionately prolonged. The percent change from central to PVRT was also increased in patients with postconcussion visual dysfunction.

20 A. ROTATOR CUFF

Exercise and supraspinatus

Knee Surgery, Sports Traumatology, Arthroscopy
pp 1–8

Exercise therapy for treatment of supraspinatus tears does not alter glenohumeral kinematics during internal/external rotation with the arm at the side

Gerald A. Ferrer R. Matthew Miller Jason P. Zlotnicki Scott Tashman James J. Irrgang Volker Musahl Richard E. Debski

Purpose

Rotator cuff tears are a significant clinical problem, with exercise therapy being a common treatment option for patients. Failure rates of exercise therapy may be due to the failure to improve glenohumeral kinematics. Tears involving the supraspinatus may result in altered glenohumeral kinematics and joint instability for internal/external rotation with the arm at the side because not all muscles used to stabilize the glenohumeral joint are functioning normally. The objective of the study is to assess in vivo glenohumeral kinematic changes for internal/external rotation motions with the arm at the side of patients with a symptomatic full-thickness supraspinatus tear before and after a 12-week exercise therapy programme.

Methods

Five patients underwent dynamic stereoradiography analysis before and after a 12-week exercise therapy protocol to measure changes in glenohumeral kinematics during transverse plane internal/external rotation with the arm at the side. Patient-reported outcomes and shoulder strength were also evaluated.

Results

No patient sought surgery immediately following exercise therapy. Significant improvements in isometric shoulder strength and patient-reported outcomes were observed ($p < 0.05$). No significant changes in glenohumeral kinematics following physical therapy were found.

Conclusion

Isolated supraspinatus tears resulted in increased joint translations compared to healthy controls from the previous literature for internal/external rotation with the arm at the side. Despite satisfactory clinical outcomes following exercise therapy, glenohumeral kinematics did not change. The lack of changes may be due to the motion studied or the focus of current exercise therapy protocols being increasing shoulder strength and restoring range of motion. Current exercise therapy protocols should be adapted to also focus on restoring glenohumeral kinematics to improve joint stability since exercise therapy may have different effects depending on the motions of daily living.

Level of evidence Prognostic study, Level II.

26. CARPAL TUNNEL SYNDROME

Steroid injections help

Int J Rheum Dis. 2017 Sep 13. doi: 10.1111/1756-185X.13162.

Local steroid injection versus wrist splinting for carpal tunnel syndrome: A randomized clinical trial.

So H[1], Chung VCH[2], Cheng JCK[1], Yip RML[3].

AIM:
We conducted a prospective randomized parallel clinical trial comparing the efficacy of local steroid injection and nocturnal wrist splinting in patients with carpal tunnel syndrome (CTS).

METHODS:
The well-validated and disease-specific Boston Carpal Tunnel Questionnaire (BCTQ) was employed and its score at 4 weeks after treatment was used as the primary outcome measure. Important secondary outcomes included patient satisfaction, the change of an objective finger dexterity test and the side effects.

RESULTS:
Twenty-five patients in the local steroid group and 25 patients in the wrist splinting group completed the study procedures. At 4 weeks after treatment, there was significant improvement of the BTCQ scores in both the steroid group and splinting group. There was improvement of the finger dexterity test only in the steroid group but not in the splinting group. However, there was no statistically significant difference in the changes of BTCQ scores between the two groups after treatment. Patient satisfaction score was higher in the steroid group. Patients in the steroid group took fewer painkillers after treatment. Four patients developed side effects after splinting and three after local steroid injection, which was not statistically significant.

CONCLUSION:
Although local steroid injection and nocturnal wrist splinting were equally effective in the treatment of patients with CTS, only the former improved objective hand function. Local steroid injection also resulted in better patient satisfaction and less painkiller use without causing more side effects.

28. REPLACEMENTS

Activity did not increase

Arthritis Care Res (Hoboken). 2017 Sep 12. doi: 10.1002/acr.23415.

Changes in physical activity after total hip or knee arthroplasty: A systematic review and meta-analysis of 6 and 12 month outcomes.

Hammett T[1], Simonian A[1], Austin M[1], Butler R[2], Allen KD[3], Ledbetter L[4], Goode AP[1,5].
Author information

Abstract

OBJECTIVE:
Little is known about the extent to which physical activity (PA) changes following total knee or hip joint replacement relative to pain, physical function and quality of life. Our objective was to conduct a systematic review and meta-analysis on changes in PA relative to pain, quality of life and physical function after total knee or hip joint replacement.

METHODS:
We searched PubMed (Medline), Embase and Cinahl, for peer-reviewed, English-language cohort studies measuring PA with an accelerometer from pre-surgery to post-surgery. Random-effects models were used to produce standardized mean differences (SMDs) for PA, quality of life, pain, and physical function outcomes. Heterogeneity was measured with I^2 .

RESULTS:
Seven studies (336 participants) met eligibility criteria. No significant increase in PA was found at 6-months (SMD 0.14; 95% CI -0.05 to 0.34; I^2 =0%) and a small-moderate significant effect was found for increasing PA at 12-months (SMD 0.43; 95% CI 0.22 to 0.64; I^2 =0%). Large improvements at 6-months in physical function (SMD 0.97; 95% CI 0.12 to 1.82; I^2 =92.3%), pain (SMD -1.47; 95% CI -2.28 to -0.65; I^2 =91.6%), and quality of life (SMD 1.02; 95% CI 0.30 to 1.74; I^2 =83.2%) were found.

