

ABSTRACTS

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LUMBAR SPINE

LBP

Functional rating index for LBP in athletes

Scand J Med Sci Sports. 2015 Mar 24. doi: 10.1111/sms.12447.

The validity and reliability of the functional rating index for evaluating low back pain in athletes.

Naghdi S¹, Nakhostin Ansari N, Yazdanpanah M, Feise RJ, Fakhari Z.

Author informationAbstract

The purpose of the present study was to determine the reliability and validity of the Functional Rating Index (FRI) for athletes with low back pain (LBP). In this cross-sectional and prospective cohort study, the validated Persian FRI (PFRI) was tested in 100 athletes with LBP and 50 healthy athletes. From the athletes with LBP, data were recollected among 50 athletes with a 7-day interval to examine test-retest reliability. The content validity was excellent, and the athletes with LBP responded to all items with no floor or ceiling effects. The discriminative validity was supported by a statistically significant difference in PFRI total scores between the athletes with LBP and healthy athletes. The concurrent criterion validity was good ($\rho = 0.72$). The construct, convergent validity was good ($r = 0.83$). The internal consistency reliability estimate was high (Cronbach's $\alpha = 0.90$). Factor analysis demonstrated a single-factor structure with an explained variance of 52.22%. The test-retest reliability was excellent, indicated by an $ICC_{\text{agreement}}$ of 0.97, and the agreement observed in the Bland and Altman plot demonstrated no systematic bias. It is concluded that the PFRI has excellent psychometric properties for assessing athletes with LBP.

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KEYWORDS: Athletes; functional rating index; low back pain; validation *PMID: 25809588*

Spondylosis and LBP

Eur Spine J. 2015 Apr 2.

Systematic review of observational studies reveals no association between low back pain and lumbar spondylolysis with or without isthmic spondylolisthesis.

Andrade NS¹, Ashton CM, Wray NP, Brown C, Bartanusz V.

Author information

Abstract

PURPOSE:

The hypothesis that spondylolysis (SL) and/or isthmic spondylolisthesis (IS) cause low back pain (LBP) is widely accepted representing surgical indication in symptomatic cases. If SL/IS cause LBP, individuals with these conditions should be more prone to LBP than those without SL/IS. Therefore, the goal of the study was to assess whether the published primary data demonstrate an association between SL/IS and LBP in the general adult population.

METHODS:

Systematic review of published observational studies to identify any association between SL/IS and LBP in adults. The methodological quality of the cohort and case-control studies was evaluated using the Newcastle-Ottawa scale.

RESULTS:

Fifteen studies met inclusion criteria (one cohort, seven case-control, seven cross-sectional). Neither the cohort study nor the two highest-quality case-control studies detected an association between SL/IS and LBP; the same is true for the remaining studies.

CONCLUSIONS:

There is no strong or consistent association between SL/IS and LBP in epidemiological studies of the general adult population that would support a hypothesis of causation. It is possible that SL/IS coexist with LBP, and observed effects of surgery and other treatment modalities are primarily due to benign natural history and nonspecific treatment effects. We conclude that traditional surgical practice for the adult general population, in which SL/IS is assumed to be the cause of non-radicular LBP whenever the two coexist, should be reconsidered in light of epidemiological data accumulated in recent decades.

PMID: 25833204

Core PT

BMC Musculoskelet Disord. 2015 Apr 10;16:83. doi: 10.1186/s12891-015-0533-2.

Short-term effect on pain and function of neurophysiological education and sensorimotor retraining compared to usual physiotherapy in patients with chronic or recurrent non-specific low back pain, a pilot randomized controlled trial.

Wälti P^{1,2}, Kool J^{3,4}, Luomajoki H⁵.

BACKGROUND:

Non-specific chronic low back pain (NSCLBP) is a major health problem. Identification of subgroups and appropriate treatment regimen was proposed as a key priority by the Cochrane Back Review Group. We developed a multimodal treatment (MMT) for patients with moderate to severe disability and medium risk of poor outcome. MMT includes a) neurophysiological education on the perception of pain to decrease self-limitation due to catastrophizing beliefs about the nature of NSCLBP, b) sensory training of the lower trunk because these patients predominantly show poor sensory acuity of the trunk, and c) motor training to regain definite movement control of the trunk. A pilot study was conducted to investigate the feasibility of MMT, prior to a larger RCT, with focus on patients' adherence and the evaluation of short-term effects on pain and disability of MMT when compared to usual physiotherapy.

METHOD:

We conducted a randomised controlled trial (RCT) in a primary care physiotherapy centre in Switzerland. Outcome assessment was 12 weeks after baseline. Patients with NSCLBP, considerable disability (five or more points on the Roland and Morris Disability Questionnaire (RMDQ) and medium or high risk of poor outcome on the Keele Start Back Tool (KSBT) were randomly allocated to either MMT or usual physiotherapy treatment (UPT) by an independent research assistant. Treatment included up to 16 sessions over 8 to 12 weeks. Both groups were given additional home training of 10 to 30 minutes to be performed five times per week. Adherence to treatment was evaluated in order to assess the feasibility of the treatment. Assessments were conducted by an independent blinded person. The primary outcome was pain (NRS 0-10) and the secondary outcome was disability (RMDQ). Between-group effects with Student's t-test or the Mann-Whitney U test and the standardized mean difference of the primary outcome were calculated.

RESULTS:

Twenty-eight patients (46% male, mean age 41.5 years (SD 10.6)) were randomized to MMT (n = 14) or UPT (n = 14). Patients' adherence to treatment was >80% in both groups. Pain reduction (NRS; [95% CI]) was 2.14 [1.0 to 3.5] in the MMT and 0.69 [-2.0 to 2.5.] in the UPT. The between-group difference was 1.45 [0.0 to 4.0] (p = 0.03), representing a moderate effect size of 0.66 [-0.1 to 1.5]. Reduction in disability on the RMDQ was 6.71 [4.2 to 9.3] in MMT and 4.69 [1.9 to 7.4] in UPT, with a non-significant between-group difference of 2.02 [-1.5 to 5.6] (p = 0.25). The required sample size for a RCT with six months follow-up was estimated at 170 patients.

CONCLUSIONS:

MMT was found to be feasible and to significantly reduce pain in the short term when compared with UPT. A future RCT with a six-month follow-up would require approximately 170 patients.

Cognitive therapy in chronic LBP

Phys Ther. 2015 Apr 30.

Cognitive Functional Therapy for Disabling, Nonspecific Chronic Low Back Pain: Multiple Case-Cohort Study.

O'Sullivan K¹, Dankaerts W², O'Sullivan L³, O'Sullivan PB⁴.

Author information

Abstract

BACKGROUND:

Multiple dimensions across the biopsychosocial spectrum are relevant in the management of non-specific chronic low back pain (NSCLBP). Cognitive functional therapy is a behaviourally targeted intervention which combines normalisation of movement and abolition of pain behaviours with cognitive reconceptualisation of the NSCLBP problem, while also targeting psychosocial and lifestyle barriers to recovery.

OBJECTIVE:

To examine the effectiveness of cognitive functional therapy for people with disabling NSCLBP who are awaiting an appointment with a specialist medical consultant.

DESIGN:

A multiple case (n=26) cohort study consisting of 3 phases (A1-B-A2).

METHODS:

Measurement phase A1 was a baseline phase during which pain and functional disability were collected on three occasions over three months for all participants. During phase B, participants entered a cognitive functional therapy intervention program, involving approximately eight treatments over an average of 12 weeks. Finally, phase A2 was a 12 month no-treatment follow-up period. Outcomes were analysed using repeated measures ANOVA or Friedman's test (with post-hoc Bonferroni) across seven time intervals, depending on normality of data distribution.

RESULTS:

Statistically significant improvements in both functional disability ($p<0.001$) and pain ($p<0.001$) were observed immediately post-intervention, and maintained over the 12 months follow-up period. These reductions reached clinical significance for both disability and pain. Secondary psychosocial outcomes were significantly ($p<0.01$) improved after the intervention, including depression, anxiety, back beliefs, fear of physical activity, catastrophising and self-efficacy.

LIMITATIONS:

Not a randomised controlled trial. While primary outcome data was self-reported, the assessor was not blinded.

CONCLUSIONS:

These promising results suggest that cognitive functional therapy should be compared to other conservative interventions for the management of disabling NSCLBP in secondary care settings in large randomised clinical trials.

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PMID: 25929536

INJECTIONS**Nerve root injections**

Int Orthop. 2015 Apr 16.

What types of degenerative lumbar pathologies respond to nerve root injection? A retrospective review of six hundred and forty one cases.

Kanayama M¹, Oha F, Hashimoto T.

Author information

Abstract

PURPOSE:

Peri-radicular injection is a widely used procedure for treating lumbar radicular pain, but it remains unclear what types of lumbar pathologies respond well to this treatment. We aimed to investigate the efficacy of peri-radicular injection for degenerative lumbar disorders and to determine what types of pathologies respond well to this treatment.

METHODS:

We reviewed the records of 641 consecutive patients who underwent peri-radicular injection for degenerative lumbar pathologies with mean follow-up of 23.4 months. The pathologies included herniated disc in 286 patients, spinal stenosis in 141, degenerative spondylolisthesis in 136, failed back surgery in 24, isthmic spondylolisthesis in 22, degenerative scoliosis in 18, and foraminal stenosis in 14. Outcome measure was whether or not surgery is avoided by using peri-radicular injection. The rate of obviating surgery was determined in each pathology.

RESULTS:

Peri-radicular injection obviated surgeries in 331 patients (51.7 %). There were no complications related to the procedure, including neurological deterioration, infection, and haematoma. The rate of obviating surgery was 42.0 % in disc herniation, 52.9 % in degenerative spondylolisthesis, 67.4 % in spinal stenosis, 54.5 % in isthmic spondylolisthesis, 57.1 % in foraminal stenosis, 61.1 % in degenerative scoliosis and 54.1 % in failed back surgery. Poor outcomes were observed in herniated disc with spinal stenosis (17.9 % success), foraminal disc herniation (33.3 %), recurrent disc herniation (18.2 %) and failed back surgery with instability (33.3 %).

CONCLUSIONS:

This study demonstrated that 51.7 % of patients with degenerative lumbar pathologies were successfully treated by peri-radicular injection. Efficacy was limited in cases of herniated disc with spinal stenosis, foraminal disc herniation, recurrent disc herniation and failed back surgery with instability.

PMID: 25877160

SURGERY**Discectomy**

Int Orthop. 2015 Apr 12.

Evaluation of transforaminal endoscopic lumbar discectomy in the treatment of lumbar disc herniation.

Wang K¹, Hong X, Zhou BY, Bao JP, Xie XH, Wang F, Wu XT.

Author information

Abstract

PURPOSE:

The purpose of this study was to evaluate the efficacy of transforaminal endoscopic lumbar discectomy (TELD) in the treatment of lumbar disc herniation (LDH) and to identify the relationship between TELD efficacy and age.

METHODS:

A total of 207 consecutive LDH patients who had undergone TELD with the THESSYS system from January 2013 to September 2014 were divided into two groups on the basis of their age, with 108 cases in the ≤ 45 -year-old age group and 99 cases in the >45 -year-old group. The Oswestry Disability Index (ODI) was used to quantify the pain relief. The degree of pain and disability were measured on the basis of the visual analog scale (VAS) and the modified MacNab criteria. Complications, duration of hospital stay, surgical costs, and operation time were recorded and compared between the two groups. Spearman's coefficient of rank correlation was used to assess the learning curves for TELD.

RESULTS:

The mean pre-operative and postoperative VAS and ODI scores significantly improved in both age ≤ 45 group and age >45 group, with no significant differences between them. In age ≤ 45 group, 56 % had excellent outcomes, 28 % good, 14 % fair, and 3 % poor. In the age >45 group, 51 % had excellent outcomes, 20 % good, 25 % fair, and 4 % poor. The average lengths of hospital stay for the age ≤ 45 group and age >45 group were 6.8 and 8.4 days, respectively. The mean time to return to work or normal activities was ten days for the age ≤ 45 group and 15 days for the age >45 group. The mean operative time for the age ≤ 45 group was 94 minutes and that for age >45 group was 97 minutes. The surgical cost of age ≤ 45 group was 15,480 RMB, which was lower than the 16,381 RMB of age >45 group. A total of 14 patients in the age ≤ 45 group and 13 patients in age >45 group used analgesic medications. Three and five recurrences were reported in the age ≤ 45 group and age >45 , respectively. The steep learning curves of operative time plotted against the number of surgeries conducted suggest that the TELD technique can be mastered quickly in terms of reducing the duration of operation.

CONCLUSIONS:

The efficacy of TELD is relatively good for the selected young and elderly patients in this study. Therefore, age is not a predictor of TELD surgery-related outcomes.

PMID: 25864088

PELVIC ORGANS**Pelvic pain****New concepts on functional chronic pelvic and perineal pain: pathophysiology and multidisciplinary management**

Discovery Medicine, 04/13/2015Ploteau S, et al.

Abstract:

The management of chronic pelvic and perineal pain has been improved by a better understanding of the mechanisms of this pain and an optimized integrated multidisciplinary approach to the patient. The concept of organic lesions responsible for a persistent nociceptive factor has gradually been replaced by that of dysregulation of nociceptive messages derived from the pelvis and perineum. In this setting, painful diseases identified by organ specialists are usually also involved and share several common denominators (triggering factors, predisposing clinical context). These diseases include painful bladder syndrome, irritable bowel syndrome, vulvodynia, and chronic pelvic pain syndrome. The painful symptoms vary from one individual to another and according to his or her capacity to activate pain inhibition/control processes. Although the patient often attributes chronic pain to a particular organ (with the corollary that pain will persist until the organ has been treated), this pain is generally no longer derived from the organ but is expressed via this organ. Several types of clinical presentation of complex pelvic pain have therefore been pragmatically identified to facilitate the management of treatment failures resulting from a purely organ-based approach, which can also reinforce the patient's impression of incurability. These subtypes correspond to neuropathic pain, central sensitization (fibromyalgia), complex regional pain syndrome, and emotional components similar to those observed in post-traumatic stress disorder. These various components are also often associated and self-perpetuating.

Consequently, when pelvic pain cannot be explained by an organ disease, this model, using each of these four components associated with their specific mechanisms, can be used to propose personalized treatment options and also to identify patients at high risk of postoperative pelvic pain (multi-operated patients, central sensitization, post-traumatic stress disorder, etc.), which constitutes a major challenge for prevention of these types of pain that have major implications for patients and society.

Referred pain patterns

PLoS One. 2015 Mar 20;10(3):e0119542. doi: 10.1371/journal.pone.0119542. eCollection 2015.

Referred Pain Patterns Provoked on Intra-Pelvic Structures among Women with and without Chronic Pelvic Pain: A Descriptive Study.

Torstensson T¹, Butler S², Lindgren A¹, Peterson M², Eriksson M³, Kristiansson P³.

Author information

Abstract

OBJECTIVES:

To describe referred pain patterns provoked from intra-pelvic structures in women with chronic pelvic pain (CPP) persisting after childbirth with the purpose to improve diagnostics and give implications for treatment.

MATERIALS AND METHODS:

In this descriptive and comparative study 36 parous women with CPP were recruited from a physiotherapy department waiting list and by advertisements in newspapers. A control group of 29 parous women without CPP was consecutively assessed for eligibility from a midwifery surgery. Inclusion criterion for CPP was: moderate pain in the sacral region persisting at least six months after childbirth confirmed by pelvic pain provocation tests. Exclusion criteria in groups with and without CPP were: persistent back or pelvic pain with onset prior to pregnancy, previous back surgery and positive neurological signs. Pain was provoked by palpation of 13 predetermined intra-pelvic anatomical landmarks. The referred pain distribution was expressed in pain drawings and described in pain maps and calculated referred pain areas.

RESULTS:

Pain provoked by palpation of the posterior intra-pelvic landmarks was mostly referred to the sacral region and pain provoked by palpation of the ischial and pubic bones was mostly referred to the groin and pubic regions, with or without pain referred down the ipsilateral leg. The average pain distribution area provoked by palpation of all 13 anatomical landmarks was 30.3 mm² (19.2 to 53.7) in women with CPP as compared to 3.2 mm² (1.0 to 5.1) in women without CPP, $p < 0.0001$.

