

ABSTRACTS

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2. LBP

LBP trajectories in the elderly

Age Ageing. 2016 Aug 11.

Defining trajectories in older adults with back pain presenting in general practice.

Enthoven WT¹, Koes BW¹, Bierma-Zeinstra SM², Bueving HJ¹, Bohnen AM¹, Peul WC³, van Tulder MW⁴, Berger MY⁵, Luijsterburg PA¹.

Abstract

BACKGROUND:

although back pain is a frequently recurring disorder, the course of back pain remains uncertain. Therefore, this study aimed to identify different trajectories in older adults with back pain who presented in general practice and to determine which baseline characteristics are associated with these trajectories.

METHODS:

the BACE study is a prospective cohort study including 675 patients (aged >55 years) with back pain who consulted a general practitioner; patients were followed for 3 years. Latent class growth analysis was used to identify different trajectories in back pain severity measured at eight different time points. A multinomial regression analysis was used to assess variables associated with membership of an identified trajectory.

RESULTS:

using the different indices of fit and the usefulness of the different trajectories in clinical practice, a 3-class cubic model was determined to be the best model. The three trajectories were defined as 'low pain trajectory', 'high pain trajectory' and 'intermediate pain trajectory'. Baseline variables associated with a higher chance of being in the intermediate or high trajectory were: female gender, higher body mass index, chronic back pain, more disability, lower scores on the SF-36 physical summary scale, and negative expectations of recovery.

CONCLUSIONS:

three different back pain trajectories were identified in older adults presenting with back pain in general practice. Various baseline characteristics were associated with a higher chance of being in the high or intermediate back pain trajectory. These characteristics might help identify patients at risk for a less favourable outcome.

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KEYWORDS:

back pain; general practice; latent class growth analysis; older adults; trajectories

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LBP subgroups

Physiotherapy. 2016 Jun;102(2):159-69. doi: 10.1016/j.physio.2015.04.005. Epub 2015 Jun 3.

Movement-based subgrouping in low back pain: synergy and divergence in approaches.

Karayannis NV¹, Jull GA², Hodges PW².

BACKGROUND:

Classification systems for low back pain (LBP) aim to guide treatment decisions. In physiotherapy, there are five classification schemes for LBP which consider responses to clinical movement examination. Little is known of the relationship between the schemes.

OBJECTIVES:

To investigate overlap between subgroups of patients with LBP when classified using different movement-based classification schemes, and to consider how participants classified according to one scheme would be classified by another.

DESIGN:

Cross-sectional cohort study.

SETTING:

University clinical laboratory.

PARTICIPANTS:

One hundred and two participants with LBP were recruited from university, hospital outpatient and private physiotherapy clinics, and community advertisements.

INTERVENTION:

Participants underwent a standardised examination including questions and movement tests to guide subgrouping.

MAIN OUTCOME MEASURES:

Participants were allocated to a LBP subgroup using each of the five classification schemes: Mechanical Diagnosis and Treatment (MDT), Movement System Impairment (MSI), O'Sullivan Classification (OSC), Pathoanatomic Based Classification (PBC) and Treatment Based Classification (TBC).

RESULTS:

There was concordance in allocation to subgroups that consider pain relief from direction-specific repeated spinal loading in the MDT, PBC and TBC schemes. There was consistency of subgrouping between the MSI and OSC schemes, which consider pain provocation to specific movement directions. Synergies between other subgroups were more variable. Participants from one subgroup could be subdivided using another scheme.

CONCLUSIONS:

There is overlap and discordance between LBP subgrouping schemes that consider movement. Where overlap is present, schemes recommend different treatment options. Where subgroups from one scheme can be subdivided using another scheme, there is potential to further guide treatment. An integrated assessment model may refine treatment targeting.

KEYWORDS: *lassification; Low back pain; Physiotherapy*

Comment in

- Movement-based subgrouping in low back pain: synergy and divergence in approaches. [Physiotherapy. 2016] PMID: 26126426

LBP and Injustice

J Pain. 2016 Aug 20. pii: S1526-5900(16)30183-3. doi: 10.1016/j.jpain.2016.08.001.

The impact of perceived injustice on appraisals of physical activity: An examination of the mediating role of attention bias to pain in a chronic low back pain sample.

Trost Z¹, Van Ryckeghem D², Scott W³, Guck A⁴, Vervoort T².

The current study examined the relationship between perceived injustice and attentional bias (AB) toward pain among individuals with chronic low back pain asked to perform and appraise the pain and difficulty of a standardized set of common physical activities.

A pictorial dot-probe task assessed AB toward pain stimuli (i.e., pain faces cueing pain), after which participants performed the physical tasks. Participants also rated face stimuli in terms of pain, sadness, and anger expression. As hypothesized, perceived injustice was positively associated with AB toward pain stimuli; additionally, perceived injustice and AB were both positively associated with appraisals of pain and difficulty. Counter to expectations, AB did not mediate the relationship between perceived injustice and task appraisals, suggesting that AB is insufficient to explain this relationship. Exploratory analyses indicated that participants with higher levels of perceived injustice rated stimulus faces as sadder and angrier; no such differences emerged for pain ratings.

This is the first study to examine the association between perceived injustice and AB toward pain, as well as perceived injustice and in-vivo appraisals of common physical activity. Results extend existing literature and suggest that attentional and potential interpretive bias should be considered in future research.

PERSPECTIVE:

This article identifies significant associations between perceived injustice, biased attention to pain, and appraisals of common physical activities among individuals with chronic low back pain. These findings suggest targets for intervention as well as directions for future research regarding individuals with high perceptions of injustice related to pain.

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KEYWORDS:

anger; chronic low back pain; pain; perceived injustice; selective attention

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PT and discogenic pain

Individualised functional restoration plus guideline-based advice versus advice alone for non-reducible discogenic low back pain: A randomised controlled trial

Physiotherapy, 08/22/2016

Chan AYP, et al.

The authors designed subgroup analysis within a multi-centre, parallel group randomised controlled trial to determine the capability of individualised functional restoration plus guideline-based advice compared to advice alone in people with non-reducible discogenic pain (NRDP).

The evidence indicate that for people with non-reducible discogenic pain not recovering after 6 weeks, an individualised physiotherapy functional restoration program should be considered.

5. SURGERY

LBP and risk of surgery

Am J Prev Med. 2016 Jul 28. pii: S0749-3797(16)30226-4. doi: 10.1016/j.amepre.2016.06.005.

Risk Factors for Low Back Pain and Spine Surgery: A Retrospective Cohort Study in Soldiers.

Kardouni JR¹, Shing TL², Rhon DF³.

INTRODUCTION:

Musculoskeletal low back pain (LBP) is commonly treated symptomatically, with practice guidelines advocating reserving surgery for cases that fail conservative care. This study examined medical comorbidities and demographic variables as risk factors for chronic/recurrent LBP, spinal surgery, and time to surgery.

METHODS:

A 2015 retrospective cohort study was conducted in U.S. Army soldiers (N=1,092,420) from 2002 to 2011. Soldiers with medical encounters for LBP were identified using ICD-9 codes. Surgical treatment for LBP was identified according to Current Procedural Terminology codes. Comorbid medical conditions (psychological disorders, sleep disorders, tobacco use, alcohol use, obesity) and demographic variables were examined as risk factors for chronic/recurrent LBP within 1 year of the incident encounter, surgery for LBP, and time to surgery.