CONCLUSIONS:
Physical activity did not change at 6-months and a small-moderate improvement was found at 12-months post-surgery, despite large improvements in quality of life, pain, and physical function. Reasons for the lack of increased PA are unknown but may be behavioral in nature as sedentary lifestyle is difficult to change. Changing sedentary behavior should be a future focus among this subgroup.

Previous lumbar fusion increases risk of hip dislocation

Prior lumbar spinal fusion is associated with an increased risk of dislocation and revision in total hip arthroplasty: a meta-analysis

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DOI: http://dx.doi.org/10.1016/j.arth.2017.08.040

Background

The biomechanical relationship between the lumbar spine and the hip is well-documented. It follows that fusing the lumbar spine would have implications on the outcomes of total hip arthroplasty (THA). This study aimed to determine the effect of pre-existing lumbar spinal fusion surgery on the outcomes of THA by synthesizing the available evidence via systematic review and meta-analysis.

Methods

A systematic review with meta-analysis was performed in accordance to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Electronic searches were performed in six different databases for studies comparing outcomes in patients following THA with or without a history of lumbar fusion. Studies were required to report at least one outcome out of dislocation, revision due to hip instability or patient reported outcomes.

Results

Patients with a history of lumbar spinal fusion are at a significantly increased risk of dislocation (RR 2.03, $p < 0.00001$) and revision (RR 3.36, $p = 0.006$) following THA. Patient reported outcomes were also poorer in patients with prior lumbar fusion compared to those without, although meta-analysis could not be performed due to heterogeneity in the outcome measure used between studies.

Conclusions

Previous lumbar spinal fusion increases risk of dislocation and revision, and may negatively impacts patient reported outcomes following THA. Orthopaedic surgeons should pay particular attention to these patients and could use patient-specific planning, instrumentation and targeted counselling to optimise clinical and subjective outcomes. Future studies could clarify the impact of prior fusion on patient reported outcomes following THA.

32 A. KNEE/ACL

Comparisons

Open versus arthroscopic anterior cruciate ligament reconstruction: a systematic review of randomized controlled trials

Levy, David M. MD; Erickson, Brandon J. MD; Bach, Bernard R. Jr MD

Current Orthopaedic Practice: September/October 2017 - Volume 28 - Issue 5 - p 449–452
doi: 10.1097/BCO.0000000000000547

Background: The purpose of this paper was to determine if significant differences exist between open and arthroscopic anterior cruciate ligament reconstruction (ACLR). We have hypothesized that patients would experience less pain, fewer complications, and fewer reoperations after arthroscopic ACLR.

Methods: A systematic review of multiple medical databases was performed. Randomized controlled trials with a minimum of 6 mo follow-up were included. Study quality was analyzed using the Modified Coleman Methodology Score (MCMS) and Jadad Scale.

Results: Three studies met the inclusion criteria (212 subjects; 212 knees). The MCMS rating was fair at 60.7±1.5, and the mean Jadad score was fair at 2.7±1.5. One study reported long-term outcomes (mean 12 yr) of 53 patients (25 open, 28 arthroscopic) and noted no differences in pain, strength, functional testing, or prevalence of osteoarthritis between groups. Two studies reported short-term outcomes of a combined 125 patients (58 open, 67 arthroscopic) with an average follow-up of 6 mo. In these studies, there were no differences in operative time, Lysholm scores, knee range of motion, laxity, complications, or reoperations between groups. Immediate postoperative analgesic use was higher in the open group. Average thigh atrophy ranged from 1.5 to 2.8 cm in the open group and 1.4 to 1.5 cm in the arthroscopic group.

Conclusions: Based on the examined studies, there are no differences in operative time, knee range of motion, laxity, Lysholm scores, complications, or reoperations between open and arthroscopic ACLR techniques. Immediate postoperative pain appears decreased in patients undergoing arthroscopic ACLR.

Failure rate

Arthroscopy. 2017 Aug 30. pii: S0749-8063(17)30645-X. doi: 10.1016/j.arthro.2017.06.029.

Clinical Outcomes in Revision Anterior Cruciate Ligament Reconstruction: A Meta-Analysis.

Mohan R[1], Webster KE[2], Johnson NR[1], Stuart MJ[1], Hewett TE[1], Krych AJ[3].

PURPOSE:
The purpose of this meta-analysis was to determine overall objective graft failure rate, failure rate by graft type (allograft vs autograft reconstruction), instrumented laxity, and patient outcome scores following revision anterior cruciate ligament (ACL) reconstruction. Outcomes of interest were collected for all studies meeting the study inclusion criteria, but lower-level studies (level III/IV) were not pooled for quantitative synthesis due to high levels of heterogeneity in these study populations.