CONCLUSIONS:

Referred pain patterns provoked from intra-pelvic landmarks in women with CPP are consistent with sclerotomal sensory innervation. Magnification of referred pain patterns indicates allodynia and central sensitization. The results suggest that pain mapping can be used to evaluate and confirm the pain experience among women with CPP and contribute to diagnosis.

PMID: 25793999

Post partum pelvic pain

Phys Ther. 2015 Apr 30.

The Experiences of First-Time Mothers With Persistent Pelvic Girdle Pain After Childbirth: A Descriptive Qualitative Study.

Wuytack F¹, Curtis E², Begley C³.

Author information

Abstract

BACKGROUND:

Pelvic Girdle Pain (PGP) is common during pregnancy and negatively affects women's lives. When PGP persists after a birth, the way it impacts on women's lives may change, particularly for first-time mothers as they adjust to motherhood, yet the experiences of women with persistent PGP remain largely unexplored.

OBJECTIVES:

The objective of this study was to explore primiparous women's experiences of persistent PGP and its impact on their lives postpartum, including caring for their infant and their parental role.

DESIGN:

A descriptive qualitative study.

METHODS:

Following institution ethical approval, 23 consenting primiparous women with PGP that had started during pregnancy and persisted for at least 3 months postpartum participated in individual interviews. These were recorded, transcribed, and analysed using thematic analysis.

RESULTS:

Four themes emerged: (1) 'Putting up with it: coping with everyday life'; women put up with the pain but had to balance activities and were grateful for support from family and friends to face everyday challenges, (2) 'I don't feel back to normal'; feelings of physical limitations, frustration and a negative impact on their mood were described, (3) 'Unexpected'; persistent symptoms were unexpected for women due to a lack of information given about PGP, (4) 'What next?'; the future of their symptoms was met with great uncertainty and women expressed worry about having another baby.

CONCLUSION:

For first-time mothers, having persistent PGP postpartum impacts their daily lives in many ways. These findings provide important information for healthcare providers, which will improve their understanding of these women's experiences, enhance rapport, and can be used to provide information and address concerns, to optimise maternity care during pregnancy and beyond.

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PMID: 25929535

Vulvovaginal pain

J Sex Med. 2015 Apr 13. doi: 10.1111/jsm.12889.

Acceptance of Vulvovaginal Pain in Women with Provoked Vestibulodynia and Their Partners: Associations with Pain, Psychological, and Sexual Adjustment.

Boerner KE¹, Rosen NO.

[Author information](#)

Abstract

INTRODUCTION:

Provoked vestibulodynia (PVD) is a common vulvovaginal pain condition associated with negative psychological and sexual consequences for affected women and their sexual partners. Greater pain acceptance has been found to be associated with better functional and psychological outcomes in individuals with chronic pain, and acceptance-based strategies are being increasingly incorporated into treatment protocols. The present study is a novel investigation of pain acceptance in PVD couples.

AIM:

The aim was to examine the associations between acceptance of vulvovaginal pain and women's pain during intercourse, as well as the psychological and sexual adjustment of both women with PVD and their partners.

METHODS: Sixty-one couples (M_{age} for women = 27.95 years, $SD = 5.87$; M_{age} for men = 30.48 years, $SD = 6.70$) in which the woman was diagnosed with PVD completed the Chronic Pain Acceptance Questionnaire, in reference to women's vulvovaginal pain. Women also rated their pain during intercourse, and couples completed measures of anxiety, depression, sexual function, and sexual satisfaction.

MAIN OUTCOME MEASURES: Dependent measures were (i) women's self-reported pain during intercourse on a numerical rating scale; (ii) State-Trait Anxiety Inventory trait subscale; (iii) Beck Depression Inventory-II; (iv) Derogatis Interview for Sexual Functioning; and (v) Global Measure of Sexual Satisfaction Scale.

RESULTS:

Women's greater pain acceptance was associated with their lower self-reported pain during intercourse, controlling for partner's pain acceptance. Greater pain acceptance among women was associated with their own lower anxiety and depression, greater sexual functioning, as well as their own and their partner's greater sexual satisfaction, controlling for the partner's pain acceptance. Additionally, greater pain acceptance among male partners was associated with their own lower depression.

CONCLUSIONS:

Findings suggest that psychological interventions for PVD should target increasing couples' vulvovaginal pain acceptance in order to improve women's pain and the sexual and psychological functioning of both members of the couple. Boerner KE and Rosen NO. Acceptance of vulvovaginal pain in women with provoked vestibulodynia and their partners: Associations with pain, psychological, and sexual adjustment. *J Sex Med* **;**:**-*.

© 2015 International Society for Sexual Medicine.

KEYWORDS: Anxiety; Couples; Depression; Genital Pain; Pain Acceptance; Provoked Vestibulodynia; Sexual Functioning; Sexual Satisfaction; Vulvodynia PMID:25869256

VISCERA

IBS and vegetables

Eur J Gastroenterol Hepatol. 2015 Jun;27(6):623-30. doi: 10.1097/MEG.0000000000000330.

Consumption of vegetables and fruit and the risk of inflammatory bowel disease: a meta-analysis.

Li F¹, Liu X, Wang W, Zhang D.

Author information

Abstract

To date, associations between consumption of vegetables and fruit and the risk of inflammatory bowel disease have been a controversial subject. Therefore, we carried out a meta-analysis to evaluate the associations. A comprehensive search was performed in PubMed, Embase, Web of Science, and the China National Knowledge Infrastructure to identify all relevant studies. Pooled odds ratios (ORs) with 95% confidence intervals (CIs) from random-effects or fixed-effects models were calculated. Publication bias was estimated using Egger's test and the funnel plot. A total of 14 case-control studies were included in this meta-analysis. On the basis of the highest versus the lowest analysis, consumption of vegetables was associated inversely with the risk of ulcerative colitis (UC) (OR=0.71, 95% CI 0.58-0.88, n=9 studies), but not with Crohn's disease (CD) (OR=0.66, 95% CI 0.40-1.09, n=8 studies). Higher consumption of fruit was associated inversely with the risk of UC (OR=0.69, 95% CI 0.49-0.96, n=8 studies) and CD (OR=0.57, 95% CI 0.44-0.74, n=10 studies). For intake of vegetables and the risk of CD, subgroup analysis showed a significant association for studies carried out in Europe (OR=0.36, 95% CI 0.23-0.57), but not in Asia (OR=1.00, 95% CI 0.50-2.03). No significant publication bias was found for the analysis of intake of vegetables and the risk of UC, intake of fruit and the risk of UC, and intake of vegetables and the risk of CD.

This meta-analysis indicates that consumption of vegetables and fruit might be associated inversely with the risk of UC and CD, and the results need to be further confirmed.

PMID: 25831134

Gum chewing and parastalsis

J Clin Nurs. 2015 Apr 7. doi: 10.1111/jocn.12836.

Gum chewing and gastrointestinal function following caesarean delivery: a systematic review and meta-analysis.

Hochner H¹, Tenfelde SM, Abu Ahmad W, Liebergall-Wischnitzer M.

Author information

Abstract

AIMS AND OBJECTIVES:

The aims of this systematic review and meta-analysis were to summarise current knowledge regarding gum chewing intervention for activation of the gastrointestinal (GI) system following caesarean delivery.

BACKGROUND:

GI symptoms such as nausea, vomiting and defecatory difficulties are bothersome for women following a caesarean delivery. There is category A recommendation to not withhold oral intake postoperatively. However, current practice guidelines vary widely on time to initiate oral feeding post caesarean delivery, and additional research is needed. Gum chewing has been shown to stimulate the GI system in other postoperative patient populations.

DESIGN:

A systematic review and meta-analysis.

METHODS:

An electronic review was undertaken using the following resources: PubMed (Medline), CINAHL, EMBASE and ClinicalTrials.gov databases. Key words used in various combinations included caesarean section; caesarean delivery; postoperative chewing gum; bowel movement; bowel function and complications.

RESULTS:

A total of 171 articles were found of which 166 were excluded: 157 were duplicates and the remainder did not meet the inclusion criteria. Five randomised control trials were included in the meta-analysis, focusing on gum chewing as an intervention as compared with a nongum chewing intervention, with a total of 846 participants. Compared with the nongum chewing group, gum chewing showed a beneficial impact on the major outcomes of digestive system activation, including bowel sound, gas passage and defecation.

CONCLUSIONS:

This meta-analysis supports the effectiveness of gum chewing post caesarean delivery as a noninvasive/nonpharmacological intervention for reactivation of bowel movement.

RELEVANCE TO CLINICAL PRACTICE:

Gum chewing in the immediate postoperative period following caesarean delivery may provide a socially acceptable, low-cost and safe intervention to reduce postcaesarean delivery GI complications and restore GI function.

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KEYWORDS: *caesarean delivery; early oral intake; gastrointestinal function; gum chewing; meta-analysis; nonpharmacological intervention; postoperative complications; randomised controlled trials*

PMID:25850885

Gluten-free diet/coeliac disease

J Hum Nutr Diet. 2015 Apr 28. doi: 10.1111/jhn.12321.

Prediction of adherence to a gluten-free diet using protection motivation theory among adults with coeliac disease.

Dowd AJ¹, Jung ME, Chen MY, Beauchamp MR.

Author information

Abstract

BACKGROUND:

Coeliac disease is a chronic autoimmune disease that requires strict adherence to a gluten-free diet. However, strict adherence to a gluten-free diet is difficult, with findings from a recent review suggesting that up to 42% of individuals with coeliac disease do not eat a strict gluten-free diet.

METHODS:

The present study aimed to examine psychosocial predictors of adherence (purposeful and accidental) to a gluten-free diet among adults with coeliac disease over a 1-month period. In this longitudinal study, 212 North American adults with coeliac disease completed online questionnaires at two time points, baseline and 1 month later.

RESULTS:

The results revealed that intentions partially mediated the effects of symptom severity, self-regulatory efficacy, planning and knowledge on purposeful gluten consumption. Intentions did not mediate the effects of severity, response cost, self-regulatory efficacy, planning and knowledge for accidental gluten consumption but, interestingly, self-regulatory efficacy directly predicted fewer accidental incidents of gluten-consumption.

CONCLUSIONS:

These findings delineate the differential psychological processes in understanding accidental and purposeful gluten consumption among adults with coeliac disease and emphasise the importance of bolstering self-regulatory efficacy beliefs to prevent accidental and purposeful consumption of gluten.

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KEYWORDS:

adherence behaviour; coeliac disease; gluten-free diet; psychosocial

PMID: 25919067

Children and celiac disease and asthma

Eur Respir J. 2015 Apr 30. pii: ERJ-01857-2014.

Coeliac disease and asthma association in children: the role of antibiotic consumption.

Canova C¹, Pitter G², Ludvigsson JF³, Romor P⁴, Zanier L⁵, Zanotti R², Simonato L².

Author information

Abstract

The relationship between coeliac disease and asthma has been scarcely investigated. Infant antibiotic exposure has been linked to both diseases. We evaluated the association between childhood coeliac disease and asthma and the role of antibiotics in the first year of life. We followed a cohort of children born in 1995-2011 in the Friuli-Venezia Giulia region (Italy). Prescriptions for antibiotics in the first year of life and subsequent treated asthma were retrieved from drug prescription records; coeliac disease incident cases were identified from pathology reports, hospital discharges and exemption from prescription charges for clinical tests. We estimated incidence rate ratios (IRRs) using multivariate Poisson regression models. Among the 143 144 children, we identified 717 coeliac children and 34969 asthmatics. Children with asthma were at increased risk of coeliac disease (IRR 1.46, 95% CI 1.25-1.67). Restricting the analysis to asthma that occurred before the diagnosis of coeliac disease, the excess risk disappeared, except for coeliac disease diagnosed after 5 years of age (IRR 1.37, 95% CI 1.09-1.71).

Antibiotics were not a confounding factor in these associations. Childhood treated asthma and coeliac disease are significantly associated. This association is not confounded by antibiotic exposure in the first year of life and may be explained by other shared risk factors.

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IBS and cognitive behavioral therapy

BMC Gastroenterol. 2015 May 2;15(1):54.

Cognitive-behavioural therapy has no effect on disease activity but improves quality of life in subgroups of patients with inflammatory bowel disease: a pilot randomised controlled trial.

Mikocka-Walus A^{1,2,3}, Bampton P^{4,5}, Hetzel D⁶, Hughes P⁷, Esterman A⁸, Andrews JM^{9,10,11}.
Author information

Abstract

BACKGROUND:

Studies have demonstrated usefulness of cognitive-behavioural therapy (CBT) in managing distress in inflammatory bowel disease (IBD); however, few have focused on IBD course. The present trial aimed to investigate whether adding CBT to standard treatment prolongs remission in IBD in comparison to standard therapy alone.

METHODS:

A 2-arm parallel pragmatic randomised controlled trial (+CBT - standard care plus either face-to-face (F2F) or online over 10 weeks versus standard care alone (SC)) was conducted with adult patients in remission. IBD remission at 12 months since baseline was the primary outcome measure while the secondary outcome measures were mental health status and quality of life (QoL). Linear mixed-effect models were used to compare groups on outcome variables while controlling for baseline.

RESULTS:

Participants were 174 patients with IBD (90 + CBT, 84 SC). There was no difference in remission rates between groups, with similar numbers flaring at 12 months. Groups did not differ in anxiety, depression or coping at 6 or 12 months ($p > 0.05$). When only participants classified as 'in need' (young, high baseline IBD activity, recently diagnosed; poor mental health) were examined in the post-hoc analysis ($n = 74$, 34 CBT and 40 controls), CBT significantly improved mental QoL ($p = .034$, $d = .56$) at 6 months. Online CBT group had a higher score on Precontemplation than the F2F group, which is consistent with less developed coping with IBD in the cCBT group ($p = .045$).

CONCLUSIONS:

Future studies should direct psychological interventions to patients 'in need' and attempt to recruit larger samples to compensate for significant attrition when using online CBT.

TRIAL REGISTRATION:

The protocol was registered on 21/10/2009 with the Australian New Zealand Clinical Trials Registry (ID: ACTRN12609000913279).

PMID: 25934170

CERVICAL SPINE**Disc spacing**

Spine (Phila Pa 1976). 2015 Apr 1;40(7):E388-93. doi: 10.1097/BRS.0000000000000800.

Longer Plate-to-Disc Distance Prevents Adjacent-Level Ossification Development But Does Not Influence Adjacent-Segment Degeneration.

Yang H¹, Lu X, He H, Yuan W, Wang X, Liao X, Chen D.

Author information

Abstract

STUDY DESIGN:

Retrospective case-control study.

OBJECTIVE:

To clarify the association between plate-to-disc distance (PDD) and adjacent-level ossification development (ALOD) and adjacent segment degeneration (ASD).

SUMMARY OF BACKGROUND DATA:

Anterior cervical discectomy and fusion with plating provides higher fusion rate and improved alignment but has been reported to result in ALOD and ASD.

METHODS:

We retrospectively reviewed 218 patients with solid fusion after anterior cervical arthrodesis with plating at our institution between January 2004 and December 2010. PDD was measured on postoperative lateral radiographs for each adjacent disc space and used to assign patients to 1 of 3 groups: group L, long PDD (>5 mm); group S, short PDD (0 mm ≤ PDD ≤ 5 mm); and group N, PDD (<0 mm, disk space encroachment). Mean follow-up was 5.3 years. Incidences of cranial and caudal ALOD and ASD with and without symptoms were compared among groups. Severity of caudal ossification was not measured in 30 patients because bony overlap precluded adequate visualization of the caudal level.

RESULTS:

Ossification developed in 134 (61%) of 218 cranial adjacent disc spaces and 45 (24%) of 188 caudal adjacent disc spaces (P < 0.01). Mean cranial PDD was shorter than mean caudal PDD (P < 0.01). Ossification rate was higher in group N than in group S at the cranial adjacent disc spaces (100% vs. 66%, P < 0.01). Incidences of both cranial and caudal ALOD were significantly higher in group S than in group L (66% vs. 31%, P < 0.01; and 31% vs. 13%, P < 0.01, respectively). No significant differences in symptomatic and asymptomatic ASD were seen among groups.

CONCLUSION:

Longer PDD does not decrease the incidence of ASD but it can prevent ALOD. We now attempt to place anterior cervical plates of 5 mm or greater from adjacent disc spaces.