RESULTS:

Of 383,586 patients with incident LBP, 104,169 (27%) were treated for chronic/recurrent LBP and 7,446 (1.9%) had surgery. Comorbid variables showed increased risk of chronic/recurrent LBP ranging from 26% to 52%. Tobacco use increased risk for surgery by 33% (risk ratio, 1.33; 95% CI=1.24, 1.44). Comorbid variables showed 10%-42% shorter time to surgery (psychological disorders, time ratio [TR]=0.90, 95% CI=0.83, 0.98; sleep disorders, TR=0.68, 95% CI=0.60, 0.78; obesity, TR=0.88, 95% CI=0.79, 0.98; tobacco use, TR=0.58, 95% CI=0.54, 0.63; alcohol use, TR=0.85, 95% CI=0.70, 1.05). Women showed 20% increased risk of chronic/recurrent LBP than men but 42% less risk of surgery.

CONCLUSIONS:

In the presence of comorbidities associated with mental health, sleep, obesity, tobacco use, and alcohol use, LBP shows increased risk of becoming chronic/recurrent and faster time to surgery.

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7. PELVIC ORGANS/WOMAN'S HEALTH

Nutrition and ADHD

Unhealthy diet during pregnancy could be linked to ADHD

University of Bristol Research News, 08/23/2016

New research led by scientists from King's College London and the University of Bristol has found that a high-fat, high-sugar diet during pregnancy may be linked to symptoms of ADHD in children who show conduct problems early in life.

Published in *The Journal of Child Psychology and Psychiatry*, this study is the first to indicate that epigenetic changes evident at birth may explain the link between unhealthy diet, conduct problems and ADHD. Early onset conduct problems (e.g. lying, fighting) and attention-deficit/hyperactivity disorder (ADHD) are the leading causes of child mental health referral in the UK. These two disorders tend to occur in tandem and can also be traced back to very similar prenatal experiences such as maternal distress or poor nutrition. In this new study, of 164 participants from the Bristol based Children of the 90s cohort, 83 children with early-onset conduct problems were compared with 81 children who had low levels of conduct problems. The researchers assessed how the mothers' nutrition affected epigenetic changes (or DNA methylation) to the activity of IGF2, a gene involved in fetal development and the brain development of areas implicated in ADHD – the cerebellum and hippocampus. Notably, DNA methylation of IGF2 had previously been found in children of mothers who were exposed to famine in the Netherlands during World War II. The researchers from King's and Bristol found that poor prenatal nutrition, comprising high fat and sugar diets of processed food and confectionary, was associated with higher IGF2 methylation in children with early onset conduct problems and those with low conduct problems. Higher IGF2 methylation was also associated with higher ADHD symptoms between the ages of 7 and 13, but only for children who showed an early onset of conduct problems.

Dr Edward Barker from King's College London said: "Our finding that poor prenatal nutrition was associated with higher IGF2 methylation highlights the critical importance of a healthy diet during pregnancy. "These results suggest that promoting a healthy prenatal diet may ultimately lower ADHD symptoms and conduct problems in children. This is encouraging given that nutritional and epigenetic risk factors can be altered." Dr Barker added: "We now need to examine more specific types of nutrition. For example, the types of fats such as omega 3 fatty acids, from fish, walnuts and chicken are extremely important for neural development. "We already know that nutritional supplements for children can lead to lower ADHD and conduct problems, so it will be important for future research to examine the role of epigenetic changes in this process."

PCB's and autism risk

Chemicals banned decades ago linked to increased autism risk today

Drexel University Health News, 08/25/2016

Chemicals used in certain pesticides and as insulating material banned in the 1970s may still be haunting us, according to new research that suggests links between higher levels of exposure during pregnancy and significantly increased odds of autism spectrum disorder in children.

According to the research, children born after being exposed to the highest levels of certain compounds of the chemicals, called organochlorine chemicals, during their mother's pregnancy were roughly 80 percent more likely to be diagnosed with autism when compared to individuals with the very lowest levels of these chemicals. That also includes those who were completely unexposed. "There's a fair amount of research examining exposure to these chemicals during pregnancy in association with other outcomes, like birth weight — but little research on autism, specifically," Lyall said. "To examine the role of environmental exposures in risk of autism, it is important that samples are collected during time frames with evidence for susceptibility for autism — termed 'critical windows' in neurodevelopment. Fetal development is one of those critical windows."

Their paper describing this study was published in the journal *Environmental Health Perspectives*. "Adverse effects are related to levels of exposure, not just presence or absence of detectable levels," she said. "In our Southern California study population, we found evidence for modestly increased risk for individuals in the highest 25th percentile of exposure to some of these chemicals." It was determined that two compounds in particular — PCB 138/158 and PCB 153 — stood out as being significantly linked with autism risk. Children with the highest in utero levels (exposure during their mother's pregnancy) of these two forms of PCBs were between 79 and 82 percent more likely to have an autism diagnosis than those found to be exposed to the lowest levels. High levels of two other compounds, PCB 170 and PCB 180, were also associated with children being approximately 50 percent more likely to be diagnosed — again, this is relative to children with the lowest prenatal exposure to these PCBs.

Exercise reduces risk of Cesarean section

Am J Obstet Gynecol. 2016 Aug 20. pii: S0002-9378(16)30579-8. doi: 10.1016/j.ajog.2016.08.014. [

Exercise during pregnancy and risk of Cesarean delivery in nulliparous women: A large population-based cohort study.

Owe KM¹, Nystad W², Stigum H², Vangen S³, Bø K⁴.

BACKGROUND:

Vaginal delivery for the first birth is of great importance for further obstetric performance for the individual woman. Given the rising cesarean delivery (CD) rates worldwide over the past decades, the search for modifiable factors associated with CD is needed. Exercise may be a modifiable factor associated with type of delivery, but the results of previous studies are not conclusive.

OBJECTIVE:

To investigate the association between exercise during pregnancy and CD, both acute and elective, in nulliparous women.

STUDY DESIGN:

A population-based cohort study involving 39,187 nulliparous women with a singleton pregnancy enrolled in the Norwegian Mother and Child Cohort Study (MoBa) between 2000 and 2009. All women answered two questionnaires in pregnancy weeks 17 and 30. Acute and elective CD were obtained from the Medical Birth Registry of Norway. Information on exercise frequency and type was assessed prospectively by questionnaires in pregnancy weeks 17 and 30. Generalized linear models estimated risk differences (RD) of acute and elective CD for different frequencies and types of exercise during pregnancy weeks 17 and 30. We used restricted cubic splines to examine dose-response associations of exercise frequency and acute CD. A test for non-linearity was also conducted.

RESULTS:

The total CD rate was 15.4% (n=6030), of which 77.8% (n=4689) was acute CD. Exercise during pregnancy was associated with a reduced risk of CD, particularly for acute CD. A nonlinear association was observed for exercise frequency in weeks 17 and 30 and risk of acute CD (test for nonlinearity, P =0.003 and P =0.027, respectively). The largest risk reduction was observed for acute CD among women exercising more than five times weekly during weeks 17 (-2.2 percent) and 30 (-3.6 percent) compared to non-exercisers (test for trend P<.001). Reporting high impact exercises in weeks 17 and 30 was associated with the greatest reduction in risk of acute CD (-3.0 and -3.4 percent, respectively).