METHODS:
A comprehensive search strategy was performed to identify studies reporting outcomes of revision ACL reconstruction. The primary outcome reported was graft failure. A meta-analysis comparing rate of failure by graft type was conducted using a random effects model. Studies also reported patient clinical outcome scores, including International Knee Documentation Committee (IKDC), Lysholm, and knee injury and osteoarthritis outcome scores (KOOS) and graft laxity.

RESULTS:
Eight studies with 3,021 patients (56% male, 44% female) with an average age of 30 ± 4 years and mean follow-up time of 57 months were included. The overall objective failure rate was 6% (95% confidence interval [CI], 1.8%-12.3%). Mean instrumented laxity as side-to-side difference was 2.5 mm (95% CI, 1.9-3.1 mm). Mean IKDC subjective score was 76.99 (95% CI, 76.64-77.34), mean KOOS symptoms score was 76.73 (95% CI, 75.85-77.61), and mean Lysholm score was 86.18 (95% CI, 79.08-93.28). The proportion of patients with IKDC grade A or B was 85% (95% CI, 77%-91%). When the available data for failure rate were analyzed by graft type, autograft reconstruction had a failure rate of 4.1% (95% CI, 2.0%-6.9%), similar to allograft reconstruction at 3.6% (95% CI, 1.4%-6.7%).

CONCLUSIONS:
In this meta-analysis, revision ACL reconstruction had failure rates similar to autograft or allograft reconstruction. Overall outcome scores for revision reconstruction have improved but appear modest when compared with primary ACL reconstruction surgery.

33. MENISCUS

Repair not cost effective

Arthroscopic meniscectomy for degenerative meniscal tears reduces knee pain but is not cost-effective in a routine health care setting: a multi-center longitudinal observational study using data from the osteoarthritis initiative

Jan J. Rongen, MD MSc Tim M. Govers, PhD Pieter Buma (Professor) Maroeska M. Rovers(Professor) Gerjon Hannink, PhD

DOI: http://dx.doi.org/10.1016/j.joca.2017.02.805

Objectives

It is disputed whether arthroscopic meniscectomy is an (cost-) effective treatment for degenerative meniscus tears in day-to-day clinical practice. The objective of this study was to assess the cost-effectiveness of arthroscopic meniscectomy in subjects with knee osteoarthritis, in routine clinical practice, while taking into account the increased risk for future knee replacement surgery. We compared cost-effectiveness of arthroscopic meniscectomy compared to no surgery.

Design

– We used a state transition (Markov) simulation model to evaluate the cost-effectiveness of arthroscopic meniscectomy compared to no surgery in subjects with knee osteoarthritis (age range 45– 79 years). Data used in the preparation of the current study were obtained from the Osteoarthritis Initiative (AOI) database. We applied a 9 years' time horizon (which is equal to the current OAI study follow up period), and evaluated cost-effectiveness from a societal perspective. The main outcome measure was the incremental cost-effectiveness ratio (Euros per quality adjusted life-year (QALY) gained.

Results

Arthroscopic meniscectomy was associated with 8.09 (SD ±0.07) QALYs at a cost of € 21,345 (SD ±841), whereas the no surgery was associated with 8.05 (SD ±0.07) QALYs at a cost of € 16,284 (SD ±855). For arthroscopic meniscectomy, the incremental cost per QALY gained was € 150,754.

Conclusions

In day-to-day clinical practice, arthroscopic meniscectomy in subjects with knee osteoarthritis is associated with € 150,754 per QALY gained, which exceeds the generally accepted willingness to pay (range € 20,000 - € 80,000).

34. PATELLA

Morphology

Patellofemoral morphology is not related to pain using three-dimensional quantitative analysis in an older population: data from the Osteoarthritis Initiative

Benjamin T. Drew Michael A. Bowes Anthony C. Redmond Bright DubeSarah R. Kingsbury Philip G. Conaghan
Rheumatology, kex329, https://doi.org/10.1093/rheumatology/kex329

Objectives. Current structural associations of patellofemoral pain (PFP) are based on 2D imaging methodology with inherent measurement uncertainty due to positioning and rotation. This study employed novel technology to create 3D measures of commonly described patellofemoral joint imaging features and compared these features in people with and without PFP in a large cohort.
Methods. We compared two groups from the Osteoarthritis Initiative: one with localized PFP and pain on stairs, and a control group with no knee pain; both groups had no radiographic OA. MRI bone surfaces were automatically segmented and aligned using active appearance models. We applied t-tests, logistic regression and linear discriminant analysis to compare 13 imaging features (including patella position, trochlear morphology, facet area and tilt) converted into 3D equivalents, and a measure of overall 3D shape.
Results. One hundred and fifteen knees with PFP (mean age 59.7, BMI 27.5 kg/m^2, female 58.2%) and 438 without PFP (mean age 63.6, BMI 26.9 kg/m^2, female 52.9%) were included. After correction for multiple testing, no statistically significant differences were found between groups for any of the 3D imaging features or their combinations. A statistically significant discrimination was noted for overall 3D shape between genders, confirming the validity of the 3D measures.
Conclusion. Challenging current perceptions, no differences in patellofemoral morphology were found between older people with and without PFP using 3D quantitative imaging analysis. Further work is needed to see if these findings are replicated in a younger PFP population.

37. OSTEOARTHRITIS/KNEE

Heat and cold

J Clin Nurs. 2017 Sep 7. doi: 10.1111/jocn.14070.