LEVEL OF EVIDENCE: 3. PMID: 25627288

Posterior LL ossification

Spine (Phila Pa 1976). 2015 Apr 1;40(7):E394-403. doi: 10.1097/BRS.0000000000000791.

Ossification of the Posterior Longitudinal Ligament of the Cervical Spine in 3161 Patients: A CT-Based Study.

Fujimori T¹, Le H, Hu SS, Chin C, Pekmezci M, Schairer W, Tay BK, Hamasaki T, Yoshikawa H, Iwasaki M.

Author information

Abstract

STUDY DESIGN:

A cross-sectional study.

OBJECTIVE:

To examine the prevalence of ossification of the posterior longitudinal ligament (OPLL) and ossification of the nuchal ligament (ONL) of the cervical spine in the San Francisco area.

SUMMARY OF BACKGROUND DATA:

The prevalence of OPLL and ONL is unknown in the non-Asian population.

METHODS:

This computed tomography-based cross-sectional study assessed the prevalence of OPLL and ONL within the cervical spine of patients treated at a level 1 trauma center between 2009 and 2012. The prevalence of both OPLL and ONL was compared between racial groups.

RESULTS:

Of the 3161 patients (mean age, 51.2 ± 21.6 yr; 66.1% male), there were 1593 Caucasians (50.4%), 624 Asians (19.7%), 472 Hispanics (14.9%), 326 African Americans (10.3%), 62 Native Americans (2.0%), and 84 Others (2.7%). The prevalence of cervical OPLL was 2.2% (95% confidence interval [CI]: 1.7-2.8). The adjusted prevalence was 1.3% in Caucasian Americans (95% CI: 0.7-2.3), 4.8% in Asian Americans (95% CI: 2.8-8.1), 1.9% in Hispanic Americans (95% CI: 0.9-4.0), 2.1% in African Americans (95% CI: 0.9-4.8), and 3.2% in Native Americans (95% CI: 0.8-12.3). The prevalence of OPLL in Asian Americans was significantly higher than that in Caucasian Americans (P = 0.005). ONL was detected in 346 patients and the prevalence was 10.9% (95% CI: 10.0-12.0). The adjusted prevalence of ONL was 7.3% in Caucasian Americans (95% CI: 5.8-9.3), 26.4% in Asian Americans (95% CI: 21.9-31.5), 7.4% in Hispanic Americans (95% CI: 5.2-10.5), 2.5% in African Americans (95% CI: 1.2-4.9), and 25.8% in Native Americans (95% CI: 16.5-37.5). ONL was significantly more common in Asian Americans than in Caucasian Americans, Hispanic Americans, and African Americans (P = 0.001).

CONCLUSION:

This study also demonstrated that OPLL and ONL were significantly more common in Asian Americans than in Caucasian Americans.

LEVEL OF EVIDENCE: 3. PMID:25811134

Hoffman's sign

Spine (Phila Pa 1976). 2015 Apr 1;40(7):475-9. doi: 10.1097/BRS.0000000000000794.

Hoffmann sign: clinical correlation of neurological imaging findings in the cervical spine and brain.

Grijalva RA¹, Hsu FP, Wycliffe ND, Tsao BE, Williams P, Akpolat YT, Cheng WK.

Author information

Abstract

STUDY DESIGN:

Retrospective validity study.

OBJECTIVE:

To investigate the relationship between Hoffmann sign and radiographical evidence of cervical spinal cord compression and brain lesions.

SUMMARY OF BACKGROUND DATA:

Clinical significance of Hoffmann sign remains controversial with conflicting reports regarding its sensitivity and specificity and its usefulness.

METHODS:

Patients were divided into 2 groups according to the presence of Hoffmann sign on physical examination. Imaging studies were blindly examined by 2 observers for possible cervical and brain lesions. The sensitivity, specificity, positive predictive value, negative predictive value, as well as accuracy for Hoffmann sign as it relates to cervical spinal cord compression and brain pathology, were calculated.

RESULTS:

Of the 91 patients with a positive Hoffmann sign, 32 (35%) showed severe cervical cord compression and/or myelomalacia. Forty-seven of these patients had brain imaging studies, and 5 (10%) had positive findings. There were 80 patients in the negative Hoffmann sign or control group. Twenty-one (27%) of them had severe cervical cord compression and/or myelomalacia. Twenty-three of these control patients underwent neurological imaging of the brain, and 2 (8%) had positive findings. Hoffmann sign was found to have 59% sensitivity, 49% specificity, 35% positive predictive value, and 72% negative predictive value for cervical cord compression. For brain pathology, sensitivity was 71%, specificity 33%, positive predictive value 10%, and negative predictive value 95%.

CONCLUSION:

Hoffmann sign has too low a positive predictive value to be relied upon as a stand-alone physical examination finding and is not a reliable screening tool for solely predicting the presence of cervical spinal cord compression or brain pathology.

LEVEL OF EVIDENCE: 2. PMID:25608244

HEADACHES

Obesity and Migraines

J Headache Pain. 2015 Mar 28;16(1):27. doi: 10.1186/s10194-015-0510-z.

Migraine and body mass index categories: a systematic review and meta-analysis of observational studies.

Ornello R¹, Ripa P², Pistoia F³, Degan D⁴, Tiseo C⁵, Carolei A⁶, Sacco S⁷.

Author information

Abstract

BACKGROUND:

Several studies have assessed the associations between migraine and underweight, pre-obesity or obesity, with conflicting results. To assess the consistency of the data on the topic, we performed a systematic review and meta-analysis of the available observational studies.

METHODS:

Multiple electronic databases were systematically searched up to October 2014 for studies assessing the association between migraine and body mass index categories (underweight, pre-obesity, or obesity).

RESULTS:

Out of 2,022 records, we included 15 studies. When considering the 11 studies following the World Health Organization BMI cutoffs, we found an increased risk of having migraine in underweight subjects (pooled adjusted effect estimate [PAEE] 1.21; 95% CI, 1.07-1.37; P = 0.002) and in obese women (PAEE 1.44; 95% CI, 1.05-1.97; P = 0.023) as compared with normal weight subjects; additionally, pre-obese subjects had an increased risk of having chronic migraine (PAEE 1.39; 95% CI, 1.13-1.71; P = 0.002). When considering all the 15 studies, we additionally found an increased risk of having migraine in obese as compared with normal weight subjects (PAEE 1.14; 95% CI, 1.02-1.27; P = 0.017); additionally, obese subjects had an increased risk of having chronic migraine (PAEE 1.75; 95% CI, 1.33-2.29; P < 0.001). The pooled analysis did not indicate an increased risk of having migraine in pre-obese subjects.

CONCLUSIONS:

The meta-analysis of the available observational studies suggested an association between migraine and obesity likely mediated by gender and migraine frequency. Further studies taking into account gender, migraine type, frequency, activity, and duration could provide more robust evidence.

PMID: 25903159

Sleep apnea and headache

J Headache Pain. 2015 Apr 21;16(1):34. doi: 10.1186/s10194-015-0517-5.

Tension-type headache associated with obstructive sleep apnea: a nationwide population-based study.

Chiu YC¹, Hu HY^{2,3}, Lee FP^{4,5}, Huang HM^{6,7}.

Author information

Abstract

BACKGROUND:

There is still controversy regarding the association between primary headaches and obstructive sleep apnea. We explored the relationship between tension-type headache (TTH) and obstructive sleep apnea (OSA) using a large nationwide population-based data set in Taiwan.

METHODS:

We identified 4759 patients diagnosed with OSA from the Taiwan Longitudinal Health Insurance Database, based on polysomnography, as the OSA group. We then randomly selected 19036 subjects without OSA, matched by sex and age, to serve as the non-OSA group. The multivariate Cox proportional hazards model with matching for age and sex was used to assess the possible associations between TTH and OSA among the patients.

RESULTS:

The prevalence of TTH was 10.2% among OSA patients and 7.7% among non-OSA patients ($p < 0.001$). The multivariate Cox proportional hazards model revealed patients with OSA were more likely to have TTH (hazard ratio, 1.18; 95% CI, 1.06-1.31) ($p = 0.003$) than patients in the non-OSA group.

CONCLUSION:

Patients with OSA had a higher likelihood of developing TTH than patients in the non-OSA group. Further studies of physiological patterns between OSA and TTH are needed to confirm the study findings.

PMID: 25896615

Menstrual cycle and HA

Pain Med. 2015 Apr 30. doi: 10.1111/pme.12788.

Menstrual-Cycle and Menstruation Disorders in Episodic vs Chronic Migraine: An Exploratory Study.

Spierings EL¹, Padamsee A.

Author information

Abstract

OBJECTIVE:

Migraine is a chronic condition of recurring moderate-to-severe headaches that affects an estimated 6% of men and 18% of women. The highest prevalence is in those 18-49 years of age, generally when women menstruate. It is divided into episodic and chronic migraine depending on the total number of headache days per month being 14 or less or 15 or more, respectively. Migraine has been associated with menorrhagia, dysmenorrhea, and endometriosis, the latter particularly in chronic migraine.

METHODS:

We conducted a questionnaire survey of 96 women with migraine, 18-45 years old, to determine the occurrence of the menstrual-cycle disorders, oligomenorrhea, polymenorrhea, and irregular cycle, and the menstruation disorders, dysmenorrhea and menorrhagia, in episodic vs chronic migraine.

RESULTS:

The prevalence of menstrual-cycle disorders in general (41.2 vs 22.2%) and dysmenorrhea (51.0 vs 28.9%) was statistically significantly higher in the women with chronic migraine than in those with episodic migraine ($P \leq 0.05$) (not corrected for multiple comparisons). Whether the migraine was menstruation sensitive, that is, the headaches consistently occurred or worsened with menstruation, did not impact the prevalence of menstrual disorders.

CONCLUSION:

We conclude that chronic migraine is possibly more often than episodic migraine associated with menstrual-cycle disorders in general and dysmenorrhea, without impact on menstruation sensitivity of the headaches.

Wiley Periodicals, Inc.

KEYWORDS:

Chronic Migraine; Dysmenorrhea; Episodic Migraine; Hypothyroidism; Irregular Cycle; Menorrhagia; Menstrual Disorders; Menstruation; Menstruation-Sensitive Migraine; Migraine; Oligomenorrhea; Polymenorrhea

PMID: 25930018

VESTIBULAR

BPPV and fracture

J Orthop Sports Phys Ther. 2015 May;45(5):406-12. doi: 10.2519/jospt.2015.5707. Epub 2015 Mar 26.

Benign paroxysmal positional vertigo is associated with an increased risk of fracture: a population-based cohort study.

Liao WL¹, Chang TP, Chen HJ, Kao CH.

Author information

Abstract

Study Design A nationwide, population-based, retrospective cohort study.

Objectives To investigate whether benign paroxysmal positional vertigo (BPPV) is associated with an increased risk of fracture.

Background Benign paroxysmal positional vertigo is a brief rotational vertigo induced by head position change that may increase the risk of falls and, therefore, fracture.

Methods Data from the Taiwan National Health Insurance Research Database were used for this study. We selected a case cohort comprising 3796 patients aged over 20 years who were newly diagnosed with BPPV between 2000 and 2006. In addition, we randomly selected a control cohort of 15 184 individuals without BPPV. Patients with BPPV were matched to individuals in the control group according to sex, age, and index year. A Cox proportional hazard regression was performed to compute the hazard ratio of fracture, after adjusting for demographic characteristics and comorbidities.

Results The prevalence of comorbidities was higher among patients with BPPV. After adjusting for age, sex, and comorbidities, patients with BPPV exhibited a 1.14-fold (95% confidence interval [CI]: 1.04, 1.25; $P < .01$) higher risk of fracture than those without BPPV. Trunk fracture (vertebra, rib, and pelvis) was the fracture type with the highest adjusted hazard ratio (1.24; 95% CI: 1.06, 1.45; $P < .01$) in patients with BPPV relative to those without BPPV. An analysis stratified according to demographic factors revealed that men with BPPV exhibited a 1.43-fold (95% CI: 1.22, 1.66; $P < .001$) higher risk of fracture. Patients with BPPV aged over 65 years exhibited a significantly higher risk of fracture (adjusted hazard ratio = 1.17; 95% CI: 1.03, 1.33; $P < .05$) than did those without BPPV.

Conclusion Patients with BPPV exhibited a higher risk of fracture than did those without BPPV. Level of evidence Prognosis, level 2b. J Orthop Sports Phys Ther 2015;45(5):406-412. Epub 26 Mar 2015. doi:10.2519/jospt.2015.5707.

KEYWORDS: *BPPV; falls; hazard ratio*

PMID:25808526

CONCUSSIONS

Preexisting sleep problems exacerbate outcomes

Am J Sports Med. 2015 Apr;43(4):830-8. doi: 10.1177/0363546514566193. Epub 2015 Feb 3.

The effect of preinjury sleep difficulties on neurocognitive impairment and symptoms after sport-related concussion.

Sufrinko A¹, Pearce K¹, Elbin RJ², Covassin T³, Johnson E¹, Collins M¹, Kontos AP⁴.

Author information

Abstract

BACKGROUND:

Researchers have reported that sleep duration is positively related to baseline neurocognitive performance. However, researchers have yet to examine the effect of preinjury sleep difficulties on postconcussion impairments.

PURPOSE:

To compare neurocognitive impairment and symptoms of athletes with preinjury sleep difficulties to those without after a sport-related concussion (SRC).

STUDY DESIGN:

Cohort study; Level of evidence, 3.

METHODS:

The sample included 348 adolescent and adult athletes (age, mean \pm SD, 17.43 \pm 2.34 years) with a diagnosed SRC. The sample was divided into 2 groups: (1) 34 (10%) participants with preinjury sleep difficulties (sleeping less as well as having trouble falling asleep; SLEEP SX) and (2) 231 (66%) participants without preinjury sleep difficulties (CONTROL). The remaining 84 (24%) participants with minimal sleep difficulties (1 symptom) were excluded. Participants completed the Immediate Postconcussion Assessment and Cognitive Test (ImPACT) and Postconcussion Symptom Scale (PCSS) at baseline and 3 postinjury intervals (2, 5-7, and 10-14 days after injury). A series of repeated-measures analyses of covariance with Bonferroni correction, controlling for baseline non-sleep-related symptoms, were conducted to compare postinjury neurocognitive performance between groups. Follow-up exploratory t tests examined between-group differences at each time interval. A series of analyses of variance were used to examine total PCSS score, sleep-related, and non-sleep-related symptoms across time intervals between groups.

RESULTS:

Groups differed significantly in PCSS scores across postinjury intervals for reaction time ($P < .001$), with the preinjury SLEEP SX group performing worse than controls at 5-7 days (mean \pm SD, 0.70 \pm 0.32 [SLEEP SX], 0.60 \pm 0.14 [CONTROL]) and 10-14 days (0.61 \pm 0.17 [SLEEP SX]; 0.57 \pm 0.10 [CONTROL]) after injury. Groups also differed significantly on verbal memory performance ($P = .04$), with the SLEEP SX (68.21 \pm 18.64) group performing worse than the CONTROL group (76.76 \pm 14.50) 2 days after injury. The SLEEP SX group reported higher total symptom ($P = .02$) and sleep-related symptom ($P = .02$) scores across postinjury time intervals.

CONCLUSION:

Preinjury sleep difficulties may exacerbate neurocognitive impairment and symptoms after concussion. The findings may help clinicians identify athletes who are at risk for worse impairments after a concussion due to preinjury sleep difficulties.

© 2015 The Author(s). KEYWORDS: concussion; injury; sleep problems PMID: 25649087

NFL – relationship of concussions and MS injury

Med Sci Sports Exerc. 2015 Apr 11.

Concussion Frequency Associates with Musculoskeletal Injury in Retired NFL Players.

Pietrosimone B¹, Golightly YM, Mihalik JP, Guskiewicz KM.

Author information

Abstract

OBJECTIVE:

Concussion is commonly associated with immediate and persistent alterations in motor function affecting postural control and gait. Patients with lower extremity joint injury have demonstrated functional alterations in the cerebral cortex suggesting that musculoskeletal injury may be linked to alterations in brain function. Therefore we examined the associations between concussion frequency and lower extremity musculoskeletal injury sustained during professional careers of National Football League (NFL) players in a cross-sectional study.

METHODS:

An inclusive health history survey was mailed to 3647 NFL players who retired during 1930-2001. Respondents reported total concussion frequency (0, 1, 2, or 3+) and presence (yes/no) of specific knee and ankle musculoskeletal injury during their NFL career. Separate logistic regression models were used to estimate associations between concussion frequency and each musculoskeletal injury type, adjusting for number of years played in the NFL, body mass index while playing in the NFL, and playing position.