CONCLUSION:

Compared to non-exercisers, regular exercise and high impact exercises during pregnancy are associated with reduced risk of having an acute CD in first-time mothers.

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KEYWORDS:

MoBa; mode of delivery; parity; physical activity; pregnancy; prospective study; risk difference

PMID: 27555317

Childhood abuse and longevity

JAMA Psychiatry. 2016 Aug 17. doi: 10.1001/jamapsychiatry.2016.1786.

Association of Reports of Childhood Abuse and All-Cause Mortality Rates in Women.

Chen E¹, Turiano NA², Mroczek DK³, Miller GE¹.

IMPORTANCE:

Research has linked childhood abuse to a variety of adult psychiatric problems, but little is known about associations of child abuse with adult mortality.

OBJECTIVE:

To test associations of retrospective reports of physical and emotional abuse in childhood with all-cause mortality rates in adulthood.

DESIGN, SETTING, AND PARTICIPANTS:

National sample of 6285 adults (aged 25-74 years at baseline) from the survey of Midlife Development in the United States. Baseline psychosocial data were collected in 1995 and 1996, with follow-up mortality data collected through October 2015.

MAIN OUTCOMES AND MEASURES:

Participants completed questionnaires at baseline about self-report of childhood emotional abuse, moderate physical abuse, and severe physical abuse. Mortality data during the next 20 years was tracked using the National Death Index.

RESULTS:

Of the 6285 participants included in the study sample, 2987 were men (48%) and 5581 were white (91%), with a mean (SD) age of 46.9 (12.95) years. Women who reported childhood emotional abuse (hazard ratio [HR], 1.22; 95% CI, 1.01-1.49; P = .04), moderate physical abuse (HR, 1.30; 95% CI, 1.05-1.60; P = .02), or severe physical abuse (HR, 1.58; 95% CI, 1.20-2.08; P = .001) were at increased risk for all-cause mortality during the follow-up period. Reports of more types of childhood abuse were also associated with a greater risk of all-cause mortality in women (all vs none HR, 1.68; 95% CI, 1.24-2.30; P = .001; some vs none HR, 1.24; 95% CI, 1.01-1.52; P = .04). These effects could not be accounted for by childhood socioeconomic status, personality traits, or adult depression. No associations were observed in men.

CONCLUSIONS AND RELEVANCE:

These results suggest that in addition to the established psychiatric consequences of abuse, women who report childhood abuse also remain vulnerable to premature mortality into adulthood. Thus, reported childhood abuse may have long-term ramifications for health and longevity in women.

PMID: 27540997

Vulvar pain

J Pain. 2016 Aug 17. pii: S1526-5900(16)30181-X. doi: 10.1016/j.jpain.2016.07.007.

A role for bradykinin signaling in chronic vulvar pain.

Falsetta ML¹, Foster DC², Woeller CF¹, Pollock SJ¹, Bonham AD², Haidaris CG³, Phipps RP⁴.

Chronic vulvar pain is alarmingly common in women of reproductive age and is often accompanied by psychological distress, sexual dysfunction, and a significant reduction in quality of life. Localized provoked vulvodynia (LPV) is associated with intense vulvar pain concentrated in the vulvar vestibule (area surrounding vaginal opening). To date, the origins of vulvodynia are poorly understood, and treatment for LPV manages pain symptoms, but does not resolve the root causes of disease. Until recently, no definitive disease mechanisms had been identified; our work indicates LPV has inflammatory origins, although additional studies are needed to understand LPV pain. Bradykinin signaling is one of the most potent inducers of inflammatory pain and is a candidate contributor to LPV. We report that bradykinin receptors are expressed at elevated levels in LPV patient versus healthy control vestibular fibroblasts, and patient vestibular fibroblasts produce elevated levels of proinflammatory mediators with bradykinin stimulation. Inhibiting expression of one or both bradykinin receptors significantly reduces proinflammatory mediator production. Finally, we determined that bradykinin activates NFκB signaling (a major inflammatory pathway), while inhibition of NFκB successfully ablates this response. These data suggest that therapeutic agents targeting bradykinin sensing and/or NFκB may represent new, more specific options for LPV therapy.

PERSPECTIVE:

There is an unmet need for the development of more effective vulvodynia therapies. As we explore the mechanisms by which human vulvar fibroblasts respond to proinflammatory/pro-pain stimuli, we move closer to understanding the origins of chronic vulvar pain and identifying new therapeutic targets, knowledge which could significantly improve patient care.

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8. VISCERA

Appendix surgery

Laparoscopic versus open appendectomy in adults and children: A meta-analysis of randomized controlled trials

United European Gastroenterology Journal, 08/26/2016

Dai L, et al.

This meta-analysis intended to compare the differences of laparoscopic appendectomy (LA) vs. open appendectomy (OA) in adults and children. In this randomized controlled trials, the authors recommending LA in adults as an effective and safe procedure for acute appendicitis.

Methods

- In this study, randomized controlled trials (RCTs) comparing LA and OA in adults and children between January 1992-March 2016 were included.
- The authors performed this meta-analysis to evaluate wound infection, intra-abdominal abscess, postoperative complications, reoperation rate, operation time, postoperative stay, and return to normal activity.

Results

- The authors included 33 studies including 3642 patients (1810 LA, 1832 OA).
- LA in adults was associated with lower incidence of wound infection, fewer postoperative complications, shorter postoperative stay, and earlier return to normal activity, but a longer operation time, as compared to OA.
- No difference was observed in levels of intra-abdominal abscess and reoperation between the groups.
- Subgroup analysis in children did not disclose significant differences between the two techniques in wound infection, postoperative complications, postoperative stay, and return to normal activity.

IBS and skin

J Cutan Pathol. 2016 Aug 6. doi: 10.1111/cup.12777. [

Cutaneous manifestations in inflammatory bowel disease: a single institutional study of non-neoplastic biopsies over 13 years.

Ko JS¹, Uberti G², Napkoski K³, Patil D⁴, Billings SD⁵.

BACKGROUND:

Skin is commonly affected by extraintestinal manifestations of inflammatory bowel disease (IBD), but a controlled, systematic histopathologic analysis of cutaneous lesions is lacking.

METHODS:

4147 classified IBD (Crohn disease (CD) or ulcerative colitis (UC); 2000-2013) resections were cross referenced with skin biopsies. Associated non-neoplastic skin biopsies were categorized by basic reaction pattern and neutrophilic versus granulomatous.

RESULTS:

Of 4147 patients, 133 had non-neoplastic skin biopsies (106/2772, 3.7% CD; 27/1375, 2% UC). Overall, miscellaneous > nodular and diffuse dermal > spongiotic dermatitides were most common (31.6%, 21.8%, and 15%, respectively). Spongiotic dermatitis, vasculitis, panniculitis and infections showed CD bias. Psoriasiform, perivascular, nodular/diffuse dermal and bullous categories, as well as neutrophilic processes, showed UC bias. Leukocytoclastic vasculitis, panniculitis, and pyoderma gangrenosum were exclusive to CD and psoriasis vulgaris to UC. One CD patient had inverse psoriasis.

CONCLUSIONS:

Our findings show the majority of dermatopathologic manifestations of IBD to have overlapping histology or pathophysiology to intestinal disease; with a wider spectrum of histologic patterns than typically discussed. Diseases "classically" associated with IBD are relatively rare biopsy specimens. Cutaneous manifestations of IBD are more common in CD than UC and should be considered when reviewing an unexplained skin lesion in an IBD patient.