The effect of self-administered superficial local hot and cold application methods on pain, functional status and quality of life in primary knee osteoarthritis patients.

Aciksoz S[1,2], Akyuz A[3,4], Tunay S[5,6].

AIMS AND OBJECTIVES:
To investigate the effect of the self-administered superficial local hot and cold applications on pain, and the functional status and the quality of life in primary knee osteoarthritis patients.

BACKGROUND:
Superficial local hot and cold application is used as a non-pharmacological method for the treatment of knee osteoarthritis. However, various guidelines for the management of knee osteoarthritis have conflicting recommendation for hot and cold therapy.

DESIGN:
A randomized clinical trial design.

METHODS:
The sample consisted of patients (n=96) who were diagnosed with primary knee osteoarthritis. During the application stage, patients were designated to the hot and cold application groups and administered hot and cold application twice a day for three weeks together with standard osteoarthritis treatment. The control group only used standard osteoarthritis treatment. The data were collected with a Descriptive Information Form, a Pain Scale, the WOMAC Osteoarthritis Index, the Nottingham Health Profile and a Patient Satisfaction Evaluation Form. Outcome measures included pain intensity, functional status and quality of life.

RESULTS:
We found decreased primary measurement pain scores, and improved functional status scores and quality of life scores after the application program compared to the pre-application stage in both the hot and cold application groups. Once the application was completed, the pain scores, functional status scores and quality of life scores on the second measurements were found to be still statistically lower than the pre-application scores but higher than the first measurement ($p<0.001$, $\chi2=48.000$; $p<0.001$, $\chi2=34.000$), ($p<0.001$, $\chi2=22.000$; $p=0.001$ $\chi2=14.000$), ($p=0.005$, $\chi2=16.000$; $p=0.001$, $\chi2=12.500$). There was no difference in the perceived pain, functional status, and quality of life between the pre-application, post-application and two weeks post-application periods of the individuals in three groups ($p>0.05$).

CONCLUSION:
It was found that both hot and cold application resulted in a mild improvement in pain, functional status and quality of life but this improvement was not sufficient to create a significant difference between the groups.

RELEVANCE TO CLINICAL PRACTICE:
This study contributes to the literature on hot and cold application methods as self-management strategies for patients with knee osteoarthritis.

Alignment surgery

Changes in biomechanical risk factors for knee osteoarthritis and their association with 5-year clinically important improvement after limb realignment surgery

Trevor.B. Birmingham J.Robert Giffin

DOI: http://dx.doi.org/10.1016/j.joca.2017.08.017

Objective

To evaluate 5-year outcomes after lower limb realignment and test the hypothesis that surgery-induced changes in selected biomechanical risk factors for medial knee OA are associated with clinically important improvements.

Design

We prospectively evaluated patient-reported outcomes, full-limb standing radiographs and gait biomechanics before, 6 months (surgery-induced change) and 5 years after medial opening wedge high tibial osteotomy (HTO) in 170 patients (46.4±8.9yrs, 135 males) with knee OA and varus alignment. Logistic regression tested the associations of 6-month changes in mechanical axis angle and knee adduction moment with achieving an increase of ≥10 points in the Knee injury and Osteoarthritis Outcome Score (KOOS4) at 5 years, with and without adjusting for covariates. Gait data were also compared to existing data from healthy controls.

Results

Mean 5-year changes (95%CI) were: KOOS4: +14.2 (10.8, 17.6); mechanical axis angle: +8.21° (7.58, 8.83); knee adduction moment: -1.49%BW*Ht (-1.35, -1.63). The postoperative knee adduction moments were typically lower than values for healthy controls. When divided into quartiles, although all strata improved significantly, patients with reductions in knee adduction moment of 1.14-to-1.74%BW*Ht (neither largest nor smallest changes) had highest 5-year KOOS4 scores. The 6-month change in knee adduction moment (OR=0.38; 95%CI: 0.22, 0.67), preoperative KOOS4 (OR=0.96; 95%CI: 0.94, 0.99) and preoperative medial tibiofemoral narrowing grade (OR=0.62; 95%CI: 0.37, 1.00) were associated with having a 5-year clinically important improvement (C-statistic=0.70).

Conclusions

Substantial improvements in biomechanical risk factors and patient-reported outcomes are observed 5 years after medial opening wedge HTO. The surgery-induced change in load distribution during walking is significantly associated with long-term clinically important improvement.

44. RHUMATOID ARTHRITIS

RA and FM

The influence of fibromyalgia on achieving remission in patients with long-standing rheumatoid arthritis
Rheumatology International
Salaffi F, et al.
An observational study was performed to determine the influence of fibromyalgia (FM) on achieving remission defined on the basis of the Simplified Disease Activity Index (SDAI) remission criteria in patients with long-standing rheumatoid arthritis (RA). Accumulated data suggested that an assessment of FM should be considered to avoid over treatment in RA patients who do not fulfil the remission criteria.