RESULTS:

Data from 2429 players (66.6% response rate) were available for analysis. Nearly 61% reported suffering a concussion while competing in the NFL. Meniscal tear was the most commonly reported musculoskeletal injury (32%). Compared to NFL players who did not sustain a concussion, retired NFL players with 1, 2, or 3+ concussions had between 18-63%, 15-126%, and 73-165% higher odds of reporting various musculoskeletal injuries, respectively.

CONCLUSION:

A history of concussions was associated with a history of musculoskeletal injuries during NFL careers. These data suggest that a higher number of concussions is linked with a higher odds of reporting a musculoskeletal injury.

PMID: 25871466

Exertion tests

Med Sci Sports Exerc. 2015 Apr 11.

Exertion Testing in Youth with Mild Traumatic Brain Injury/Concussion.

DeMatteo C¹, Volterman KA, Breithaupt PG, Claridge EA, Adamich J, Timmons BW.

Author information

Abstract

PURPOSE:

The decision regarding return to activity (RTA) following mild traumatic brain injuries (mTBI)/concussion is one of the most difficult and controversial areas in concussion management, particularly for youth. This study investigated how youth with Post-Concussion Syndrome (PCS) are affected by exertion and whether standardized exertion testing using the McMaster All-Out Progressive Continuous Cycling Test can contribute to clinical decision making for safe RTA.

METHODS:

Fifty-four youth (8.5 - 18.3 yrs) with a previously confirmed concussion participated in the study. Each participant performed exertion testing on a cycle ergometer and completed a Post-Concussion Symptom Scale (PCSS) at the following time points: pre-exertion (baseline), 5min, 30min and 24h post-exertion. A modified PCSS was administered at two-min intervals during exertion.

RESULTS:

Participants had a mean \pm SD symptom duration of 6.3 ± 6.9 months after the most recent concussive injury, with a median of 4.1 months (Range: 0.7-35 months). Sixty three percent of participants had symptoms during exertion testing. Symptom profile (number and severity) significantly affected perception of exertion at 50% peak mechanical power (PMP). During acute assessment of symptoms (30-min post-exertion), headache ($p = 0.39$), nausea ($p = 0.63$) and dizziness ($p = 0.35$) did not change. However, both the number and severity of symptoms significantly improved over 24h, with 56.8% of youth showing improvements. The time from most recent injury had a significant impact on the symptom score at baseline, 30min post-exertion, and 24h post-exertion.

CONCLUSION:

Exertion testing has an important role in the evaluation of symptoms and readiness to RTA, particularly in youth who are slow to recover. Overall, controlled exertion seemed to lessen symptoms for most youth.

PMID: 25871465

GLENOHUMERAL/SHOULDER**Testing internal rotation**

J Manipulative Physiol Ther. 2015 May 1. pii: S0161-4754(15)00042-1. doi: 10.1016/j.jmpt.2014.10.017.

Kinematic Comparison and Description of the 3-Dimensional Shoulder Kinematics of 2 Shoulder Rotation Tests.

Pascoal AG¹, Morais N².
Author information

Abstract

OBJECTIVES:

The purpose of this study was to compare shoulder external rotation range of motion (ROM) during the hand-behind-neck (HBN) test and a standard shoulder external rotation test and to describe the 3-dimensional scapular motion during the HBN test.

METHODS:

An electromagnetic tracking device was used to assess the dominant shoulder of 14 healthy participants while performing active full ROM in a standard shoulder external rotation test in an elevated position (EREP) and in the HBN test. The humeral and scapular 3-dimensional positions at the end of EREP and HBN were compared using a paired-sample t test. A correlation analysis was performed between humeral and scapular angles to assess the contribution of scapular motion to the full shoulder ROM during the HBN test.

RESULTS:

No significant differences were found between the HBN test and the EREP at the end-range of the glenohumeral external rotation (HBN: $15.6^{\circ} \pm 6.3^{\circ}$ vs EREP: $23.4^{\circ} \pm 4.7^{\circ}$; $P = .08$) and on scapular internal-external rotation (HBN test: $21.2^{\circ} \pm 6.3^{\circ}$ vs EREP: $15.6^{\circ} \pm 1.8^{\circ}$; $P = .23$). Significant differences were found in scapular upward rotation (HBN: $21.2^{\circ} \pm 6.3^{\circ}$ vs EREP: $15.6^{\circ} \pm 1.8^{\circ}$; $P < .01$) and scapular spinal tilt (HBN: $-0.4^{\circ} \pm 2.3^{\circ}$ vs EREP: $8.1^{\circ} \pm 2.1^{\circ}$; $P < .01$). There was a positive correlation between the humeral angles and scapular internal and posterior spinal tilt angles with the HBN test.

CONCLUSIONS:

The results of the present study showed that, in young asymptomatic participants with no known shoulder pathology, the end-range of shoulder rotation was similar in the HBN test and in a standard shoulder rotation test. During the HBN test, the scapula assumed a more internal and anterior spinal tilted position at the end-range of active shoulder external rotation. These results suggest that the HBN test may be used to assess the end-range of glenohumeral external rotation.

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KEYWORDS: Articular; Biomechanical Phenomena; Range of Motion; Shoulder

PMID: 25939558

IMPINGMENT**Prevalence of calcium deposits**

J Shoulder Elbow Surg. 2015 Apr 11. pii: S1058-2746(15)00115-9. doi: 10.1016/j.jse.2015.02.024.

Prevalence of calcific deposits within the rotator cuff tendons in adults with and without subacromial pain syndrome: clinical and radiologic analysis of 1219 patients.

Louwerens JK¹, Sierevelt IN², van Hove RP³, van den Bekerom MP⁴, van Noort A³.

Author information

Abstract

BACKGROUND:

Calcific tendinopathy is one of the most frequent causes of pain in the shoulder and is characterized by the presence of calcific deposits in the rotator cuff; however, calcific deposits have also been described in asymptomatic individuals. Only a few authors have reported epidemiologic data on the prevalence of calcific deposits in the rotator cuff.

METHODS:

This study analyzed clinical and radiological data of 1219 adults with and without subacromial pain syndrome (SAPS) to assess the prevalence of calcific deposits in the rotator cuff. Multivariate analysis was used to define risk factors associated with the presence of symptomatic calcific tendinopathy.

RESULTS:

Calcific deposits were found in the rotator cuff of 57 of 734 asymptomatic patients (7.8%). Of 485 patients with SAPS, 42.5% had calcific deposits. Age between 30 and 60 years (odds ratio [OR], 8.0; 95% confidence interval [CI], 2.5-26.3; $P < .001$), subacromial pain (OR, 7.1; 95% CI, 5.1-9.9, $P < .001$), and female gender (OR, 1.5; 95% CI, 1.1-2.0; $P = .014$) were significantly associated with increased odds of calcific deposits.

CONCLUSION:

This study demonstrates that women aged between 30 and 60 years with SAPS and a calcific deposit of >1.5 cm in length have the highest chance of suffering from symptomatic calcific tendinopathy of the rotator cuff. The prevalence rates of 7.8% in asymptomatic patients and 42.5% in patients with SAPS provide a current view on the epidemiology of calcific deposits in the rotator cuff.

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KEYWORDS:

Calcific tendinopathy; epidemiology; prevalence; risk factors; subacromial pain syndrome

PMID: 25870115

In the military

J Shoulder Elbow Surg. 2015 Apr 10. pii: S1058-2746(15)00112-3. doi: 10.1016/j.jse.2015.02.021.

Shoulder impingement in the United States military.

Hsiao MS¹, Cameron KL², Tucker CJ³, Benigni M⁴, Blaine TA⁵, Owens BD⁶.
Author information

Abstract

BACKGROUND:

Little is known about the incidence and characteristics of primary, or external, shoulder impingement in an occupationally and physically active population. A longitudinal, prospective epidemiologic database was used to determine the incidence and risk factors for shoulder subacromial impingement in the United States (U.S.) military. Our hypothesis was that shoulder impingement is influenced by age, sex, race, military rank, and branch of service.

METHODS:

The Defense Medical Epidemiology Database was queried for all shoulder impingement injuries using International Classification of Disease, Ninth Addition, Clinical Modification code 726.10 within a 10-year period from 1999 through 2008. An overall injury incidence was calculated, and a multivariate analysis performed among demographic groups.

RESULTS:

In an at-risk population of 13,768,534 person-years, we identified 106,940 cases of shoulder impingement resulting in an incidence of 7.77/1000 person-years in the U.S. military. The incidence of shoulder impingement increased with age and was highest in the group aged ≥ 40 years (incidence rate ratio [IRR], 4.90; 95% confidence interval [CI], 4.61-5.21), was 9.5% higher among men (IRR, 1.10, 95% CI, 1.06-1.13), and compared with service members in the Navy, those in the Air Force, Army, and Marine Corps were associated with higher rates of shoulder impingement (IRR, 1.46 [95% CI, 1.42-1.50], 1.42 [95% CI, 1.39-1.46], and 1.31 [95% CI, 1.26-1.36], respectively).

CONCLUSIONS:

The incidence of shoulder impingement among U.S. military personnel is 7.77/1000 person-years. An age of ≥ 40 years was a significant independent risk factor for injury.

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KEYWORDS:

DMED; Shoulder; U.S. military; epidemiology; impingement; incidence

PMID: 25865088

ELBOW**Lateral epicondylitis and scapula weakness**

J Orthop Sports Phys Ther. 2015 May;45(5):414-24. doi: 10.2519/jospt.2015.5290. Epub 2015 Jan 10.

Scapular muscle performance in individuals with lateral epicondylalgia.

Day JM¹, Bush H, Nitz AJ, Uhl TL.

Author information

Abstract

Study Design Descriptive, laboratory-based, cross-sectional study.

Objectives To describe scapular musculature strength, endurance, and change in thickness in individuals with unilateral lateral epicondylalgia (LE) compared to the uninvolved limb and the corresponding limb of a matched comparison group. **Background** Reported poor long-term outcomes for the nonsurgical management of individuals with LE suggest a less-than-optimal rehabilitation process. Knowledge of scapular muscle function in a working population of individuals with LE may help to further refine conservative management of this condition.

Methods Twenty-eight patients with symptomatic LE and 28 controls matched by age and sex were recruited to participate in the study. Strength of the middle trapezius (MT), lower trapezius (LT), and serratus anterior (SA) was measured with a handheld dynamometer. A scapular isometric muscle endurance task was performed in prone. Changes in muscle thickness of the SA and LT were measured with ultrasound imaging. Analysis-of-variance models were used to determine within- and between-group differences.

Results The involved side of the group with LE had significantly lower values for MT strength ($P = .031$), SA strength ($P < .001$), LT strength ($P = .006$), endurance ($P = .003$), and change in SA thickness ($P = .028$) when compared to the corresponding limb of the control group. The involved side of the group with LE had significantly lower strength of the LT ($P = .023$) and SA ($P = .016$) when compared to the uninvolved limb; however, these differences were small and of potentially limited clinical significance.

Conclusion When compared to a matched comparison group, there were impairments of scapular musculature strength and endurance in patients with LE, suggesting that the scapular musculature should be assessed and potentially treated in this population. Cause and effect cannot be established, as the weakness of the scapular musculature could be a result of LE.

J Orthop Sports Phys Ther 2015;45(5):414-424. Epub 10 Jan 2015. doi:10.2519/jospt.2015.5290.

KEYWORDS: *serratus anterior; strength; trapezius; ultrasound imaging*

PMID: 25579691

HIP

IMPINGEMENT

Determining impingement

Arthroscopy. 2015 Mar 27. pii: S0749-8063(15)00005-5. doi: 10.1016/j.arthro.2014.12.022.

Inclusion and Exclusion Criteria in the Diagnosis of Femoroacetabular Impingement.

Yamasaki T¹, Yasunaga Y², Shoji T³, Izumi S³, Hachisuka S³, Ochi M³.

Author information

Abstract

PURPOSE:

The purpose of this study was to clarify the criteria for femoroacetabular impingement (FAI) by way of a systematic review of FAI-related articles, as well as to define more appropriate inclusion or exclusion criteria in the diagnosis of FAI.

METHODS:

A systematic review of FAI-related articles was performed using Web of Science. Thirty-two articles met the inclusion and exclusion criteria. In these articles we investigated radiographic findings for the diagnosis of FAI and the prevalence of each FAI-related finding.

RESULTS:

The crossover sign was used in 22 articles (69%); acetabular index, 9 articles (28%); posterior wall sign, 7 articles (22%); and prominence of the ischial spine sign, 3 articles (7%). Regarding acetabular coverage, the lateral center-edge (LCE) angle was described in 13 articles (41%), in which an LCE angle either of more than 40° or of more than 30° combined with an acetabular index of less than 0° was considered an inclusion criterion for pincer impingement. Meanwhile, the alpha angle was used in 28 articles (88%), in which 50° or 55° was recommended as a positive finding of cam impingement.

CONCLUSIONS:

Common findings of pincer or cam deformity were used to select FAI patients with sufficient coverage of the acetabulum with an LCE angle of more than 25°. Patients with an LCE angle of less than 25° or those with local acetabular deficiency regardless of having a normal LCE angle should be excluded from the FAI criteria, even if the FAI-related findings are positive.

LEVEL OF EVIDENCE:

Level IV, systematic review of Level I through IV studies.

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KNEE**Neuroplasticity**

J Orthop Sports Phys Ther. 2015 May;45(5):381-93. doi: 10.2519/jospt.2015.5549. Epub 2015 Jan 10.

Neuroplasticity following anterior cruciate ligament injury: a framework for visual-motor training approaches in rehabilitation.

Grooms D¹, Appelbaum G, Onate J.
Author information

Abstract

Synopsis The neuroplastic effects of anterior cruciate ligament injury have recently become more evident, demonstrating underlying nervous system changes in addition to the expected mechanical alterations associated with injury. Interventions to mitigate these detrimental neuroplastic effects, along with the established biomechanical changes, need to be considered in the rehabilitation process and return-to-play progressions. This commentary establishes a link between dynamic movement mechanics, neurocognition, and visual processing regarding anterior cruciate ligament injury adaptations and injury risk.

The proposed framework incorporates evidence from the disciplines of neuroscience, biomechanics, motor control, and psychology to support integrating neurocognitive and visual-motor approaches with traditional neuromuscular interventions during anterior cruciate ligament injury rehabilitation. Physical therapists, athletic trainers, strength coaches, and other health care and performance professionals can capitalize on this integration of sciences to utilize visual-training technologies and techniques to improve on already-established neuromuscular training methods.

Level of Evidence Therapy, level 5. J Orthop Sports Phys Ther 2015;45(5):381-393. Epub 10 Jan 2015. doi:10.2519/jospt.2015.5549.

KEYWORDS:

ACL; motor control; neuroscience; return to sports

PMID: 25579692

Muscle force

J Orthop Sports Phys Ther. 2015 May;45(5):360-5. doi: 10.2519/jospt.2015.5905. Epub 2015 Mar 26.

Muscle force cannot be directly inferred from muscle activation: illustrated by the proposed imbalance of force between the vastus medialis and vastus lateralis in people with patellofemoral pain.

Hug F¹, Hodges PW, Tucker K.
Author information

Abstract

Synopsis Muscle force cannot be directly inferred from neural drive assessed using electromyography (EMG). Although the limitations associated with inferring force from EMG are well known, this has received little attention in the clinical literature.

This commentary discusses these limitations within the context of the imbalance of force production between the vastus medialis (VM) and vastus lateralis (VL) muscles, which has been speculated to contribute to the development and/or persistence of patellofemoral pain. The balance of neural drive between vasti muscles is most frequently measured with 2 approaches: (1) the onset of VM EMG relative to that of the VL, and (2) the ratio of the EMG signal amplitude of the VM and VL. Here, we demonstrate that this classical approach cannot determine whether an imbalance of force exists between the VM and VL. Considerations such as altered electromechanical delay (time between the onsets of muscle activation and patellar motion) in people with patellofemoral pain may lead to a reconsideration of the classical interpretation of the onset of VM EMG signal relative to that of the VL. Also, beyond the amplitude of the neural drive, muscle force depends on several biomechanical factors (eg, specific tension and physiological cross-sectional area). Therefore, the VL/VM activation ratio does not provide information about the VL/VM force ratio, which is ultimately the most important information from a clinical perspective.