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KEYWORDS:

IBD; Inflammatory bowel disease; cutaneous manifestation; extraintestinal manifestation; skin pathology

13. CRANIUM/TMJ

Condylar translation

J Oral Rehabil. 2016 Aug 21. doi: 10.1111/joor.12424.

Three-dimensional analysis of jaw kinematic alterations in patients with chronic TMD - disc displacement with reduction.

Mapelli A^{1,2}, Machado BC^{1,2}, Garcia DM^{1,2}, Rodrigues Da Silva MA^{2,3}, Sforza C⁴, de Felício CM^{1,2}.

The study investigated whether chronic TMD patients with disc displacement with reduction (DDR), performing non-assisted maximum jaw movements, presented any changes in their mandibular kinematics with respect to an age-matched control group. Moreover, it was examined whether jaw kinematics and a valid clinic measure of oro-facial functional status have significant associations. Maximum mouth opening, mandible protrusion and bilateral laterotrusions were performed by 20 patients (18 women, 2 men; age, 18-34 years) and 20 healthy controls (17 women, 3 men; age, 20-31 years). The three-dimensional coordinates of their mandibular interincisor and condylar reference points were recorded by means of an optoelectronic motion analyser and were used to quantitatively assess their range of motion, velocity, symmetry and synchrony. Three functional indices (opening-closing, mandibular rototranslation, laterotrusion - right and left - and protrusion) were devised to summarise subject's overall performance, and their correlation with the outcome of a clinical protocol, the oro-facial myofunctional evaluation with scores (OMES), was investigated. TMD patients were able to reach maximum excursions of jaw movements comparable to healthy subjects' performances. However, their opening and closing mandibular movements were characterised by remarkable asynchrony of condylar translation. They had also reduced jaw closing velocity and asymmetric laterotrusions. The functional indices proved to well summarise the global condition of jaw kinematics, highlighting the presence of alterations in TMD-DDR patients, and were linearly correlated with the oro-facial functional status. The jaw kinematic alterations seem to reflect both oro-facial motor behaviour adaptation and a DDR-related articular impairment.

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KEYWORDS:

biomechanics; condylar movements; disc displacement; kinematics; temporomandibular disorders; temporomandibular joint

PMID: [27545052](#)

TMJ central sensitization

Int J Oral Maxillofac Surg. 2016 Aug 20. pii: S0901-5027(16)30149-7. doi: 10.1016/j.ijom.2016.07.005.

Painful temporomandibular disorders and central sensitization: implications for management-a pilot study.

Campi LB¹, Jordani PC², Tenan HL², Camparis CM², Gonçalves DA².

The objective was to investigate the presence of cutaneous allodynia and hyperalgesia in the trigeminal and extra-trigeminal areas, as a surrogate for central sensitization (CS), in women with a painful temporomandibular disorder (TMD) and without other painful conditions. Painful TMDs, depression, and non-specific physical symptoms (NSPS) were classified according to the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD). The amount of pain in the trigeminal and extra-trigeminal areas was determined using a visual analogue scale (0-100mm) after the application of a vibrotactile stimulus and assessment of the pressure pain threshold (PPT). Statistical tests (Fisher's, χ^2 , and Mann-Whitney) were performed, with a significance level of 5%. The sample comprised 45 women (mean age 37.5 years; 16 with a painful TMD) who were free of any headache, fibromyalgia, or other painful condition. Painful TMD was associated with higher pain sensitivity and lower PPT values in the trigeminal ($P<0.01$) and extra-trigeminal regions ($P<0.01$). The presence of depression contributed significantly to increased pain sensitivity. The presence of hyperalgesia and allodynia in both the trigeminal and extra-trigeminal regions among women with a painful TMD indicated the presence of CS. Changes involving the central nervous system should be considered during the evaluation and management of patients with a painful TMD.

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KEYWORDS:

central nervous system sensitization; hyperalgesia; temporomandibular joint disorders

PMID: [27553896](#)

Fluoride safety

Fluoride consumption linked to diabetes using mathematical models

Case Western Reserve University School of Medicine News, 08/22/2016

Regression analyses suggest association between increases in consumption of fluoridated water and type 2 diabetes.

Water fluoridation prevents dental cavities, which are a costly public health concern. But despite the benefits supplemental water fluoridation remains a controversial subject. Some indicate it may cause long term health problems, but studies reporting side effects have been minimal or inconclusive. The long-term effects of ingested fluoride remain unclear. A recent study published in the Journal of Water and Health examined links between water fluoridation and diabetes. Incidence rates have nearly quadrupled in the past 32 years and show no signs of stopping. According to the study, fluoridation with sodium fluoride could be a contributing factor to diabetes rates in the United States, as the chemical is a known preservative of blood glucose. Fluegge reported that a one milligram increase in average county fluoride levels predicted a 0.17% increase in age-adjusted diabetes prevalence. Digging deeper revealed differences between the types of fluoride additives used by each region. The additives linked to diabetes in the analyses included sodium fluoride and sodium fluorosilicate. Fluorosilicic acid seemed to have an opposing effect and was associated with decreases in diabetes incidence and prevalence. Counties that relied on naturally occurring fluoride in their water and did not supplement with fluoride additives also had lower diabetes rates.

Sleep apnea and colon CA

Gastrointest Endosc. 2016 Aug 6. pii: S0016-5107(16)30446-1. doi: 10.1016/j.gie.2016.07.061.

Obstructive sleep apnea is associated with an increased risk of colorectal neoplasia.

Lee S¹, Kim BG¹, Kim JW¹, Lee KL¹, Koo DL², Nam HW², Im JP³, Kim JS³, Koh SJ⁴.

BACKGROUND AND AIMS:

A recent meta-analysis showed that obstructive sleep apnea (OSA) is associated with a higher prevalence of cancer and cancer-related mortality; however, little information is available on the association between OSA and colorectal neoplasia.

METHODS:

We identified consecutive patients who underwent overnight polysomnography (PSG) and subsequent colonoscopy. We compared the prevalence of colorectal neoplasia between patients with or without OSA according to the results of PSG. For each OSA case, 1 or 2 age-matched (\pm 5 years), sex-matched, body mass index (BMI), and smoking-matched controls who had undergone first-time screening colonoscopy were selected.

RESULTS:

Of the 163 patients, 111 patients were diagnosed with OSA and 52 patients showed normal range of apnea-hypopnea index. Of the 111 patients with OSA, 18 patients (16.2%) had advanced colorectal neoplasia, including 4 (3.6%) colorectal cancers. In the multivariate analyses, OSA was associated with an increased risk of advanced colorectal neoplasia after adjusting for factors including age and sex (mild, odds ratio [OR], 14.09; 95% confidence interval [CI], 1.55-127.83; $P = 0.019$; moderate or severe, OR, 14.12; 95% CI, 1.52-131.25; $P = 0.020$). Our case-control study revealed that the odds of detecting advanced colorectal neoplasia among patients with OSA were approximately 3.03 times greater than in the age-, sex-, BMI-, and smoking-matched controls (OR, 3.03; 95% CI, 1.44-6.34; $P = 0.002$).

CONCLUSION:

Physicians should be aware of the association between OSA and the development of colorectal neoplasia and explain the need for colonoscopy to patients with OSA.