- This study comprised of long-standing RA patients being treated with conventional synthetic disease-modifying antirheumatic drugs (csDMARDs) or biological DMARDs (bDMARDs).
- After 6 months of follow-up, the patients fulfilling or not fulfilling the remission criteria were identified and compared with each other in terms of the presence of FM, neuropathic pain, and other comorbidities.
- 24 of the 117 patients (20.4%) met the SDAI remission criteria, at the end of the 6-month observation period.
- Logistic regression analysis displayed that the modified Rheumatic Disease Comorbidity Index (mRDCI) ($p = 0.0001$), the FM presence ($p = 0.0001$), and the 36-item short-form health survey Mental Component Summary (SF-36 MCS) Score ($p = 0.0088$) were the strongest predictors of not being in SDAI remission.
- None of the patients with concomitant FM (17.1%) achieved SDAI remission.
- In comparison with the non-FM patients, the patients with RA and FM patients had worse scores on the SF-36 MCS ($p = 0.011$), on the sleep Visual Analogue Scale (VAS) ($p = 0.018$), on the self-counts of tender joints ($p = 0.039$), and on the PainDetect Questionnaire (PDQ) ($p = 0.001$).

45 C. MANUAL THERAPY THORACIC

Manip and autonomic function

Autonomic function and pressure pain threshold following thoracic mobilization in asymptomatic subjects: A randomized controlled trial

Francisco Xavier de Araujo Marcelo Faria Silva

DOI: http://dx.doi.org/10.1016/j.jbmt.2017.09.005

Abstract

Objective

To compare the effects of two different mobilization techniques and a placebo intervention applied to the thoracic spine on heart rate variability (HRV) and pressure pain threshold (PPT) in asymptomatic individuals.

Methods

Sixty healthy asymptomatic subjects aged between 18 and 40 years old were randomized to a single session of one of the three interventions: posterior-to-anterior (PA) rotatory thoracic passive accessory intervertebral mobilization (PAIVM) (PA group), unilateral thoracic PA in slump position (SLUMP group) or placebo intervention (Placebo group). HRV and PPT at C7 and T4 spinous process, first dorsal interossei muscles bilaterally, and muscle belly of tibialis anterior bilaterally were measured before and immediately after the intervention. A univariate analysis of covariance (ANCOVA) adjusted for baseline values assessed the effect of “Group”. Pairwise comparisons with Bonferroni adjustment for multiple comparisons were performed.

Results

There were no significant between-group differences for HRV. A significant between-group difference for PPT in the ipsilateral tibia was found favoring the SLUMP group in comparison with the PA group. There were no significant between-group differences for PPT in the other landmarks.

Conclusion

A single treatment of thoracic PAIVM in prone lying and slump position did not alter PPT and HRV compared to placebo in asymptomatic subjects.

48 B. TRIGGER POINTS NEEDLING/ACUPUNCTURE

Acupuncture for chronic pain helps

Curr Opin Anaesthesiol. 2017 Oct;30(5):583-592. doi: 10.1097/ACO.0000000000000501.

Acupuncture for chronic pain: an update and critical overview.

Yin C[1], Buchheit TE, Park JJ.

PURPOSE OF REVIEW:
Acupuncture is now recommended for several chronic pain conditions. Despite supportive evidence of its effectiveness, this ancient approach is often misunderstood, and may still be underused in mainstream practice. A critical review on its effectiveness and practice integration, and mechanisms of action is essential to the medical community that is continuing to seek nonopioid therapies for chronic pain.

RECENT FINDINGS:
Mounting evidence supports the effectiveness of acupuncture to treat chronic low back, neck, shoulder, and knee pain, as well as headaches. Additional data are emerging that support the use of acupuncture as an adjunct or alternative to opioids, and in perioperative settings. Findings related to its mechanisms of action include transient receptor potential cation channel vanilloid 1 activation in the periphery, microglial suppression in the cerebral cortex and spinal cord, and regulation of cytokines and other key inflammatory factors in the spinal cord. Incremental integration of acupuncture into pain medicine practices and training programmes continues to grow.

SUMMARY:
Acupuncture is effective, safe, and cost-effective for treating several chronic pain conditions when performed by well-trained healthcare professionals. Further studies on its use as an adjunct or alternative to opioids, and in perioperative settings are needed.

49. STRETCHING

Cyotherapy

The effects of cryotherapy versus cryostretching on clinical and functional outcomes in athletes with acute hamstring strain

Leyla Sefiddashti Nastaran Ghotbi Nastaran Ghotbi Mahyar Salavati Ali Farhadi ,
Masood Mazaheri
DOI: http://dx.doi.org/10.1016/j.jbmt.2017.08.007

Abstract

Purpose

Hamstring strain is a common sport injury that results in pain and functional limitation. Despite its high frequency in active populations, there is no agreement regarding the best method used for early intervention of hamstring strain. The aim of the present study was to compare the effects of cryotherapy and cryostretching on clinical and functional outcomes in athletes with acute hamstring strain.

Materials and methods

Thirty seven elite athletes with an acute grade I or II hamstring strain were randomly assigned to either cryotherapy (n = 19) or cryostretching (n = 18) group, receiving 5 sessions of supervised treatment plus home-based intervention monitored by the therapist. Pre-treatment to post-treatment changes in pain, active and passive knee extension range of motion and functional status were compared between the two groups.