Although the literature includes defenses for both the existence and absence of this force imbalance in people with patellofemoral pain, a reconsideration of the methods used to assess this imbalance is needed. J Orthop Sports Phys Ther 2015;45(5):360-365. Epub 26 Mar 2015. doi:10.2519/jospt.2015.5905.

KEYWORDS: *anterior knee pain; biomechanics; electromechanical delay; electromyography; force*

PMID: 25808529

KNEE/ACL**Return to athletics after**

Am J Sports Med. 2015 Apr;43(4):848-56. doi: 10.1177/0363546514563282. Epub 2015 Jan 12.

Sports Participation 2 Years After Anterior Cruciate Ligament Reconstruction in Athletes Who Had Not Returned to Sport at 1 Year: A Prospective Follow-up of Physical Function and Psychological Factors in 122 Athletes.

Ardern CL¹, Taylor NF², Feller JA³, Whitehead TS⁴, Webster KE².

Author information

Abstract

BACKGROUND:

A return to their preinjury level of sport is frequently expected within 1 year after anterior cruciate ligament (ACL) reconstruction, yet up to two-thirds of athletes may not have achieved this milestone. The subsequent sports participation outcomes of athletes who have not returned to their preinjury level sport by 1 year after surgery have not previously been investigated.

PURPOSE:

To investigate return-to-sport rates at 2 years after surgery in athletes who had not returned to their preinjury level sport at 1 year after ACL reconstruction.

STUDY DESIGN: *Case series; Level of evidence, 4.*

METHODS:

A consecutive cohort of competitive- and recreational-level athletes was recruited prospectively before undergoing ACL reconstruction at a private orthopaedic clinic. Participants were followed up at 1 and 2 years after surgery with a sports activity questionnaire that collected information regarding returning to sport, sports participation, and psychological responses. An independent physical therapist evaluated physical function at 1 year using hop tests and the International Knee Documentation Committee knee examination form and subjective knee evaluation.

RESULTS:

A group of 122 competitive- and recreational-level athletes who had not returned to their preinjury level sport at 1 year after ACL reconstruction participated. Ninety-one percent of the athletes returned to some form of sport after surgery. At 2 years after surgery, 66% were playing sport, with 41% playing their preinjury level of sport and 25% playing a lower level of sport. Having a previous ACL reconstruction to either knee, poorer hop-test symmetry and subjective knee function, and more negative psychological responses were associated with not playing the preinjury level sport at 2 years.

CONCLUSION:

Most athletes who were not playing sport at 1 year had returned to some form of sport within 2 years after ACL reconstruction, which may suggest that athletes can take longer than the clinically expected time of 1 year to return to sport. However, only 2 of every 5 athletes were playing their preinjury level of sport at 2 years after surgery. When the results of the current study were combined with the results of athletes who had returned to sport at 1 year, the overall rate of return to the preinjury level sport at 2 years was 60%. Demographics, physical function, and psychological factors were related to playing the preinjury level sport at 2 years after surgery, supporting the notion that returning to sport after surgery is multifactorial.

© 2015 The Author(s). KEYWORDS: ACL; anterior cruciate ligament; orthopaedic; psychology; return to sport; sportPMID:25583757

Prediction of ACL injury

Am J Sports Med. 2015 Apr;43(4):839-47. doi: 10.1177/0363546514563277. Epub 2015 Jan 12.

Combined anatomic factors predicting risk of anterior cruciate ligament injury for males and females.

Sturnick DR¹, Vacek PM², DeSarno MJ², Gardner-Morse MG¹, Tourville TW¹, Slauterbeck JR¹, Johnson RJ¹, Shultz SJ³, Beynnon BD⁴.

Author information

Abstract

BACKGROUND:

Knee joint geometry has been associated with risk of suffering an anterior cruciate ligament (ACL) injury; however, few studies have utilized multivariate analysis to investigate how different aspects of knee joint geometry combine to influence ACL injury risk.

HYPOTHESES:

Combinations of knee geometry measurements are more highly associated with the risk of suffering a noncontact ACL injury than individual measurements, and the most predictive combinations of measurements are different for males and females.

STUDY DESIGN:

Case-control study; Level of evidence, 3.

METHODS:

A total of 88 first-time, noncontact, grade III ACL-injured subjects and 88 uninjured matched-control subjects were recruited, and magnetic resonance imaging data were acquired. The geometry of the tibial plateau subchondral bone, articular cartilage, and meniscus; geometry of the tibial spines; and size of the femoral intercondylar notch and ACL were measured. Multivariate conditional logistic regression was used to develop risk models for ACL injury in females and males separately.

RESULTS:

For females, the best fitting model included width of the femoral notch at its anterior outlet and the posterior-inferior-directed slope of the lateral compartment articular cartilage surface, where a millimeter decrease in notch width and a degree increase in slope were independently associated with a 50% and 32% increase in risk of ACL injury, respectively. For males, a model that included ACL volume and the lateral compartment posterior meniscus to subchondral bone wedge angle was most highly associated with risk of ACL injury, where a 0.1 cm³ decrease in ACL volume (approximately 8% of the mean value) and a degree decrease in meniscus wedge angle were independently associated with a 43% and 23% increase in risk, correspondingly.

CONCLUSION:

Combinations of knee joint geometry measurements provided more information about the risk of noncontact ACL injury than individual measures, and the aspects of geometry that best explained the relationship between knee geometry and the risk of injury were different between males and females. Consequently, a female with both a decreased femoral notch width and an increased posterior-inferior-directed lateral compartment tibial articular cartilage slope combined or a male with a decreased ACL volume and decreased lateral compartment posterior meniscus angle were most at risk for sustaining an ACL injury.

© 2015 The Author(s). KEYWORDS: ACL injury; anatomy; risk factors; tibial geometry

PMID: 25583759

Inflammatory response to injury

Arthritis Rheumatol. 2015 Apr 24. doi: 10.1002/art.39146.

Changes in synovial fluid and serum cytokines and ARGS-aggrecan, and urine CTX-II and NTX-I over five years after anterior cruciate ligament rupture: An exploratory analysis in the KANON trial.

Struglics A¹, Larsson S, Kumahashi N, Frobell R, Lohmander LS.

Author information

Abstract

OBJECTIVE:

Prospectively monitor levels of synovial fluid and serum pro-inflammatory cytokines and aggrecan ARGS neoepitope, and urine C-terminal type II (CTX-II) and N-terminal type I (NTX-I) collagen cross-linked telopeptides after acute anterior cruciate ligament (ACL) rupture.

METHODS:

Synovial fluid, serum and urine were collected from 121 adults at six occasions over five years after acute ACL injury. Reference samples were from subjects without knee injury. Concentrations of interleukin (IL)-6, IL-8, IL-10, interferon (IFN)- γ , and tumor necrosis factor (TNF)- α , ARGS-aggrecan, CTX-II and NTX-I were measured by enzyme-linked immunosorbent assays.

RESULTS:

Shortly after ACL injury, synovial fluid cytokine concentrations were elevated 6- (TNF- α) to 1050-fold (IL-6) compared to reference levels, while synovial fluid and serum ARGS-aggrecan and urine CTX-II were elevated 1.4- to 8-fold. Thereafter, concentrations of synovial fluid cytokines and ARGS-aggrecan and urine collagen telopeptides decreased with different half-lives, in mean years: IL-6 0.9, IL-8 2.2, IL-10 2.3, IFN- γ 3.1, TNF- α 3.6, ARGS-aggrecan 4.0. After five years the synovial fluid TNF- α concentration remained higher than the reference level. There was a correlation between synovial fluid and serum ARGS-aggrecan concentrations ($r_s = 0.36$). Synovial fluid ARGS-aggrecan and urine collagen telopeptides were correlated with synovial fluid cytokines ($r_s = 0.41$ to 0.49 and 0.21 to 0.31 , respectively).

CONCLUSION:

Acute ACL injury induced highly increased levels of inflammatory cytokines in the joint which were associated with proteolysis of aggrecan and type II collagen. Cytokine levels remained increased up to five years after injury, indicative of an extended local inflammation in the joint. This article is protected by copyright. All rights reserved.

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PMID: 25914389

Star balance test

Performance on the Modified Star Excursion Balance Test at the Time of Return to Sport Following Anterior Cruciate Ligament Reconstruction

Authors: Sarah Clagg, PT, DPT, SCS, AT¹, Mark V. Paterno, PT, PhD, SCS, AT², Timothy E. Hewett, PhD, FACSM³, Laura C. Schmitt, PT, PhD⁴

Published: *Journal of Orthopaedic & Sports Physical Therapy*, Ahead of Print **Pages:** 1-25 doi:10.2519/jospt.2015.5040

Study DesignCross-sectional.

ObjectivesTo compare performance on the modified star excursion balance test (SEBT) between participants with anterior cruciate ligament reconstruction (ACLR) at the time of return to sport and uninjured control participants.

BackgroundThe modified SEBT is a clinical tool to assess neuromuscular control deficits. Deficits in dynamic stability and neuromuscular control persist after ACLR, but assessment with the modified SEBT in this population at the time of return to sport has not been reported.

MethodsSixty-six participants (mean age: 17.6 years) at the time of return to sport following unilateral primary ACLR (ACLR group) and 47 uninjured participants (mean age: 17.0 years) serving as a control group (Control group) participated. For the modified SEBT, the anterior, posteromedial, and posterolateral reach distances were recorded. Lower extremity muscle strength was quantified with isokinetic dynamometry. Independent samples t-tests were used to evaluate performance differences between the ACLR and Control groups and between ACLR sub-groups. In the ACLR group, bi-variate correlations determined the association of modified SEBT performance with time since surgery and lower extremity muscle strength.

ResultsThe ACLR group had lower anterior reach distance on the involved and uninvolved limbs compared to the Control group. There were no differences observed between groups in reach distances for the posteromedial and posterolateral directions or limb symmetry indices for any of the reach directions. In the ACLR group, time from surgery and meniscal status at the time of ACLR did not influence modified SEBT performance while participants with patellar bone-tendon-bone grafts had lower posterolateral reach distance compared to those with hamstring grafts. In the ACLR group, involved limb hip abduction strength positively correlated with all reach distances and quadriceps strength positively correlated with posterolateral reach.

ConclusionAt the time of return to sport, participants post-ACLR demonstrated reduced modified SEBT anterior reach in both involved and uninvolved limbs compared to uninjured participants, with no other group differences. In the ACLR group, modified SEBT reach distance was associated with lower extremity muscle strength, but not with time from reconstruction or meniscal status at the time of ACLR. Lower extremity muscle strength and graft type may interact to influence modified SEBT posterior reach performance but this requires further study.

Level of EvidencePrognosis, level 2b-. *J Orthop Sports Phys Ther*, Epub 21 Apr 2015. doi:10.2519/jospt.2015.5040

Read More: <http://www.jospt.org/doi/abs/10.2519/jospt.2015.5040#.VUXMcmRVhHw>

PATELLA**Dislocations factors**

Am J Sports Med. 2015 Apr;43(4):921-7. doi: 10.1177/0363546514563904. Epub 2015 Jan 13.

The prevalence and combined prevalences of anatomic factors associated with recurrent patellar dislocation: a magnetic resonance imaging study.

Steensen RN¹, Bentley JC², Trinh TQ², Backes JR², Wiltfong RE².

Author information

Abstract

BACKGROUND:

Anatomic factors, including patella alta, increased tibial tubercle-trochlear groove (TT-TG) distance, rotational deformities, and trochlear dysplasia, are associated with dislocation of the patella. Identifying the presence of these anatomic factors both in isolation and in combination may influence treatment in patients with patellar dislocation.

PURPOSE:

The aim of this study was to compare the prevalence and combined prevalences of these anatomic factors using magnetic resonance imaging in a group of patients with and without histories of recurrent dislocation of the patella.

STUDY DESIGN:

Case-control study; Level of evidence, 3.

METHODS:

The prevalence and combined prevalences of patella alta, increased TT-TG distance, rotational deformity, and trochlear dysplasia on magnetic resonance imaging were reported and compared in 60 patients (60 knees) with and 120 patients (120 knees) without histories of recurrent patellar dislocation.

RESULTS:

Patients with recurrent patellar dislocation possessed higher rates of patella alta (60.0% vs 20.8%), increased TT-TG distance (42.0% vs 3.2%), rotational deformity (26.7% vs 2.5%), and trochlear dysplasia (68.3% vs 5.8%) compared with patients without histories of patellar dislocation. Multiple anatomic factors were identified in 58.3% of patients (35/60) with recurrent dislocation compared with only 1.7% of controls (2/120).

CONCLUSION:

Recurrent patellar dislocation is associated with an increased prevalence of patella alta, increased TT-TG distance, rotational deformity, and trochlear dysplasia compared with patients with no histories of patellar dislocation. Multiple anatomic factors were identified in the majority of patients with recurrent dislocation. Further research may identify which factors play a greater role in patellar stability and may allow physicians to predict which first-time dislocation patients are more likely to sustain recurrence.

© 2015 The Author(s). KEYWORDS: MRI; knee; patellar dislocation; patellofemoral; patellofemoral instability PMID: 25587185

OSTEOARTHRITIS/KNEE**Weight bearing changes**

Knee. 2015 Mar 17. pii: S0968-0160(15)00045-9. doi: 10.1016/j.knee.2015.02.012.

Kinematic analysis of knee varus and rotation movements at the initial stance phase with severe osteoarthritis of the knee.

Fukaya T¹, Mutsuzaki H², Wadano Y².

Author information

Abstract

BACKGROUND:

The purposes of this study were to understand the kinematics changes in the frontal and horizontal planes with severe medial knee OA at the stance phase and to examine the relationship between varus and rotational movements.

METHODS:

The OA group comprised 18 knees in 12 subjects (five men, seven women) with a Kellgren-Lawrence grade of three or four in at least one knee. From the results of gait analysis, we calculated Spearman rank-correlation coefficients for the following items: varus angle at initial contact (IC); varus angle at loading response (LR); amount of varus thrust from IC to LR; rotational angle at IC; rotational angle at LR and amount of rotational angle change from IC to LR.

RESULTS:

The results indicated that, as the external rotation angle at IC and internal rotational movement from IC to LR increased, the maximum varus angle to LR showed a tendency to become large. In addition, varus thrust showed a tendency to become larger as the external rotation angles increased at IC and LR. The subjects with severe knee OA showed a strong correlation between the knee varus angle at IC and at LR. Furthermore, an increase in movement to internal rotation of the knee during the initial stance phase increased the knee varus angle at LR.

CONCLUSIONS:

The control of the rotational movement according to the extent of varus thrust during the initial stance phase may have possible effects to decrease the load on the medial compartment of the knee.

Copyright © 2015 Elsevier B.V. All rights reserved. KEYWORDS: Correlation coefficient; Initial stance phase; Knee osteoarthritis; Rotational movement; Varus movement

PMID:25795547

Hyaluronic acid injections

Drug Des Devel Ther. 2015 Apr 8;9:2063-72. doi: 10.2147/DDDT.S81524. eCollection 2015.

Efficacy and safety of cross-linked hyaluronic acid single injection on osteoarthritis of the knee: a post-marketing Phase IV study.

Bashaireh K¹, Naser Z², Hawadya KA², Sorour S², Al-Khateeb RN³.

Author information

Abstract

PURPOSE:

The primary objective of this study was to evaluate the efficacy, safety, and duration of action of viscosupplementation with Crespine(®) Gel over a 9-month period.

MATERIALS AND METHODS:

The study was a post-marketing Phase IV study. A total of 109 participants with osteoarthritis of the knee (grades 1-4) in the tibio-femoral compartment were recruited in Jordan. Data were collected from each participant during the baseline visit. Each participant received Crespine(®) Gel injection, and follow-up visits took place at 3 months, 6 months, and 9 months post-injection.

MAIN OUTCOME MEASURES:

An assessment of participants by phone was conducted at 1 month, 2 months, 4 months, 5 months, 7 months, and 8 months post-injection. Western Ontario and McMaster Universities Arthritis Index questionnaires were completed during each visit. A 72-hour visit questionnaire was used to assess the safety of the injection. Statistical analysis included a two-sided 95% confidence interval for the difference between pain scores across visits, and the percent change from baseline was calculated.