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KEYWORDS:

Obstructive sleep apnea; advanced colorectal neoplasia; cancer; colonoscopy

Cold therapy

Br J Oral Maxillofac Surg. 2016 Aug 8. pii: S0266-4356(16)30174-7. doi: 10.1016/j.bjoms.2016.07.003.

Hilotherapy for the management of perioperative pain and swelling in facial surgery: a systematic review and meta-analysis.

Glass GE¹, Waterhouse N², Shakib K³.

Hilotherapy is the application of cold compression at a regulated temperature through a face mask.

Studies that have evaluated its efficacy have focused on postoperative oedema, pain, and the patient's comfort. However, there is no clear consensus in favour of its use, so we have made a systematic review and meta-analysis to evaluate relevant published reports. We searched PubMed, EMBASE, MEDLINE, the Cochrane Database of Systematic Reviews, and the Cochrane Central Register of Controlled Trials to identify studies. Sixty-one records were screened, six of which met the inclusion criteria and four of which were suitable for meta-analysis. All data suitable for meta-analysis were derived from studies of elective and traumatic facial skeletal surgery.

Hilotherapy was associated with significant reductions in facial pain on postoperative day 2 ($p < 0.00001$), and facial oedema on days 2 ($p = 0.0004$) and 3 ($p = 0.02$). Patients reported more comfort and satisfaction with hilotherapy than with cold compression ($p < 0.00001$). The effect of hilotherapy on ecchymosis and formation of haematomas remains uncertain. Well-designed, randomised, controlled trials of its use after aesthetic facial surgery are required.

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KEYWORDS:

Hilotherapy; Hilotherm®; cryotherapy; facial pain; facial surgery; oedema; orthognathic surgery; post operative cooling

14. HEADACHES

Controlling daily headaches

Headache. 2016 Aug 23. doi: 10.1111/head.12881.

Chronic Daily Headache: Ten Steps for Primary Care Providers to Regain Control.

Sheeler RD¹, Garza I², Vargas BB³, O'Neil AE¹.

BACKGROUND:

Chronic daily headache (CDH) affects 2% to 4% of the North American and European population. Various pathways lead to this condition, although chronification of migraine and the occurrence of central sensitization in tension headache are the 2 most common. Medication overuse headaches complicate a substantial portion of other primary headaches that have become chronic and often make their treatment more complex and less successful.

METHODS/RESULTS:

A 10-step process to help primary care providers evaluate and treat CDH patients begins with excluding secondary headache disorders, then moves on to classification of the primary underlying headache disorder. Next, the exacerbating factors, as well as relevant comorbid conditions, are identified. The patient's current acute therapy is examined, and attempts are made to identify and resolve medication overuse if present. Past preventive therapies are reviewed, allowing for thoughtful design of a headache action plan with preventive, acute, and lifestyle components. Patients are asked to keep a headache diary, used to initiate a cycle of continuous improvement in a patient's response to acute and preventive therapeutic approaches.

CONCLUSIONS:

A systematic approach and partnership with patients often make it possible to convert CDH to episodic headache that is responsive to both acute and preventive therapies.

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KEYWORDS:

central sensitization; chronic; headache; medication overuse

PMID: [27552176](https://pubmed.ncbi.nlm.nih.gov/27552176/)

15. VESTIBULAR

Inner Ear

Proc Natl Acad Sci U S A. 2016 Aug 22. pii: 201610529.

Using the shortwave infrared to image middle ear pathologies.

Carr JA¹, Valdez TA², Bruns OT¹, Bawendi MG³.

Visualizing structures deep inside opaque biological tissues is one of the central challenges in biomedical imaging.

Optical imaging with visible light provides high resolution and sensitivity; however, scattering and absorption of light by tissue limits the imaging depth to superficial features. Imaging with shortwave infrared light (SWIR, 1-2 μm) shares many advantages of visible imaging, but light scattering in tissue is reduced, providing sufficient optical penetration depth to noninvasively interrogate subsurface tissue features. However, the clinical potential of this approach has been largely unexplored because suitable detectors, until recently, have been either unavailable or cost prohibitive. Here, taking advantage of newly available detector technology, we demonstrate the potential of SWIR light to improve diagnostics through the development of a medical otoscope for determining middle ear pathologies. We show that SWIR otoscopy has the potential to provide valuable diagnostic information complementary to that provided by visible pneumotoscopy. We show that in healthy adult human ears, deeper tissue penetration of SWIR light allows better visualization of middle ear structures through the tympanic membrane, including the ossicular chain, promontory, round window niche, and chorda tympani. In addition, we investigate the potential for detection of middle ear fluid, which has significant implications for diagnosing otitis media, the overdiagnosis of which is a primary factor in increased antibiotic resistance.

Middle ear fluid shows strong light absorption between 1,400 and 1,550 nm, enabling straightforward fluid detection in a model using the SWIR otoscope. Moreover, our device is easily translatable to the clinic, as the ergonomics, visual output, and operation are similar to a conventional otoscope.

KEYWORDS:

endogenous contrast; optical imaging; otitis media; otoscopy; shortwave infrared

PMID: [27551085](https://pubmed.ncbi.nlm.nih.gov/27551085/)

20 A. ROTATOR CUFF

Rotator cuff surgery

J Shoulder Elbow Surg. 2016 Aug 2. pii: S1058-2746(16)30125-2. doi: 10.1016/j.jse.2016.04.036.

Complications associated with arthroscopic rotator cuff tear repair: definition of a core event set by Delphi consensus process.

Audigé L¹, Flury M², Müller AM³; ARCR CES Consensus Panel, Durchholz H².

BACKGROUND:

The literature does not consistently report on complications associated with arthroscopic rotator cuff repair (ARCR). Valid comparison of the occurrence of complications between ARCR interventions requires standardization. This project was implemented to define a core set of negative (untoward) events associated with ARCR along with their terms and definitions, which should be systematically documented and reported in routine care and clinical research.

MATERIALS AND METHODS:

A Delphi consensus process was applied. An international panel of experienced shoulder surgeons was nominated through professional societies and personal contacts. On the basis of a systematic review of terms and definitions, an organized list of relevant events associated with ARCR was developed and reviewed by panel members. Between each survey, all comments and suggestions were considered to revise the proposed core set, including local event groups along with definitions, specifications, and timing of occurrence. Consensus was defined as at least two-thirds agreement.

RESULTS:

Three successive online surveys were implemented involving 84 surgeons. Consensus with over 86% agreement was reached for a core list of local events including 3 intraoperative event groups (device, osteochondral, and soft tissue) and 9 postoperative event groups (device, osteochondral, pain, rotator cuff, surgical-site infection, peripheral neurologic, vascular, superficial soft tissue, and deep soft tissue). Experts agreed on a period for documentation of each event or group of events ranging from 3 to 24 months after ARCR.

CONCLUSION:

A structured core set of local events associated with ARCR has been developed by international consensus. Further evaluation and validation in the context of clinical studies are required.

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KEYWORDS:

Delphi process; Shoulder; complications; core event set; rotator cuff; standardization

PMID: [27496354](#)

23. SURGERY

More surgery and not as much conservative care

J Shoulder Elbow Surg. 2016 Aug 2. pii: S1058-2746(16)30142-2. doi: 10.1016/j.jse.2016.05.001.

Initial medical management of rotator cuff tears: a demographic analysis of surgical and nonsurgical treatment in the United States Medicare population.