Results

Compared to cryotherapy, cryostretching resulted in larger improvement of function and passive knee extension range of motion. Changes in active knee extension range of motion and pain severity were not significantly different between the two groups.

Conclusion

A rehabilitation protocol involving gentle stretching following cryotherapy is more effective than cryotherapy alone in the improvement of function and passive knee range of motion in patients with grade I and II hamstring strain.

52. EXERCISE

Aerobic training for memory

BMC Psychiatry. 2017 Sep 2;17(1):322. doi: 10.1186/s12888-017-1457-1.

Aerobic training for improved memory in patients with stress-related exhaustion: a randomized controlled trial.

Eskilsson T[1], Slunga Järvholm L[2], Malmberg Gavelin H[3], Stigsdotter Neely A[4], Boraxbekk CJ[5,6,7].

BACKGROUND:
Patients with stress-related exhaustion suffer from cognitive impairments, which often remain after psychological treatment or work place interventions. It is important to find effective treatments that can address this problem. Therefore, the aim of this study was to investigate the effects on cognitive performance and psychological variables of a 12-week aerobic training program performed at a moderate-vigorous intensity for patients with exhaustion disorder who participated in a multimodal rehabilitation program.

METHODS:
In this open-label, parallel, randomized and controlled trial, 88 patients diagnosed with exhaustion disorder participated in a 24-week multimodal rehabilitation program. After 12 weeks in the program the patients were randomized to either a 12-week aerobic training intervention or to a control group with no additional training. Primary outcome measure was cognitive function, and secondary outcome measures were psychological health variables and aerobic capacity.

RESULTS:
In total, 51% patients in the aerobic training group and 78% patients in the control group completed the intervention period. The aerobic training group significantly improved in maximal oxygen uptake and episodic memory performance. No additional improvement in burnout, depression or anxiety was observed in the aerobic group compared with controls.

CONCLUSION:
Aerobic training at a moderate-vigorous intensity within a multimodal rehabilitation program for patients with exhaustion disorder facilitated episodic memory. A future challenge would be the clinical implementation of aerobic training and methods to increase feasibility in this patient group.

56. ATHLETICS

Golf and knee

Sports Med. 2017 Sep 7. doi: 10.1007/s40279-017-0780-5.

Risk Factors for Knee Injury in Golf: A Systematic Review.

Baker ML[1,2], Epari DR[2], Lorenzetti S[1], Sayers M[3], Boutellier U[1], Taylor WR[4].
Author information

Abstract
BACKGROUND:
Golf is commonly considered a low-impact sport that carries little risk of injury to the knee and is generally allowed following total knee arthroplasty (TKA). Kinematic and kinetic studies of the golf swing have reported results relevant to the knee, but consensus as to the loads experienced during a swing and how the biomechanics of an individual's technique may expose the knee to risk of injury is lacking.

OBJECTIVES:
Our objective was to establish (1) the prevalence of knee injury resulting from participation in golf and (2) the risk factors for knee injury from a biomechanical perspective, based on an improved understanding of the internal loading conditions and kinematics that occur in the knee from the time of addressing the ball to the end of the follow-through.

METHODS:
A systematic literature search was conducted to determine the injury rate, kinematic patterns, loading, and muscle activity of the knee during golf.

RESULTS:
A knee injury prevalence of 3-18% was established among both professional and amateur players, with no clear dependence on skill level or sex; however, older players appear at greater risk of injury. Studies reporting kinematics indicate that the lead knee is exposed to a complex series of motions involving rapid extension and large magnitudes of tibial internal rotation, conditions that may pose risks to the structures of a natural knee or TKA. To date, the loads experienced by the lead knee during a golf swing have been reported inconsistently in the literature. Compressive loads ranging from 100 to 440% bodyweight have been calculated and measured using methods including inverse dynamics analysis and instrumented knee implants. Additionally, the magnitude of loading appears to be independent of the club used.

CONCLUSIONS:
This review is the first to highlight the lack of consensus regarding knee loading during the golf swing and the associated risks of injury. Results from the literature suggest the lead knee is subject to a higher magnitude of stress and more demanding motions than the trail knee. Therefore, recommendations regarding return to golf following knee injury or surgical intervention should carefully consider the laterality of the injury.

59. PAIN

Chronic pain and suicide

Prog Neuropsychopharmacol Biol Psychiatry. 2017 Aug 25. pii: S0278-5846(17)30467-0. doi: 10.1016/j.pnpbp.2017.08.020.

Chronic pain and suicide risk: A comprehensive review.

Racine M[1].

Death by suicide is one of the leading causes of mortality worldwide.

Because individuals with chronic pain are at least twice as likely to report suicidal behaviors or to complete suicide, it is of utmost importance to target which risk factors contribute the most to increasing suicidality.

This comprehensive review aims to provide an update on research advancements relating to the identification of potential risk factors for suicidality in individuals with chronic pain. Supporting the results of prior reviews, we found robust evidence that chronic pain itself, regardless of type, was an important independent risk factor for suicidality.

The only sociodemographic factor found to be associated with suicidality in individuals with chronic pain was being unemployed/disabled. Depressive symptoms, anger problems, harmful habits (e.g. smoking, alcohol misuse, illicit drugs), childhood or adulthood adversities, and family history of depression/suicide were all also identified as general risk factors.