MAIN RESULTS:

The full analysis included 84 participants who gave their informed consent and finished the necessary baseline and follow-up visits needed to assess efficacy and safety. Peak improvement was noted at 5 months post-injection, when pain and physical performance scores had decreased to 2.60 and 9.90, respectively, and the stiffness score was 0.33. The peak improvement in stiffness was noted at 8 months post-injection, when the stiffness score had decreased to 0.32. Significant improvements were still apparent at 9 months post-injection, when the pain score was 3.36, the stiffness score was 0.42, and the physical performance score was 11.5. All side effects were local and transient, and included pain, swelling, and redness of the knee. Most side effects were treated.

CONCLUSION:

Hyaluronan should be encouraged as an alternative or adjunct treatment to oral analgesics to reduce their required doses, and delay potential future surgical intervention.

KEYWORDS: *Crespine® Gel; hyaluronic acid; intra-articular injection; osteoarthritis*

PMID: 25897212

Strength and falls

J Rheumatol. 2015 May 1. pii: jrheum.140517.

Falls Associated with Muscle Strength in Patients with Knee Osteoarthritis and Self-reported Knee Instability.

de Zwart AH¹, van der Esch M¹, Pijnappels MA¹, Hoozemans MJ¹, van der Leeden M¹, Roorda LD¹, Dekker J¹, Lems WF¹, van Dieën JH¹.

Author information

Abstract

OBJECTIVE:

We aimed to evaluate the associations between knee muscle strength (MS) and falls, controlling for knee joint proprioception, varus-valgus knee joint laxity, and knee pain, among patients with knee osteoarthritis (OA) reporting knee instability.

METHODS:

A sample of 301 subjects (203 women, 98 men, 35-82 yrs) with established knee OA and self-reported knee instability was studied. The occurrence of at least 1 fall in the previous 3 months was assessed by questionnaire. Maximum knee extension and flexion strength were measured isokinetically. Additionally, proprioception, varus-valgus laxity, and pain were assessed. Student t tests were used to assess differences between subgroups. The association of muscle strength and falls was calculated using univariate and multivariate logistic regression analysis.

RESULTS:

Over 10% of the subjects (31 out of 301) reported a fall in the previous 3 months. High knee extension muscle strength (crude OR 0.3, 95% CI 0.1-0.8, $p = 0.022$) and high knee flexion muscle strength (crude OR 0.2, 95% CI 0.0-1.0, $p = 0.048$) were associated with a lower risk of falls. Proprioception and laxity did not confound this relationship. After adjusting for pain, extensor strength had an adjusted OR of 0.5 (95% CI 0.2-1.4, $p = 0.212$) for falls and flexor strength had an adjusted OR of 0.4 (95% CI 0.1-2.3, $p = 0.312$).

CONCLUSION:

High knee extension and flexion muscle strength decreased the risk of falls in patients with knee OA and self-reported knee instability. After considering the effect of pain, there was insufficient statistical power to detect an association between muscle strength and falls, which might be because of the low number of subjects who fell ($n = 31$).

PMID: 25934818

FOOT AND ANKLE

ANKLE/INSTABILITY

Postural coordination

Med Sci Sports Exerc. 2015 Mar 31.

Lower Limb Interjoint Postural Coordination One Year After First-Time Ankle Sprain.

Doherty C¹, Bleakley C, Hertel J, Caulfield B, Ryan J, Sweeney K, Patterson MR, Delahunt E.
Author information

Abstract

INTRODUCTION:

Longitudinal analyses of participants with a history of lateral ankle sprain are lacking. This investigation combined measures of lower limb inter-joint coordination and stabilometry to evaluate static unipedal stance with eyes-open (condition 1) and eyes-closed (condition 2) in a group of participants with chronic ankle instability compared to ankle sprain 'copers' (both recruited 12-months after sustaining an acute first-time lateral ankle sprain) and a group of non-injured controls.

METHODS:

Twenty-eight participants with chronic ankle instability, forty-two lateral ankle sprain 'copers' and twenty non-injured controls completed three 20-second single-limb stance trials in conditions 1 and 2. An adjusted coefficient of multiple determination statistic was used to compare stance limb 3-dimensional kinematic data for similarity in the aim of establishing patterns of inter-joint coordination. The fractal dimension of the stance limb center of pressure path was also calculated.

RESULTS:

Between-group analyses revealed that participants with chronic ankle instability displayed notable increases in ankle-hip linked coordination compared to both 'copers' (0.52 [1.05] vs -0.28 [0.9] $p = 0.007$) and controls (0.52 [1.05] vs -0.63 [0.64] $p = 0.006$) in condition 1 and to controls (0.62 [1.92] vs 0.1 [1.0]) in condition 2. Participants with chronic ankle instability also exhibited a decrease in the fractal dimension of the center-of-pressure path during condition 2 compared to both controls and 'copers'.

CONCLUSION:

Participants with chronic ankle instability present with a hip-dominant strategy of eyes-open and eyes-closed static unipedal stance. This coincided with reduced complexity of the stance-limb center of pressure path in the eyes-closed condition.

PMID: 25830363

MANUAL THERAPY

MWM for shoulder impingement

J Manipulative Physiol Ther. 2015 Apr 30. pii: S0161-4754(15)00045-7. doi: 10.1016/j.jmpt.2014.12.008.

Effects of Mobilization With Movement on Pain and Range of Motion in Patients With Unilateral Shoulder Impingement Syndrome: A Randomized Controlled Trial.

Delgado-Gil JA¹, Prado-Robles E², Rodrigues-de-Souza DP³, Cleland JA⁴, Fernández-de-Las-Peñas C⁵, Alburquerque-Sendín F⁶.

Author information

Abstract

OBJECTIVE:

The purpose of this study was to compare the immediate effects of mobilization with movement (MWM) to a sham technique in patients with shoulder impingement syndrome.

METHODS:

A randomized controlled trial was performed. Forty-two patients (mean \pm SD age, 55 \pm 9 years; 81% female) satisfied eligibility criteria, agreed to participate, and were randomized into an MWM group (n = 21) or sham manual contact (n = 21). The primary outcome measures including pain intensity, pain during active range of motion, and maximal active range of motion were assessed by a clinician blinded to group allocation. Outcomes were captured at baseline and after 2 weeks of MWM treatment or sham intervention. The primary analysis was the group \times time interaction.

RESULTS:

The 2 \times 2 analysis of variance revealed a significant group \times time interaction for pain intensity during shoulder flexion (F = 7.054; P = .011), pain-free shoulder flexion (F = 32.853; P < .001), maximum shoulder flexion (F = 18.791; P < .01), and shoulder external rotation (F = 7.950; P < .01) in favor of the MWM group. No other significant differences were found.

CONCLUSIONS:

Patients with shoulder impingement syndrome who received 4 sessions of MWM exhibited significantly better outcomes for pain during shoulder flexion, pain-free range of shoulder flexion, maximal shoulder flexion, and maximal external rotation than those patients who were in the sham group.

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KEYWORDS:

Musculoskeletal Manipulations; Pain; Range of Motion; Shoulder Impingement Syndrome

PMID: 25936465

Intrinsic motivation

Eur J Dent Educ. 2015 Apr 10. doi: 10.1111/eje.12147.

Encouraging intrinsic motivation in the clinical setting: teachers' perspectives from the self-determination theory.

Orsini C¹, Evans P, Binnie V, Ledezma P, Fuentes F.

Author information

Abstract

INTRODUCTION:

Self-determination theory postulates that the three basic psychological needs of autonomy, competence and relatedness have to be satisfied for students to achieve intrinsic motivation and internalisation of autonomous self-regulation towards academic activities. Consequently, the influence of the clinical teaching environment becomes crucial when satisfying these needs, particularly when promoting or diminishing students' intrinsic motivation. The aim of this study was to describe and understand how clinical teachers encourage intrinsic motivation in undergraduate dental students based on the three basic psychological needs described by the self-determination theory.

METHODS:

A qualitative case study approach was adopted, and data were collected through semistructured interviews with nine experienced undergraduate clinical teachers of one dental school in Santiago, Chile. Interview transcripts were analysed by two independent reviewers using a general inductive approach.

FINDINGS:

Several themes emerged outlining teaching strategies and behaviours. These themes included the control of external motivators; gradual transference of responsibility; identification and encouragement of personal interests; timely and constructive feedback; delivery of a vicarious learning experience; teamwork, team discussion, and presence of a safe environment, amongst others. Overall, teachers stressed the relevance of empowering, supporting and building a horizontal relationship with students.

CONCLUSIONS:

Our findings regarding dental education expand on the research outcomes from other health professions about how teachers may support students to internalise behaviours. An autonomy-supportive environment may lead students to value and engage in academic activities and eventually foster the use of an autonomy-supportive style to motivate their patients.

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KEYWORDS:

Chile; academic motivation; clinical teaching; dental education; qualitative research; self-determination

PMID: 25864943

Breath holding and pain

Pain Med. 2015 Apr 30. doi: 10.1111/pme.12764

Breath-Holding During Exhalation as a Simple Manipulation to Reduce Pain Perception.

Reyes Del Paso GA¹, Muñoz Ladrón de Guevara C, Montoro CI.

Author information

Abstract

OBJECTIVE:

Baroreceptor stimulation yields antinociceptive effects. In this study, baroreceptors were stimulated by a respiratory maneuver, with the effect of this manipulation on pain perception subsequently measured.

METHODS:

Thirty-eight healthy participants were instructed to inhale slowly (control condition) and to hold the air in lungs after a deep inhalation (experimental condition). It was expected that breath-holding would increase blood pressure (BP) and thus stimulate the baroreceptors, which in turn would reduce pain perception. Pain was induced by pressure algometry on the nail of the left-index finger, at three different pressure intensities, and quantified by visual analogue scales. Heart rate (HR) and BP were continuously recorded.

RESULTS:

Pain perception was lower when pain pressure was administered during the breath-holding phase versus the slow inhalation phase, regardless of the pressure intensity. During breath-holding, a rapid increase in BP and decrease in HR were observed, demonstrating activation of the baroreceptor reflex.

CONCLUSION:

Pain perception is reduced when painful stimulation is applied during breath-holding immediately following a deep inhalation. These results suggest that a simple and easy-to-perform respiratory maneuver could be used to reduce acute pain perception.

Wiley Periodicals, Inc.

KEYWORDS:

Baroreceptor Reflex; Blood Pressure; Heart Rate; Pain; Respiration

PMID: 25930190

Manual therapy for rotator cuff tendinopathy

J Orthop Sports Phys Ther. 2015 May;45(5):330-50. doi: 10.2519/jospt.2015.5455. Epub 2015 Mar 26.

The Efficacy of Manual Therapy for Rotator Cuff Tendinopathy: A Systematic Review and Meta-analysis.

Desjardins-Charbonneau A¹, Roy JS, Dionne CE, Frémont P, MacDermid JC, Desmeules F.
Author information

Abstract

Study Design Systematic review and meta-analysis.

Objectives To evaluate the efficacy of manual therapy (MT) for patients with rotator cuff (RC) tendinopathy.

Background Rotator cuff tendinopathy is a highly prevalent musculoskeletal disorder, for which MT is a common intervention used by physical therapists. However, evidence regarding the efficacy of MT is inconclusive.

Methods A literature search using terms related to shoulder, RC tendinopathy, and MT was conducted in 4 databases to identify randomized controlled trials that compared MT to any other type of intervention to treat RC tendinopathy. Randomized controlled trials were assessed with the Cochrane risk-of-bias tool. Meta-analyses or qualitative syntheses of evidence were performed.

Results Twenty-one studies were included. The majority had a high risk of bias. Only 5 studies had a score of 69% or greater, indicating a moderate to low risk of bias. A small but statistically significant overall effect for pain reduction of MT compared with a placebo or in addition to another intervention was observed (n = 406), which may or may not be clinically important, given a mean difference of 1.1 (95% confidence interval: 0.6, 1.6) on a 10-cm visual analog scale. Adding MT to an exercise program (n = 226) significantly decreased pain (mean difference, 1.0; 95% confidence interval: 0.7, 1.4), as reported on a 10-cm visual analog scale, which may or may not be clinically important. Based on qualitative analyses, it is unclear whether MT used alone or added to an exercise program improves function.

Conclusion For patients with RC tendinopathy, based on low- to moderate-quality evidence, MT may decrease pain; however, it is unclear whether it can improve function. More methodologically sound studies are needed to make definitive conclusions. Level of Evidence Therapy, level 1a-. J Orthop Sports Phys Ther 2015;45(5):330-350. Epub 26 Mar 2015. doi:10.2519/jospt.2015.5455.

KEYWORDS:

mobilization; physical therapy; shoulder impingement syndrome; shoulder pain

PMID: 25808530

STM

Rolfing and LBP

Structural integration as an adjunct to outpatient rehabilitation for chronic nonspecific low back pain: a randomized pilot clinical trial

Evidence-based Complementary and Alternative Medicine , 04/10/2015 Jacobson EE, et al.

Structural Integration (SI) is an alternative method of manipulation and movement education. To obtain preliminary data on feasibility, effectiveness, and adverse events (AE),

46 outpatients from Boston area with chronic nonspecific low back pain (CNSLBP) were randomized to parallel treatment groups of SI plus outpatient rehabilitation (OR) versus OR alone. Feasibility data were acceptable except for low compliance with OR and lengthy recruitment time. Intent-to-treat data on effectiveness were analyzed by Wilcoxon rank sum, per group. Median reductions in VAS Pain, the primary outcome, of 26 mm in SI + OR versus 0 in OR alone were not significantly different. Median reductions in RMDQ, the secondary outcome, of 2 points in SI + OR versus 0 in OR alone were significantly different.

Neither the proportions of participants with nor the seriousness of AE were significantly different. SI as an adjunct to OR for CNSLBP is not likely to provide additional reductions in pain but is likely to augment short term improvements in disability with a low additional burden of AE. A more definitive trial is feasible, but OR compliance and recruitment might be challenging. This trial is registered with ClinicalTrials.gov

CFS/BET

Pain with sitting

Microsurgery. 2015 Apr 27. doi: 10.1002/micr.22422.

Pain with sitting related to injury of the posterior femoral cutaneous nerve.

Dellon AL¹.

Author information

Abstract

PURPOSE:

The ischial tuberosity, referred to as the "sit bone" by patients with pain, is surrounded by critical nerves. This research relates, for the first time, the involvement of the posterior femoral cutaneous nerve (PFCN), including its perineal and inferior cluneal branches to the symptom of "sitting pain." An experience with PFCN resection for treatment of pain with sitting is reported.

PATIENTS AND METHODS:

The computer records were searched from 2010 through August of 2013, identifying 17 patients who had surgery on PFCN. Fifteen of these 17 were women. Mean age of 17 patients was 54.6 years (range 30-74 years). Each patient had pain with sitting, and spent much of the day standing or lying down. Each had symptoms involving posterior thigh and buttock. Three patients had bilateral problems. Each of 17 patients in this series had resection of PFCN through an incision in the gluteal crease. Resection included inferior cluneal branches and perineal branch.

RESULTS:

Of 17 patients, at a mean of 19.4 months (range 6 to 42 months) after surgery, the visual analog scale improved from a mean of 9.2 to a mean of 2.1 ($P < 0.0001$). There were 7 excellent, 6 good, 3 fair, and 1 poor result, for 76% good to excellent result in terms of pain relief and improvement in being able to sit.

CONCLUSION:

Pain with sitting can be due to injury to PFCN, a previously unreported etiology. Good to excellent results can be expected in 76% of carefully selected patients. © 2015 Wiley Periodicals, Inc. Microsurgery, 2015.

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PMID: 25917688

ATHLETICS

Injury rate

Am J Sports Med. 2015 Apr;43(4):816-22. doi: 10.1177/0363546514562553. Epub 2015 Jan 5.

Acute injuries in track and field athletes: a 3-year observational study at the penn relays carnival with epidemiology and medical coverage implications.

Opar D¹, Drezner J², Shield A³, Williams M⁴, Webner D⁵, Sennett B⁶, Kapur R⁶, Cohen M⁶, Ulager J⁶, Cafengiu A⁶, Cronholm PF⁷.

Author information

Abstract

BACKGROUND:

Few studies have examined acute injuries in track and field in both elite and subelite athletes.

PURPOSE:

To observe the absolute number and relative rates of injury in track and field athletes across a wide range of competition levels and ages during 3 years of the Penn Relays Carnival to assist with future medical coverage planning and injury prevention strategies.