Varkey DT¹, Patterson BM², Creighton RA², Spang JT², Kamath GV².

BACKGROUND:

Rotator cuff tears have a lifetime incidence between 25% and 40% in the United States, but optimum treatment strategies and protocol have not yet been widely accepted. This study evaluated the proportions of patients treated with nonoperative and operative modalities and how this proportion has changed during an 8-year period (2005-2012) among patients with Medicare.

METHODS:

Using the PearlDiver patient record database, we identified Medicare patients having been diagnosed with a rotator cuff tear. These patients were then stratified on the basis of treatment with physical therapy, subacromial/glenohumeral injection, or rotator cuff repair. We analyzed the data in regard to standard demographic information, comorbidities, and the Charlson Comorbidity Index.

RESULTS:

During the study period, 878,049 patients were identified and 397,116 patients had rotator cuff repair. The proportion of patients treated initially with physical therapy dropped from 30.0% in 2005 to 13.2% in 2012, and the subacromial/glenohumeral injection proportion decreased from 6.00% to 4.19% ($P < .001$). The proportion of patients who had rotator cuff repair increased from 33.8% to 40.4% from 2005 to 2012 ($P < .001$). Charlson Comorbidity Indexes were significantly lower in operative patients compared with each nonoperative treatment examined.

DISCUSSION:

This analysis demonstrates a significant decrease in the initial trial of nonoperative treatment and an increase in the rate of surgery. Patients undergoing rotator cuff repair had fewer comorbidities than those undergoing nonoperative treatments. It also demonstrates that patients who had a trial of injection had a higher incidence of eventual rotator cuff repair compared with the patients with an initial trial of physical therapy.

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KEYWORDS:

Charlson Comorbidity Index; PearlDiver; Rotator cuff; physical therapy; rotator cuff repair; rotator cuff tear; subacromial injection

PMID: [27496352](https://pubmed.ncbi.nlm.nih.gov/27496352/)

28. REPLACEMENTS**Central sensitization**

Eur J Pain. 2016 Aug 24. doi: 10.1002/ejp.929.

Central sensitization as a determinant of patients' benefit from total hip and knee replacement.

Wylde V¹, Sayers A¹, Odutola A², Gooberman-Hill R¹, Dieppe P³, Blom AW¹.

BACKGROUND:

Discrepancies exist between osteoarthritic joint changes and pain severity before and after total hip (THR) and knee (TKR) replacement. This study investigated whether the interaction between pre-operative widespread hyperalgesia and severity of radiographic osteoarthritis (OA) was associated with pain severity before and after joint replacement.

METHODS:

Data were analysed from 232 patients receiving THR and 241 receiving TKR. Pain was assessed pre-operatively and at 12 months post-operatively using the WOMAC Pain Scale. Widespread hyperalgesia was assessed through forearm pressure pain thresholds (PPTs). Radiographic OA was evaluated using the Kellgren and Lawrence scheme. Statistical analysis was conducted using multilevel models, and adjusted for confounding variables.

RESULTS:

Pre-operative: In knee patients, there was weak evidence that the effect of PPTs on pain severity was greater in patients with more severe OA (Grade 3 OA: $\beta = 0.96$ vs. Grade 4: $\beta = 4.03$), indicating that in these patients higher PPTs (less widespread hyperalgesia) was associated with less severe pain. In hip patients, the effect of PPTs on pain did not differ with radiographic OA (Grade 3 OA: $\beta = 3.95$ vs. Grade 4: $\beta = 3.67$). Post-operative: There was weak evidence that knee patients with less severe OA who had greater widespread hyperalgesia benefitted less from surgery (Grade 3 OA: $\beta = 2.28$; 95% CI -1.69 to 6.25). Conversely, there was weak evidence that hip patients with more severe OA who had greater widespread hyperalgesia benefitted more from surgery (Grade 4 OA: $\beta = -2.92$; 95% CI -6.58 to 0.74).

CONCLUSIONS:

Widespread sensitization may be a determinant of how much patients benefit from joint replacement, but the effect varies by joint and severity of structural joint changes.

SIGNIFICANCE:

Pre-operative widespread hyperalgesia and radiographic osteoarthritis (OA) severity may influence how much patients benefit from joint replacement. Patients undergoing knee replacement with less severe OA and greater widespread hyperalgesia benefitted less from surgery than patients with less hyperalgesia. Patients undergoing hip replacement with more severe OA and greater widespread hyperalgesia benefitted more than patients with less hyperalgesia.

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PMID: 27558412

Impact of previous lumbar fusion**Early Outcomes of Primary Total Hip Arthroplasty after Prior Lumbar Spinal Fusion**

Jeffrey J. Barry, MD David C. Sing, BS Thomas P. Vail, MD Erik N. Hansen, MD

DOI: <http://dx.doi.org/10.1016/j.arth.2016.07.019>**Background**

The coexistence of degenerative hip disease and spinal pathology is not uncommon with the number of surgical treatments performed for each condition increasing annually. The limited research available suggests spinal pathology portends less pain relief and worse outcomes after total hip arthroplasty (THA). We hypothesize that primary THA patients with preexisting lumbar spinal fusions (LSF) experience worse early postoperative outcomes.

Methods

Retrospective matched cohort study. Primary THA patients at one institution who had undergone prior LSF (spine-arthrodesis-hip-arthroplasty, SAHA), were identified and matched to controls of primary THA without LSF. Early outcomes (<90 days) were compared.

Results

From 2012-2014, 35 SAHA patients were compared to 70 matched controls. Patients were similar in age, sex, ASA score, BMI and Charlson-Comorbidity-Index. SAHA patients had higher rates of complications (31.4% vs 8.6%, $p=0.008$), reoperation (14.3% vs 2.9%, $p=0.040$), and general anesthesia (54.3% vs 5.7%, $p=0.0001$). Bivariate analysis demonstrated SAHA to predict reoperation (OR 5.67, $p=0.045$) and complications (OR 4.89, $p=0.005$). With the numbers available, dislocations (0% vs 2.8%), infections (0% vs 8.6%), readmissions, post-operative walking distance, and disposition only trended to favor controls ($p>0.05$). Comparing controls to SAHA patients with <3 or ≥ 3 levels fused, longer fusions had increased cumulative post-operative narcotic consumption (mean-morphine-equivalents 44.3 vs 46.9 vs 169.4, $p=0.001$).

Conclusion

Patients with preexisting LSF experience worse early outcomes after primary THA including higher rates of complications and reoperation. Lower rates of neuraxial anesthesia and increased narcotic usage represent potential contributors. The complex interplay between the lumbar spine and hip warrants attention and further investigation.

Keywords:

total hip arthroplasty, lumbar spinal fusion, hip-spine syndrome, arthroplasty outcomes, arthroplasty complications, postoperative narcotic usage

30 A. IMPINGEMENT**Gender differences**

Arthroscopy. 2016 Aug 8. pii: S0749-8063(16)30389-9. doi: 10.1016/j.arthro.2016.06.015

Adolescent Femoroacetabular Impingement: Gender Differences in Hip Morphology.

Hooper P¹, Oak S², Lynch TS³, Ibrahim G⁴, Goodwin R⁵, Rosneck J⁶.

PURPOSE:

To compare the hip morphology of adolescent male patients and female patients who underwent hip arthroscopy for femoroacetabular impingement (FAI) and determine if gender differences exist.