Regarding pain-related factors, sleep problems, poorer perceived mental health, concurrent chronic pain conditions, and more frequent episodes of intermittent pain, were all found to be predictors of suicidality. Unexpectedly, pain characteristics (e.g. type, duration, and intensity/severity) and physical status (e.g. pain interference or disability) were not related to suicide risk. We also identified promising new psychosocial factors (e.g. mental defeat, pain catastrophizing, hopelessness, perceived burdensomeness and thwarted belongingness) associated with suicidality outcomes.

A large number of these factors are amenable to change through targeted intervention, highlighting the importance of comprehensively assessing chronic pain patients at risk for suicide, while also incorporating a suicide prevention component into chronic pain management programs.

Others pain

Hum Brain Mapp. 2017 Aug 18. doi: 10.1002/hbm.23749.

Brain activity induced by implicit processing of others' pain and pleasure.

Chiesa PA[1,2], Liuzza MT[1,2,3], Macaluso E[2,4], Aglioti SM[1,2].
Author information

Abstract
Studies indicate that both explicit and implicit processing of affectively charged stimuli may be reflected in specific behavioural markers and physiological signatures.

Here, we investigated whether the pleasantness ratings of a neutral target were affected by the subliminal perception of a painful (a slap) or pleasant (a caress) touch delivered to others. In particular, we combined the continuous flash suppression technique with the affective misattribution procedure to explore subliminal processing of observed pain and pleasure in others.

Results show that participants rated the neutral target as more or less likeable depending on whether they were subliminally primed with the pleasant or painful facial expression, respectively. The fMRI activity associated with painful and pleasant subliminal priming was mainly present in the anterior prefrontal cortex and the primary sensorimotor cortex, respectively.

Thus, our study provides behavioural and neuro-physiological evidence that: (i) emotional reactivity toward positive or negative states of others can occur at an entirely subliminal level; (ii) specific neural substrates underpin reactivity to positive- and negative-valence of social emotions. Hum Brain Mapp, 2017.

61. FIBROMYALGIA

Glutamate levels

Clin J Pain. 2017 Oct;33(10):944-954. doi: 10.1097/AJP.0000000000000474.

Measuring Glutamate Levels in the Brains of Fibromyalgia Patients and a Potential Role for Glutamate in the Pathophysiology of Fibromyalgia Symptoms: A Systematic Review.

Pyke TL[1], Osmotherly PG, Baines S.

OBJECTIVES:
The aim of this study was to systematically review the literature concerning proton magnetic resonance spectroscopy (H-MRS) measured glutamate levels in specific brain regions of fibromyalgia (FM) patients to determine if there is a correlation between raised glutamate levels and the presentation of FM.

MATERIALS AND METHODS:
The electronic databases-MEDLINE, EMBASE Classic+Embase, PsychINFO, Cochrane Database of Systematic Reviews, Cochrane Database of Abstracts of Reviews of Effect, Cochrane Central Register of Controlled Trials-were searched to find original studies that used H-MRS to measure glutamate concentrations in the brains of FM patients.

RESULTS:
Nine studies with a total of 482 participants were selected for inclusion in the review. Seven of the 8 studies that investigated an association between cerebral glutamate levels and FM, showed a positive association. Brain regions identified as having increased glutamate levels include the posterior cingulate gyrus, posterior insula, ventrolateral prefrontal cortex, and amygdala. One study reported a decrease in glutamate levels in the hippocampus of FM patients compared with healthy controls. Seven of the 8 studies that analyzed the correlations between cerebral glutamate levels and FM symptoms, found a significant positive correlation.

DISCUSSION:
Although the cause of FM remains inconclusive, there is converging data in favor of a dysregulation of pain processing in the central nervous system of FM patients, particularly associated with an increase in cerebral glutamate levels. Furthermore, there is evidence to support an association between increased glutamate levels and an increase in FM symptoms.

Attachment styles

Scand J Caring Sci. 2017 Sep 8. doi: 10.1111/scs.12477.

Attachment styles, pain intensity and emotional variables in women with fibromyalgia.

Peñacoba C[1], Perez-Calvo S[1], Blanco S[1], Sanroman L[1].

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This study aims to explore the relations between attachment styles and pain intensity and certain emotional variables (anxiety, depression and alexithymia) in a sample of fibromyalgia patients, in comparison with healthy women.

Data were collected from 146 women with fibromyalgia and 122 healthy women. The variables studied were attachment style, pain intensity, anxiety, depression and alexithymia dimensions. Patients with fibromyalgia showed lower percentages of secure attachment style (69.9% vs. 86%) whilst showing higher avoidant attachment (19.8% vs. 7.4%), as well as increased numbers of anxious-ambivalent attachment (10.3% vs. 6.6%) than healthy women (X^2 = 9.915, p = .007). Also, fibromyalgia patients showed significantly higher scores in two of the insecure attachment factors (p < .000; p = .020) and lower scores on the secure attachment factor (p = .008) in comparison with healthy women. Higher scores of alexithymia were found in women showing anxious-ambivalent and avoidant attachment styles in comparison with those showing a secure attachment style, regardless of the group they belonged to. In fibromyalgia patients, higher anxiety (p = .005) was found among the women with anxious-ambivalent attachment styles (Mean = 15.15; SD = 1.15) in comparison with those with secure attachment style (Mean = 11.18; SD = .45). No relation was found between attachment style and pain intensity. Avoidant attachment seems to carry out a contradictory role and warrants further research.