STUDY DESIGN:

Descriptive epidemiology study.

METHODS:

Over a 3-year period, all injuries treated by the medical staff were recorded on a standardized injury report form. Absolute number of injuries and relative injury rates (number of injuries per 1000 competing athletes) were determined and odds ratios (ORs) of injury rates were calculated between sexes, competition levels, and events. Injuries were also broken down into major or minor medical or orthopaedic injuries.

RESULTS:

Throughout the study period, 48,473 competing athletes participated in the Penn Relays Carnival, and 436 injuries were sustained. For medical coverage purposes, the relative rate of injury subtypes was greatest for minor orthopaedic injuries (5.71 injuries per 1000 participants), followed by minor medical injuries (3.42 injuries per 1000 participants), major medical injuries (0.69 injuries per 1000 participants), and major orthopaedic injuries (0.18 injuries per 1000 participants). College/elite athletes displayed the lowest relative injury rate (7.99 injuries per 1000 participants), which was significantly less than that of high school (9.87 injuries per 1000 participants) and masters athletes (16.33 injuries per 1000 participants). Male athletes displayed a greater likelihood of having a minor orthopaedic injury compared with female athletes (OR, 1.36 [95% CI, 1.06-1.75]; $\chi(2) = 5.73$; $P = .017$) but were less likely to sustain a major medical injury (OR, 0.33 [95% CI, 0.15-0.75]; $\chi(2) = 7.75$; $P = .005$). Of the 3 most heavily participated in events, the 4 × 400-m relay displayed the greatest relative injury rate (13.6 injuries per 1000 participants) compared with the 4 × 100-m and 4 × 200-m relays.

CONCLUSION:

Medical coverage teams for future large-scale track and field events need to plan for at least 2 major orthopaedic and 7 major medical injuries per 10,000 participants. Male track and field athletes, particularly masters male athletes, are at greater risk of injury compared with other sexes and competition levels.

© 2015 The Author(s). KEYWORDS: athletics; epidemiology; injury; medical coverage
PMID:25560540

GAIT

Scoliosis and gait

Eur Spine J. 2015 Apr 17.

Analysis of coordination between thoracic and pelvic kinematic movements during gait in adolescents with idiopathic scoliosis.

Park HJ¹, Sim T, Suh SW, Yang JH, Koo H, Mun JH.

Author information

Abstract

PURPOSE:

In this research, we investigated the coordination pattern and consistency of coordination between the thorax and pelvis during gait in patients with idiopathic scoliosis.

METHODS:

Across the study, 69 adolescent girls (controls: 30, patients: 39) participated. All participants were asked to walk 10 m barefoot at a self-selected speed. The walking speed, stride length, and range of motion of the pelvic and thoracic angles were collected using a three-dimensional optical motion analysis system, and the thorax-pelvis coordination was quantified using a vector coding technique. The frequency of four different patterns of coordination (in-phase, anti-phase, pelvis only, and thorax only) and the consistency of coordination including direction and magnitude during the gait cycle of the two groups were investigated. Independent-sample t tests were performed to examine differences between the two groups with regard to coordination patterns and consistency.

RESULTS:

The patients with idiopathic scoliosis showed significantly higher in-phase and relatively lower anti-phase in the transverse plane compared to controls. Additionally, the pelvis only in the transverse, frontal, and sagittal planes was significantly lower in patients. The consistency of coordination in patients was significantly lower than in controls in direction and magnitude on the transverse and frontal planes.

CONCLUSION:

From viewpoint of the thorax-pelvis coordination, patients with IS had less gait stability in the trunk than controls.

PMID:25893334

Knee OA and alterations

J Orthop Sports Phys Ther. 2015 May;45(5):351-9. doi: 10.2519/jospt.2015.5540. Epub 2015 Mar 26.

Altered gait characteristics in individuals with knee osteoarthritis and self-reported knee instability.

Farrokhi S¹, O'Connell M, Gil AB, Sparto PJ, Fitzgerald GK.
Author information

Abstract

Study Design Experimental laboratory study.

Objective To characterize the differences in lower extremity gait biomechanics in individuals who have knee osteoarthritis (OA) with and without self-reported knee instability.

Background Individuals with knee OA who experience episodes of knee instability often report gait difficulties that interfere with their daily lives. A better understanding of the alterations in gait biomechanics may help to mitigate symptomatic knee instability in this patient population.

Methods Seventeen participants with knee OA and self-reported knee instability and 36 participants with knee OA and no self-reported knee instability underwent instrumented gait analysis on level ground. Knee-specific symptoms and functional limitations were assessed using the Western Ontario and McMaster Universities Osteoarthritis Index.

Results Knee instability was associated with greater odds of reporting moderate to severe gait-related pain (odds ratio = 6.0; 95% confidence interval: 1.2, 28.9) and moderate to severe difficulty when walking on flat surfaces (odds ratio = 10.7; 95% confidence interval: 1.7, 69.2). During early stance, the group with self-reported knee instability walked with a greater knee flexion excursion ($P = .02$) and a smaller lower extremity support moment ($P < .01$), due to reduced contributions from the hip extensors ($P < .01$) and ankle plantar flexors ($P = .04$). The group with self-reported knee instability also walked with a greater knee extensor contribution to the lower extremity support moment ($P = .04$) during the initial knee extension phase of gait compared to their counterparts with good knee stability.

Conclusion These findings suggest that self-reported knee instability is associated with significant alterations in hip, knee, and ankle joint function during the stance phase of gait in individuals with knee OA. J Orthop Sports Phys Ther 2015;45(5):351-359. Epub 26 Mar 2015. doi:10.2519/jospt.2015.5540.

KEYWORDS: *biomechanics; kinematics; kinetics; lower extremity*

PMID:25808531

RUNNING

Leg strength in runners with LBP

Low Back and Lower Limb Muscle Performance in Male and Female Recreational Runners With Chronic Low Back Pain

Authors: [Congcong Cai](#), MSc^{1,2}, [Pui W. Kong](#), PhD¹

Published: *Journal of Orthopaedic & Sports Physical Therapy*, Ahead of Print **Pages:** 1-30 doi:10.2519/jospt.2015.5460

Study Design Controlled Laboratory Study; Cross-sectional.

Objective To compare lumbar extensor muscle fatigability, lumbar muscle activation, and lower limb strength between male and female runners with chronic low back pain (LBP) and healthy runners.

Background Little is known about muscle performance in runners with chronic LBP.

Methods 18 recreational runners with chronic LBP (9 males and 9 females; mean age = 27.8 years) and 18 healthy recreational runners (9 males and 9 females; mean age = 24.6 years) were recruited. The median frequency slopes for bilateral iliocostalis and longissimus were calculated from electromyographic signals captured during a 2-minute Sorenson Test. The thickness changes of the transversus abdominis and lumbar multifidus between resting and contraction were measured using an ultrasound scanner. Peak concentric torque of the bilateral hip extensors, hip abductors, and knee extensors were measured using an isokinetic dynamometer at 60°/s. The average values for both sides were used for statistics analysis.

Results When averaged across genders, peak knee extensor torque was 12.2% lower in the LBP group compared to the healthy group [mean difference (95% CI) = 0.29 (0.06-0.53) Nm/kg, $p = .016$]. Male runners with chronic LBP exhibited smaller lumbar multifidus thickness changes compared to healthy male runners [mean difference (95% CI) = 0.13 (0.01-0.25) cm, $p = .033$]. No other group differences were observed.

Conclusion Runners with chronic LBP exhibited diminished knee extensor strength compared to healthy runners. Male runners with chronic LBP demonstrated additional deficits in lumbar multifidus activation. *J Orthop Sports Phys Ther*, Epub 21 Apr 2015. doi:10.2519/jospt.2015.5460

Keyword: [electromyography](#), [isokinetic strength](#), [muscle activation](#), [rehabilitative ultrasound image](#)

Read More: <http://www.jospt.org/doi/abs/10.2519/jospt.2015.5460#.VUXL2GRVhHw>

Injury definition

J Orthop Sports Phys Ther. 2015 May;45(5):375-80. doi: 10.2519/jospt.2015.5741. Epub 2015 Mar 26.

A consensus definition of running-related injury in recreational runners: a modified delphi approach.

Yamato TP¹, Saragiotto BT, Lopes AD.
Author information

Abstract

Study Design Delphi study.

Objective To reach a consensus definition of running-related injury in recreational runners through a modified Delphi approach.

Background Many studies have suggested the need for a standardized definition of running-related injury to provide uniformity to injury surveillance in running.

Methods We invited 112 researchers from running-related injury studies identified in a previous systematic review to classify words and terms frequently used in definitions of running-related injury in an online form during 3 rounds of study. In the last round, participants were asked to approve or disapprove the consensus definition. We considered an agreement level of at least 75% to be a consensus.

Results Thirty-eight participants agreed to participate in the study. The response rates were 94.7% (n = 36) for the first round, 83.3% (n = 30) for the second round, and 86.7% (n = 26) for the third round. A consensus definition of running-related injury was reached, with 80% of participants approving the following: "Running-related (training or competition) musculoskeletal pain in the lower limbs that causes a restriction on or stoppage of running (distance, speed, duration, or training) for at least 7 days or 3 consecutive scheduled training sessions, or that requires the runner to consult a physician or other health professional."

Conclusion The proposed standardized definition of running-related injury could assist in standardizing the definitions used in sport science research and facilitate between-study comparisons. Future studies testing the validity of the proposed consensus definition, as well as its accurate translation to other languages, are also needed. J Orthop Sports Phys Ther 2015;45(5):375-380. Epub 26 Mar 2015. doi:10.2519/jospt.2015.5741.

KEYWORDS: *jogging; judgement; lower extremity; terminology*

PMID:25808527

Describing

J Orthop Sports Phys Ther. 2015 May;45(5):366-74. doi: 10.2519/jospt.2015.5750. Epub 2015 Mar 26.

Descriptors used to define running-related musculoskeletal injury: a systematic review.

Yamato TP¹, Saragiotto BT, Hespanhol Junior LC, Yeung SS, Lopes AD.

Author information

Abstract

Study Design Systematic review.

Objectives To systematically review the descriptors used to define running-related musculoskeletal injury and to analyze the implications of different definitions on the results of studies.

Background Studies have developed their own definitions of running-related musculoskeletal injuries based on different criteria. This may affect the rates of injury, which can be overestimated or underestimated due to the lack of a standard definition.

Methods Searches were conducted in the Embase, PubMed, CINAHL, SPORTDiscus, LILACS, and SciELO databases, without limits on date of publication and language. Only articles that reported a definition of running-related injury were included. The definitions were classified according to 3 domains and subcategories: (1) presence of physical complaint (symptom, body system involved, region), (2) interruption of training or competition (primary sports involved, extent of injury, extent of limitation, interruption, period of injury), and (3) need for medical assistance. Spearman rank correlation was performed to evaluate the correlation between the completeness of definitions and the rates of injury reported in the studies.

Results A total of 48 articles were included. Most studies described more than half of the subcategories, but with no standardization between the terms used within each category, showing that there is no consensus for a definition. The injury rates ranged between 3% and 85%, and tended to increase with less specific definitions.

Conclusion The descriptors commonly used by researchers to define a running-related injury vary between studies and may affect the rates of injuries. The lack of a standardized definition hinders comparison between studies and rates of injuries. J Orthop Sports Phys Ther 2015;45(5):366-374. Epub 26 Mar 2015. doi:10.2519/jospt.2015.5750.

KEYWORDS: *jogging; lower extremity; sports; terminology*

PMID: 25808528

PAIN**Ice**

J Shoulder Elbow Surg. 2015 Mar 27. pii: S1058-2746(15)00077-4. doi: 10.1016/j.jse.2015.02.004.

Compressive cryotherapy versus ice-a prospective, randomized study on postoperative pain in patients undergoing arthroscopic rotator cuff repair or subacromial decompression.

Kraeutler MJ¹, Reynolds KA², Long C², McCarty EC².
Author information

Abstract

BACKGROUND:

The purpose of this study was to compare the effect of compressive cryotherapy (CC) vs. ice on postoperative pain in patients undergoing shoulder arthroscopy for rotator cuff repair or subacromial decompression. A commercial device was used for postoperative CC. A standard ice wrap (IW) was used for postoperative cryotherapy alone.

METHODS:

Patients scheduled for rotator cuff repair or subacromial decompression were consented and randomized to 1 of 2 groups; patients were randomized to use either CC or a standard IW for the first postoperative week. All patients were asked to complete a "diary" each day, which included visual analog scale scores based on average daily pain and worst daily pain as well as total pain medication usage. Pain medications were then converted to a morphine equivalent dosage.

RESULTS:

Forty-six patients completed the study and were available for analysis; 25 patients were randomized to CC and 21 patients were randomized to standard IW. No significant differences were found in average pain, worst pain, or morphine equivalent dosage on any day.

CONCLUSION:

There does not appear to be a significant benefit to use of CC over standard IW in patients undergoing shoulder arthroscopy for rotator cuff repair or subacromial decompression. Further study is needed to determine if CC devices are a cost-effective option for postoperative pain management in this population of patients.

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KEYWORDS:

Compressive cryotherapy; cold compression; cryotherapy; morphine equivalent dosage; postoperative pain; rotator cuff repair; shoulder arthroscopy; subacromial decompression

PMID: 25825138

Neuropathic pain in RA

Archives of Rheumatology, 05/06/2015

Prevalence of Neuropathic Pain in Rheumatic Disorders: Association With Disease Activity, Functional Status and Quality of Life

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Keywords: Ankylosing spondylitis, pain, quality of life, rheumatoid arthritis

Abstract

Objectives: This study aims to investigate neuropathic pain in rheumatologic disorders including rheumatoid arthritis (RA), ankylosing spondylitis (AS), and osteoarthritis (OA) using PainDETECT and to determine its effect on the quality of life in terms of disease activity, functional status, social and emotional functioning.

Patients and methods: A total of 150 patients (66 males, 84 females; mean age 48.44±12.22 years; range 25 to 65 years) were included in the study. Of these patients, 50 had OA, 50 had RA, and 50 had AS. Control group consisted of 50 healthy subjects (20 males, 30 females; mean age 48.36±12.68 years; range 25 to 65 years). OA severity was evaluated by Western Ontario and McMasters Universities Index of Osteoarthritis. In RA patients, Disease Activity Score-28 was used for measuring disease activity, and Stanford Health Assessment Questionnaire for functional status. In AS patients, disease activity was assessed by Bath Ankylosing Spondylitis Disease Activity Index and functional status by Bath Ankylosing Spondylitis Functional Index. Neuropathic pain was determined by PainDETECT questionnaire and quality of life by Nottingham Health Profile.

Results: Prevalence of neuropathic pain was 44% in OA, 28% in AS, and 18% in RA patients. Compared with control patients, prevalence was higher in OA [Odds ratio=12.46 95% confidence interval (3.89-39.85)] (p=0.00) and AS patients [Odds ratio=4.47 95% confidence interval (1.36-14.76)] (p=0.009). In OA patients, PainDETECT was correlated with Western Ontario and McMasters Universities Index of Osteoarthritis (p=0.00). In all of the patient groups, PainDETECT was correlated with Nottingham Health Profile (p=0.00). Physical mobility subgroup showed the strongest correlation with PainDETECT.

Conclusion: Our study demonstrated that neuropathic pain is strongly associated with quality of life in terms of physical mobility, energy, sleep, and social and emotional functions. The disease with highest prevalence of neuropathic pain was OA. A better understanding of neuropathic pain mechanisms in rheumatic diseases will help us find more effective treatment strategies.

Impact of pain on relationships

Pain Med. 2015 Apr 30. doi: 10.1111/pme.12766.

When Is Helping your Partner with Chronic Pain a Burden? The Relation Between Helping Motivation and Personal and Relational Functioning.

Kindt S¹, Vansteenkiste M, Loeys T, Cano A, Lauwerier E, Verhofstadt LL, Goubert L.

Author information

Abstract

OBJECTIVE:

Self-determination theory (SDT) may be a useful framework to understand why chronic pain affects partners. SDT postulates that individuals can engage in helping behaviors for different motives varying from more autonomous or volitional motives to more controlled or pressured motives. This article examines the relationship between partners' type of motivation to help (i.e., autonomous vs controlled) and their personal and relational functioning. Furthermore, mechanisms underlying this relationship (i.e., helping exhaustion and relationship-based need satisfaction) were examined.