METHODS:

We retrospectively reviewed the records of 177 adolescents, aged 13 to 18 years, who were treated for FAI with hip arthroscopy. We examined and analyzed preoperative magnetic resonance imaging (MRI) scans and plain radiographs, measuring the lateral center-edge angle, Tönnis angle, and alpha angle. The intraclass correlation coefficient between readers was calculated. We created multiple linear regression models incorporating age, gender, and body mass index (BMI) with the radiographic measurements. Intraoperative findings using the Outerbridge grading system, as well as procedure performed, were documented. We compared these findings with our preoperative imaging measurements using the χ^2 test and the Wilcoxon rank sum test.

RESULTS:

The intraclass correlation coefficient showed moderate to strong agreement between the 3 image readers. The BMI- and age-adjusted mean alpha angle was higher in male patients than female patients on both plain radiographs (55.9° v 45.2°, $P < .0001$) and axial oblique MRI scans (54.1° v 42.5°, $P < .0001$). An alpha angle greater than 55° was found in 38.9% of male patients compared with only 1% of female patients ($P < .0001$). The lateral center-edge angle and Tönnis angle on MRI scans and plain radiographs displayed no statistically significant differences between genders after we controlled for BMI and age. Male patients were more likely to have chondral damage intraoperatively than female patients (56.3% v 32.5%, $P = .0041$).

CONCLUSIONS:

Distinct differences between genders were seen both on preoperative imaging and at the time of hip arthroscopy. We found that male patients with FAI displayed a larger mean alpha angle, and therefore a more severe cam-type deformity, than female patients. Our study also found that male patients were more likely to show evidence of chondral damage than female patients at the time of surgery.

LEVEL OF EVIDENCE:

Level IV.

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32 A. KNEE/ACL**Return to Rugby**

Arthroscopy. 2016 Aug 8. pii: S0749-8063(16)30362-0. doi: 10.1016/j.arthro.2016.06.009.

Return to Play of Rugby Players After Anterior Cruciate Ligament Reconstruction Using Hamstring Autograft: Return to Sports and Graft Failure According to Age.

Takazawa Y¹, Ikeda H², Saita Y², Kawasaki T², Ishijima M², Nagayama M², Kaneko H², Kaneko K².

PURPOSE:

To assess return to play and the frequencies of graft failure in rugby players after anterior cruciate ligament (ACL) reconstruction using a hamstring autograft augmented with an artificial ligament and to compare outcomes between rugby players aged <20 and ≥20 years over the long term.

METHODS:

A consecutive series of 146 rugby players who underwent ACL reconstruction with a hamstring autograft augmented with an artificial ligament were retrospectively reviewed. The study population was further divided into 2 groups aged <20 years and >20 years and compared.

RESULTS:

Twenty-five patients could not be followed up, and 121 (83%) were evaluated. Most patients (90%, <20 years; 92%, ≥20 years) returned to play after ACL reconstruction. At an average follow-up period of 56.5 months, 16% of the patients sustained an ACL graft rupture. Regarding age, <20 years (n = 58, 48%) and ≥20 years (n = 63, 52%), younger players had a significantly higher failure rate (23% v 5%, respectively; P = .006) and a shorter time to failure (22.8 ± 13.2 v 35.4 ± 15.4 months, respectively; P = .006) than older players.

CONCLUSIONS:

Rugby players were likely to return to play after ACL reconstruction with a hamstring autograft. However, there was a higher risk of graft failure in younger players than in older players. On the basis of this study, we conclude that the hamstring autograft may not be an appropriate graft source to use in a younger active population, including rugby players.

LEVEL OF EVIDENCE:

Level III, retrospective comparative study.

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37. OSTEOARTHRITIS/KNEE**Radiofrequency**

Int J Rheum Dis. 2016 Aug 12. doi: 10.1111/1756-185X.12925.

Which one is more effective for the clinical treatment of chronic pain in knee osteoarthritis: radiofrequency neurotomy of the genicular nerves or intra-articular injection?

Sarı S¹, Aydın ON², Turan Y³, Özlülerden P², Efe U¹, Kurt Ömürlü İ⁴.

OBJECTIVES:

To compare the efficacy of intra-articular injection and radiofrequency (RF) neurotomy of genicular nerves in patients with chronic knee osteoarthritis (OA) pain.

METHODS:

Seventy-three patients with knee OA were included in the study. Patients were randomly assigned to Group IA (intra-articular 2.5 mL of bupivacaine, 2.5 mg of morphine and 1 mL of betamethasone, 6 mL of fluid injection) or Group RF (RF neurotomy of the genicular nerves). The outcome measures included a pain scale (visual analog scale, VAS) and Western Ontario and McMaster Universities (WOMAC) Index of Osteoarthritis.

RESULTS:

No statistically significant difference was found between the two groups in baseline VAS-pain. In Group RF, a significant reduction was observed in VAS-pain at the first month ($P < 0.001$) and the third month ($P < 0.001$) in comparison to Group IA. Also in Group RF, a significant reduction was observed in WOMAC total scores in the first month ($P < 0.001$) in comparison to Group IA.

CONCLUSION:

This study is the first controlled study in the literature which compares RF genicular nerve to intra-articular injections. This study demonstrated that genicular nerve RF neurotomy is a safe and efficient treatment modality and provides functional improvement along with an analgesia in patients with chronic knee OA.

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KEYWORDS:

genicular nerve; intra-articular injections; knee osteoarthritis; radiofrequency

PMID: [27515095](https://pubmed.ncbi.nlm.nih.gov/27515095/)

48 B. TRIGGER POINTS NEEDLING/ACUPUNCTURE**DN for neck pain**

Pain. 2016 Sep;157(9):1905-17. doi: 10.1097/j.pain.0000000000000591.

Effectiveness of dry needling for chronic nonspecific neck pain: a randomized, single-blinded, clinical trial.

Cerezo-Télez E¹, Torres-Lacomba M, Fuentes-Gallardo I, Perez-Muñoz M, Mayoral-Del-Moral O, Lluch-Girbés E, Prieto-Valiente L, Falla D.

Chronic neck pain attributed to a myofascial pain syndrome is characterized by the presence of muscle contractures referred to as myofascial trigger points. In this randomized, parallel-group, blinded, controlled clinical trial, we examined the effectiveness of deep dry needling (DDN) of myofascial trigger points in people with chronic nonspecific neck pain.

The study was conducted at a public Primary Health Care Centre in Madrid, Spain, from January 2010 to December 2014. A total of 130 participants with nonspecific neck pain presenting with active myofascial trigger points in their cervical muscles were included. These participants were randomly allocated to receive: DDN plus stretching (n = 65) or stretching only (control group [n = 65]). Four sessions of treatment were applied over 2 weeks with a 6-month follow-up after treatment. Pain intensity, mechanical hyperalgesia, neck active range of motion, neck muscle strength, and perceived neck disability were measured at baseline, after 2 sessions of intervention, after the intervention period, and 15, 30, 90, and 180 days after the intervention. Significant and clinically relevant differences were found in favour of dry needling in all the outcomes (all $P < 0.001$) at both short and long follow-ups.

Deep dry needling and passive stretching is more effective than passive stretching alone in people with nonspecific neck pain. The results support the use of DDN in the management of myofascial pain syndrome in people with chronic nonspecific neck pain.