The results found seem to highlight the need for the Attachment-Diathesis Model of Chronic Pain to include attachment styles as a predictor of the emotional experience of pain in fibromyalgia patients.

62 A. NUTRITION/VITAMINS

Whey protein enhances proformance

Int J Med Sci. 2017 Jun 22;14(7):648-654. doi: 10.7150/ijms.19584. eCollection 2017.

Whey Protein Improves Marathon-Induced Injury and Exercise Performance in Elite Track Runners.

Huang WC[1], Chang YC[2], Chen YM[3], Hsu YJ[3], Huang CC[3], Kan NW[4], Chen SS[5].

Whey protein has been widely applied to athletes and the fitness field for muscle growth and performance improvement.

Limited studies focused on the beneficial effects of whey on aerobic exercise according to biochemical assessments. In the current study, 12 elite male track runners were randomly assigned to whey and maltodextrin groups for 5 weeks' supplementation. The aim of this study was to investigate the effect of whey protein on physiological adaptions and exercise performance. During this period, three time points (pre-, post-, and end-test) were used to evaluate related biochemical parameters, body composition, and performance. The post-test was set 1 day after a marathon for injury status evaluation and the end-test was also assessed after 1-week recovery from endurance test.

The results showed that the whey group exhibited significantly lower aspartate aminotransferase, alanine aminotransferase, lactate dehydrogenase, and creatine kinase indicators after the marathon (post-test), as well as at the end-test (p<0.016). The endurance performance in twelve-minute walk/run was also significantly elevated (p<0.012) possibly due to an increase in the muscle mass and amelioration of exercise injuries. In the current study, we demonstrated that whey protein can also be used for aerobic exercise for better physiological adaptation, in addition to resistance training. Whey protein could be also a potential nutrient supplement with a variety of benefits for amateur runners.

M. D. and fragility

Adherence to a Mediterranean diet is associated with lower incidence of frailty: A longitudinal cohort study
Clinical Nutrition
Veronese N, et al.

This study investigated the association between adherence to a Mediterranean diet and incidence of frailty in a large cohort of North American people. Over an 8-year follow-up period, researchers observed that even after adjusting for potential confounders, a higher adherence to a Mediterranean diet was associated with a lower incidence of frailty.

Methods

- Subjects at higher risk or having knee osteoarthritis were enrolled in this study.
- A validated Mediterranean diet score (aMED) as proposed by Panagiotakos was used to assess the adherence to the Mediterranean diet, which was then classified into five categories.
- Frailty was defined using the Study of Osteoporotic Fracture (SOF) index as the presence of ≥2 out of: (i) weight loss ≥5% between baseline and the subsequent follow-up visit; (ii) inability to do five chair stands; (iii) low energy level.

Results

- Findings demonstrated that, during the 8 years follow-up, of the 4,421 participants initially included (mean age: 61.2 years, % of females=58.0), the incidence of frailty was approximately half in those with a higher adherence to the Mediterranean diet (8 for 1,000 person years) vs. those with a lower adherence (15 for 1,000 persons-years).
- Researchers observed that after adjusting for 10 potential confounders (age, sex, race, body mass index, education, smoking habits, yearly income, physical activity level, Charlson co-morbidity index and daily energy intake), participants with the highest aMED scores had a significant attenuation in incident frailty (hazard ratio=0.71; 95% CIs: 0.50-0.99, p=0.047) with respect to those in a lower category.
- Data also reported that regarding individual components of the Mediterranean diet, low consumption of poultry was found to be associated with higher risk of frailty.

62 B. CRYOTHERAPY

Cyotherapy

The effects of cryotherapy versus cryostretching on clinical and functional outcomes in athletes with acute hamstring strain

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DOI: http://dx.doi.org/10.1016/j.jbmt.2017.08.007

Abstract

Purpose

Hamstring strain is a common sport injury that results in pain and functional limitation. Despite its high frequency in active populations, there is no agreement regarding the best method used for early intervention of hamstring strain. The aim of the present study was to compare the effects of cryotherapy and cryostretching on clinical and functional outcomes in athletes with acute hamstring strain.

Materials and methods

Thirty seven elite athletes with an acute grade I or II hamstring strain were randomly assigned to either cryotherapy (n = 19) or cryostretching (n = 18) group, receiving 5 sessions of supervised treatment plus home-based intervention monitored by the therapist. Pre-treatment to post-treatment changes in pain, active and passive knee extension range of motion and functional status were compared between the two groups.

Results

Compared to cryotherapy, cryostretching resulted in larger improvement of function and passive knee extension range of motion. Changes in active knee extension range of motion and pain severity were not significantly different between the two groups.

Conclusion

A rehabilitation protocol involving gentle stretching following cryotherapy is more effective than cryotherapy alone in the improvement of function and passive knee range of motion in patients with grade I and II hamstring strain.