METHODS:

In a sample of 48 couples, of which one partner had chronic pain (36 female patients), questionnaires measuring life satisfaction, positive and negative affect, anxiety and depressive feelings, relationship quality and relationship-based need satisfaction were filled out. Individuals with chronic pain (ICPs) also reported on pain intensity and disability whereas partners were requested to report on motives for helping and helping exhaustion.

RESULTS:

Data analysis with Structural Equation Modeling revealed that autonomous, relative to controlled, motives for helping among partners related positively to partners' well-being and relationship quality, and negatively to distress. The experience of helping exhaustion and relationship-based need satisfaction mediated these associations. Moreover, partners' autonomous helping motivation related positively to patient-reported relationship quality among ICPs high in pain intensity.

CONCLUSIONS:

Applying SDT in a context of pain provides new insights into why chronic pain affects partners and how partners impact patient outcome. Directions for future research are outlined.

Wiley Periodicals, Inc.

KEYWORDS:

Chronic Pain; Helping Behavior; Partner; Self-Determination Theory; Well-being

PMID:25929153

Alzheimer's patients and pain

Pain Med. 2015 Apr 30. doi: 10.1111/pme.12769.

Autonomic, Behavioral, and Subjective Pain Responses in Alzheimer's Disease.

Beach PA¹, Huck JT, Miranda MM, Bozoki AC.

Author information

Abstract

OBJECTIVE:

To compare autonomic, behavioral, and subjective pain responses of patients with Alzheimer's disease (AD) to those of healthy seniors (HS). As few studies have examined patients with severe Alzheimer's disease (sAD), we emphasized inclusion of these patients together with mild/moderate Alzheimer's disease (mAD) patients to characterize pain responses potentially affected by disease severity.

DESIGN:

A controlled cross-sectional study involving repeated measures behavioral pain testing.

SETTING:

An outpatient clinical setting and local nursing facilities.

SUBJECTS:

Community dwelling HS controls (N = 33) and individuals with chart-confirmed diagnoses of AD (N = 38, Diagnostic and Statistical Manual-IV criteria).

METHODS:

HS and AD groups were compared in their responses to repeated applications of five pressure intensities (1-5 kg) on the distal forearm. Autonomic responses (heart rate [HR]), pain behaviors (vocal, facial, and bodily as scored by the Pain Assessment in Advanced Dementia [PAINAD] scale), and subjective pain ratings (Faces Pain Scale-Revised) were measured.

RESULTS:

HR responses to pressure stimuli were differentially affected based on AD severity: sAD patients had generally decreased HR reactivity compared with other groups ($P < 0.01$). In contrast, pain behaviors were increased in AD regardless of severity ($P < 0.001$), compared with HS, for all but the lowest pressure intensity. Increased behaviors occurred in all measured domains of the PAINAD ($P < 0.005$). While sAD were unreliable subjective reporters, mAD patients (N = 17) rated low level pressures as more painful than HS ($P < 0.01$).

CONCLUSION:

These findings provide behavioral and subjective-report evidence of increased acute pain sensitivity in AD, which should be taken into consideration with respect to pain management across the spectrum of AD severity.

Wiley Periodicals, Inc. KEYWORDS: Acute Pain; Behavior; Dementia; Elderly; Alzheimer's Disease

PMID: 25929320

FIBROMYALGIA**Sleep time**

J Psychosom Res. 2015 Mar 22. pii: S0022-3999(15)00084-7. doi:
10.1016/j.jpsychores.2015.03.010

Effects of reduced time in bed on daytime sleepiness and recovery sleep in fibromyalgia and rheumatoid arthritis.

Roehrs T¹, Diederichs C², Gillis M², Burger AJ³, Stout RA³, Lumley MA³, Roth T⁴.
Author information

Abstract**OBJECTIVES:**

Fibromyalgia (FM) and rheumatoid arthritis (RA) are associated with sleep disturbance and daytime sleepiness. We sought to determine whether sleep homeostatic mechanisms are blunted in FM by assessing the effects of reduced time in bed (4h) on next day sleepiness and recovery sleep.

METHODS:

Fifty women (18 with FM, 16 with RA, and 16 HC) had a baseline 8h time-in-bed (TIB) and Multiple Sleep Latency Test (MSLT) the following day, and 3-7days later bedtime was reduced (4h) followed by MSLT and an 8h TIB recovery night.

RESULTS:

Following reduced bedtime the MSLT was reduced relative to baseline in the FM group by an amount (4.3+/-4.8min) similar to that of the RA (3.1+/-5.2min) and HC (4.8 +/-3.1min) groups. Relative to the baseline on the recovery night the FM group showed increased sleep efficiency (83.7+/-7.8 to 88.1+/-9.2%) relative to the RA (83.9+/-8.6 to 80.9+/-13.3%) and HC (90.1+/-5.0 to 87.4+/-7.6%) groups due primarily to reduced wake after sleep onset. The groups did not differ in recovery night sleep stages with the exception that the FM group showed REM rebound (21.6+/-6.5 to 25.2+/-6.0%), which was not found in the RA (20.4+/-7.4 to 17.8+/-6.5%) or HC (16.6+/-6.6 to 17.5+/-6.0%) groups.

CONCLUSIONS:

Compared to RA and HC, people with FM responded to reduced bedtime with a comparable increase in sleepiness and greater recovery sleep efficiency, suggesting that homeostatic sleep mechanisms are functional in FM. People with FM uniquely showed REM rebound on recovery from reduced bedtime suggesting underlying REM pressure.

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KEYWORDS:

Fibromyalgia; Hyperarousal; MSLT; Nocturnal polysomnography; Rheumatoid arthritis; Sleepiness

PMID: 25824597

Lateral prefrontal cortex

J Pain. 2015 Apr 30. pii: S1526-5900(15)00639-2. doi: 10.1016/j.jpain.2015.04.003.

The lateral prefrontal cortex mediates the hyperalgesic effects of negative cognitions in chronic pain patients.

Loggia ML¹, Bena C², Kim J³, Cahalan CM⁴, Martel MO⁴, Gollub RL⁵, Wasan AD⁶, Napadow V⁷, Edwards RR⁴.

Author information

Abstract

While high levels of negative affect and cognitions have been associated in chronic pain conditions with greater pain sensitivity, the neural mechanisms mediating the hyperalgesic effect of psychological factors in patients with pain disorders are largely unknown. In this cross-sectional study, we hypothesized that 1) catastrophizing modulates brain responses to pain anticipation, and that 2) anticipatory brain activity mediates the hyperalgesic effect of different levels of catastrophizing, in fibromyalgia (FM) patients. Using functional Magnetic Resonance Imaging, we scanned the brains of 31 FM patients exposed to visual cues anticipating the onset of moderately intense deep-tissue pain stimuli.

Our results indicated the existence of a negative association between catastrophizing and pain-anticipatory brain activity, including in the right lateral prefrontal cortex (IPFC). A bootstrapped mediation analysis revealed that pain-anticipatory activity in lateral prefrontal cortex (IPFC) mediates the association between catastrophizing and pain sensitivity.

These findings highlight the role of IPFC in the pathophysiology of FM related hyperalgesia, and suggest that deficits in the recruitment of pain-inhibitory brain circuitry during pain-anticipatory periods may play an important contributory role in the association between various degrees of widespread hyperalgesia in FM and levels of catastrophizing, a well validated measure of negative cognitions and psychological distress.

PERSPECTIVE:

This article highlights the presence of alterations in pain-anticipatory brain activity in FM. These findings provide the rationale for the development of psychological or neurofeedback-based techniques aimed at modifying patients' negative affect and cognitions towards pain.

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KEYWORDS: *catastrophizing; fibromyalgia; functional magnetic resonance imaging; negative affect; psychophysics* PMID:25937162

NUTRITION/VITAMINS

Vit. D and fetal health

Fertil Steril. 2015 May;103(5):1278-1288.e4. doi: 10.1016/j.fertnstert.2015.02.019. Epub 2015 Mar 23.

Effect of vitamin D supplementation during pregnancy on maternal and neonatal outcomes: a systematic review and meta-analysis of randomized controlled trials.

Pérez-López FR¹, Pasupuleti V², Mezones-Holguin E³, Benites-Zapata VA⁴, Thota P², Deshpande A⁵, Hernandez AV⁶.

Author information

Abstract

OBJECTIVE:

To assess the effects of vitamin D supplementation during pregnancy on obstetric outcomes and birth variables.

DESIGN: Systematic review and meta-analysis of randomized controlled trials (RCTs).

SETTING: Not applicable.

PATIENT(S): Pregnant women and neonates.

INTERVENTION(S):

PubMed and 5 other research databases were searched through March 2014 for RCTs evaluating vitamin D supplementation ± calcium/vitamins/ferrous sulfate vs. a control (placebo or active) during pregnancy.

MAIN OUTCOME MEASURE(S):

Measures were: circulating 25-hydroxyvitamin D [25(OH)D] levels, preeclampsia, gestational diabetes mellitus (GDM), small for gestational age (SGA), low birth weight, preterm birth, birth weight, birth length, cesarean section. Mantel-Haenszel fixed-effects models were used, owing to expected scarcity of outcomes. Effects were reported as relative risks and their 95% confidence intervals (CIs).

RESULT(S):

Thirteen RCTs (n = 2,299) were selected. Circulating 25(OH)D levels were significantly higher at term, compared with the control group (mean difference: 66.5 nmol/L, 95% CI 66.2-66.7). Birth weight and birth length were significantly greater for neonates in the vitamin D group; mean difference: 107.6 g (95% CI 59.9-155.3 g) and 0.3 cm (95% CI 0.10-0.41 cm), respectively. Incidence of preeclampsia, GDM, SGA, low birth weight, preterm birth, and cesarean section were not influenced by vitamin D supplementation. Across RCTs, the doses and types of vitamin D supplements, gestational age at first administration, and outcomes were heterogeneous.

CONCLUSION(S):

Vitamin D supplementation during pregnancy was associated with increased circulating 25(OH)D levels, birth weight, and birth length, and was not associated with other maternal and neonatal outcomes. Larger, better-designed RCTs evaluating clinically relevant outcomes are necessary to reach a definitive conclusion.

Copyright © 2015 American Society for Reproductive Medicine. Published by Elsevier Inc. All rights reserved. KEYWORDS: Vitamin D; maternal outcomes; meta-analysis; neonatal outcomes; pregnancy PMID: 25813278

Multivitamin use and reduced risk of stroke

Stroke. 2015 May;46(5):1167-72. doi: 10.1161/STROKEAHA.114.008270. Epub 2015 Mar 31.

Multivitamin use and risk of stroke mortality: the Japan collaborative cohort study.

Dong JY¹, Iso H¹, Kitamura A¹, Tamakoshi A¹; Japan Collaborative Cohort Study Group.

Author information

Abstract

BACKGROUND AND PURPOSE:

An effect of multivitamin supplement on stroke risk is uncertain. We aimed to examine the association between multivitamin use and risk of death from stroke and its subtypes.

METHODS:

A total of 72 180 Japanese men and women free from cardiovascular diseases and cancers at baseline in 1988 to 1990 were followed up until December 31, 2009. Lifestyles including multivitamin use were collected using self-administered questionnaires. Cox proportional hazards regression models were used to estimate hazard ratios (HRs) of total stroke and its subtypes in relation to multivitamin use.

RESULTS:

During a median follow-up of 19.1 years, we identified 2087 deaths from stroke, including 1148 ischemic strokes and 877 hemorrhagic strokes. After adjustment for potential confounders, multivitamin use was associated with lower but borderline significant risk of death from total stroke (HR, 0.87; 95% confidence interval, 0.76-1.01), primarily ischemic stroke (HR, 0.80; 95% confidence interval, 0.63-1.01), but not hemorrhagic stroke (HR, 0.96; 95% confidence interval, 0.78-1.18). In a subgroup analysis, there was a significant association between multivitamin use and lower risk of mortality from total stroke among people with fruit and vegetable intake <3 times/d (HR, 0.80; 95% confidence interval, 0.65-0.98). That association seemed to be more evident among regular users than casual users. Similar results were found for ischemic stroke.

CONCLUSIONS:

Multivitamin use, particularly frequent use, was associated with reduced risk of total and ischemic stroke mortality among Japanese people with lower intake of fruits and vegetables.

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KEYWORDS:

cohort studies; mortality; stroke

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PHARMACOLOGY

NSAIDs and pain

Eur Spine J. 2015 Apr 1.

Are non-steroidal anti-inflammatory drugs effective for the management of neck pain and associated disorders, whiplash-associated disorders, or non-specific low back pain? A systematic review of systematic reviews by the Ontario Protocol for Traffic Injury Management (OPTIMa) Collaboration.

Wong JJ¹, Côté P, Ameis A, Varatharajan S, Varatharajan T, Shearer HM, Brison RJ, Sutton D, Randhawa K, Yu H, Southerst D, Goldgrub R, Mior S, Stupar M, Carroll LJ, Taylor-Vaisey A.
Author information

Abstract

PURPOSE:

To evaluate the effectiveness of non-steroidal anti-inflammatory drugs (NSAIDs) for the management of neck pain and associated disorders (NAD), whiplash-associated disorders, and non-specific low back pain (LBP) with or without radiculopathy.

METHODS:

We systematically searched six databases from 2000 to 2014. Random pairs of independent reviewers critically appraised eligible systematic reviews using the Scottish Intercollegiate Guidelines Network criteria. We included systematic reviews with a low risk of bias in our best evidence synthesis.

RESULTS:

We screened 706 citations and 14 systematic reviews were eligible for critical appraisal. Eight systematic reviews had a low risk of bias. For recent-onset NAD, evidence suggests that intramuscular NSAIDs lead to similar outcomes as combined manipulation and soft tissue therapy. For NAD (duration not specified), oral NSAIDs may be more effective than placebo. For recent-onset LBP, evidence suggests that: (1) oral NSAIDs lead to similar outcomes to placebo or a muscle relaxant; and (2) oral NSAIDs with bed rest lead to similar outcomes as placebo with bed rest. For persistent LBP, evidence suggests that: (1) oral NSAIDs are more effective than placebo; and (2) oral NSAIDs may be more effective than acetaminophen. For recent-onset LBP with radiculopathy, there is inconsistent evidence on the effectiveness of oral NSAIDs versus placebo. Finally, different oral NSAIDs lead to similar outcomes for neck and LBP with or without radiculopathy.

CONCLUSIONS:

For NAD, oral NSAIDs may be more effective than placebo. Oral NSAIDs are more effective than placebo for persistent LBP, but not for recent-onset LBP. Different oral NSAIDs lead to similar outcomes for neck pain and LBP.

PMID: 25827308

Opioids use and pain

Pain Med. 2015 Apr 30. doi: 10.1111/pme.12770.

Attitudes and Beliefs of Working and Work-Disabled People with Chronic Pain Prescribed Long-Term Opioids.

Robinson JP¹, Dansie EJ, Wilson HD, Rapp S, Turk DC.

Author information

Abstract

OBJECTIVE:

This study was designed to gain insight into the apparent contradiction between the perspectives of researchers and policy makers, who have questioned the efficacy and safety of chronic opioid therapy for non-cancer pain patients, and the patients themselves, who often indicate that the therapy has value.

SUBJECTS:

A convenience sample of 54 patients on chronic opioid therapy was studied.

METHODS:

Participants completed a questionnaire specifically designed for the study, and also several standard instruments that addressed functional interference, emotional functioning, and possible misuse of opioids. Their treating physicians rated the participants on the severity of their disability and the success of their opioid therapy.

RESULTS:

Although participants reported significant ongoing pain, they gave positive global ratings to their opioid therapy, and reported little concern about addiction or side effects of opioids. They strongly endorsed the beliefs that opioids helped them control their pain and allowed them to participate in important activities such as work. They expressed the belief that their pain would be severe if they did not have access to opioids, and reported negative experiences with tapering or discontinuing opioids in the past. Work-disabled participants reported higher levels of affective distress, catastrophizing, and functional interference than working participants, and were judged by their physicians to be relatively less successful in managing their pain.

CONCLUSION:

The results of this study suggest several tentative hypotheses about why patients on chronic opioid therapy value opioids, and identified several areas for systematic investigation in the future.

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KEYWORDS:

Beliefs; Long-term opioid therapy; Misuse; Opioids

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