52. EXERCISE**Children's poor adherence to exercise**

Physiotherapy. 2016 Sep;102(3):229-35. doi: 10.1016/j.physio.2015.05.005. Epub 2015 Aug 11.

Encouraging healthy spine habits to prevent low back pain in children: an observational study of adherence to exercise.

Hill JJ¹, Keating JL².

BACKGROUND:

Low back pain (LBP) in adolescence is a predictor of adult LBP. Strategies to educate children and encourage healthy spine habits may prevent LBP. Poor adherence to health programmes can be a barrier to their success. This study addresses the potential for habitualisation of a short daily exercise programme that draws attention to factors thought to keep the spine healthy.

OBJECTIVES:

To describe adherence to a 9-month exercise programme, and analyse factors that may influence adherence.

DESIGN:

Observational cohort study.

SETTING:

Four primary schools in New Zealand.

OUTCOME MEASURES: Outcomes included self-evaluation of adherence to exercise, and self-reported incidence and severity of LBP.

PARTICIPANTS: Children (n=469) aged 8 to 11 years.

METHODS:

Participants were taught four simple spine movements for daily practice as part of a health programme that emphasised 'back awareness' and self-care of the spine. Strategies to encourage adherence were implemented. Data on self-reported adherence and episodes of LBP during the previous week were collected through an online survey completed on trial days 7, 21, 49, 105, 161 and 270 over a 9-month period.

RESULTS:

Daily exercise adherence was 34% on day 7 and dropped to 9% by day 270. Exercise adherence of at least once per week was 84% on day 7 and 47% by day 270. Frequency of exercise was not associated with episodes of LBP [odds ratio (OR) 1.16, 95% confidence interval (CI) 0.92 to 1.47, P=0.21], previous history of LBP (OR 0.97, 95% CI 0.77 to 1.23, P=0.77), lifetime first episode of LBP (defined as the first episode of LBP in the study period for participants with no previous history of LBP) (OR 0.39, 95% CI 0.15 to 1.34, P=0.14) or severity of LBP (OR 1.59, 95% CI 0.99 to 2.52, P=0.05).

CONCLUSION:

This study applied a comprehensive set of strategies considered to be important in encouraging adherence, but was not successful in sustaining the interest of more than half of the cohort. Innovative strategies are needed to develop new exercise habits in children.

CLINICAL TRIAL REGISTRATION NUMBER: ACTRN12611000551998.

KEYWORDS: Adherence; Children; Exercise; Habit; Low back pain; Prevention

PMID: 26404895

Exercise and pain memories**February 2015** Volume 20, Issue 1, Pages 216–220**Exercise therapy for chronic musculoskeletal pain: Innovation by altering pain memories**

Jo Nijs Enrique Lluch Girbés Mari Lundberg Anneleen Malfliet Michele Sterling

¹<http://www.paininmotion.be/>.DOI: <http://dx.doi.org/10.1016/j.math.2014.07.004>**Abstract**

Even though nociceptive pathology has often long subsided, the brain of patients with chronic musculoskeletal pain has typically acquired a protective (movement-related) pain memory. Exercise therapy for patients with chronic musculoskeletal pain is often hampered by such pain memories. Here the authors explain how musculoskeletal therapists can alter pain memories in patients with chronic musculoskeletal pain, by integrating pain neuroscience education with exercise interventions. The latter includes applying graded exposure in vivo principles during exercise therapy, for targeting the brain circuitries orchestrated by the amygdala (the memory of fear centre in the brain).

Before initiating exercise therapy, a preparatory phase of intensive pain neuroscience education is required. Next, exercise therapy can address movement-related pain memories by applying the ‘exposure without danger’ principle. By addressing patients' perceptions about exercises, therapists should try to decrease the anticipated danger (threat level) of the exercises by challenging the nature of, and reasoning behind their fears, assuring the safety of the exercises, and increasing confidence in a successful accomplishment of the exercise. This way, exercise therapy accounts for the current understanding of pain neuroscience, including the mechanisms of central sensitization.

Keywords:

Chronic pain, Exercise therapy, Sensitization, Neuroscience

LBP exercise

Physiotherapy. 2015 Jun 6. pii: S0031-9406(15)03786-4. doi: 10.1016/j.physio.2015.05.004.

Exercise prescription for patients with non-specific chronic low back pain: a qualitative exploration of decision making in physiotherapy practice.

Stenner R¹, Swinkels A², Mitchell T³, Palmer S⁴.

BACKGROUND:

Providing an effective exercise prescription process for patients with non-specific chronic low back pain (NSCLBP) is a challenging task. Emerging research has indicated that partnership in care and shared decision making are important for people with NSCLBP and calls for further investigation into the approaches used to prescribe exercise.

OBJECTIVE:

To explore how shared decision making and patient partnership are addressed by physiotherapists in the process of exercise prescription for patients with NSCLBP.

DESIGN:

A qualitative study using a philosophical hermeneutic approach.

METHODS:

Eight physiotherapists were each observed on three occasions undertaking their usual clinical activities (total n=24 observations). They conducted brief interviews after each observation and a later in depth semi-structured interview. Iterative hermeneutic strategies were used to interpret the texts and identify the characteristics and processes of exercise prescription for patients with NSCLBP.

FINDINGS:

The findings revealed how physiotherapy practice often resulted in unequal possibilities for patient participation which were in turn linked to the physiotherapists' assumptions about the patients, clinical orientation, cognitive and decision making processes. Three linked themes emerged: (1) I want them to exercise, (2) which exercise? - the tension between evidence and everyday practice and (3) compliance-orientated more than concordance based.

CONCLUSIONS:

This research, by focusing on a patient-centred approach, makes an important contribution to the body of evidence relating to the management of NSCLBP. It challenges physiotherapists to critically appraise their approaches to the prescription of exercise therapy in order to improve outcomes for these patients.

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KEYWORDS:

Back pain; Decision making; Exercise; Patient-centred care

PMID: [26117567](#)

59. PAIN

Neuropathic pain

The reciprocal associations between catastrophizing and pain outcomes in patients being treated for neuropathic pain: A cross-lagged panel analysis study

Pain, 08/24/2016

Racine M, et al.

This research focus on whether changes in catastrophizing early in treatment predicted subsequent changes in pain intensity and interference later in treatment, or alternately, whether early changes in pain intensity and interference predicted subsequent changes in catastrophizing. Evidence indicate that treatments targeting catastrophizing may effect other pain-related outcomes, and conversely that treatments aiming to reduce pain could potentially influence catastrophizing.

Adolescent chronic pain and injustice

Perceived injustice is associated with pain and functional outcomes in children and adolescents with chronic pain: a preliminary examination

Megan M. Miller Eric. L. Scott Zina Trost Adam T. Hirsh

DOI: <http://dx.doi.org/10.1016/j.jpain.2016.08.002>**Highlights**

- Higher levels of perceived injustice are associated with higher pain intensity.
- Higher levels of perceived injustice are associated with greater catastrophizing.
- Higher levels of perceived injustice are associated with poorer functioning.
- Perceived injustice is predictive of greater pain intensity and catastrophizing.
- Perceived injustice is predictive of poorer functioning.

Abstract

Chronic pain is prevalent in children/adolescents and contributes to high healthcare utilization. Research suggests injustice perceptions about pain are important in adult patients and a possible treatment focus. We conducted a preliminary evaluation of the psychometric properties of the Injustice Experiences Questionnaire (IEQ) and the relationship between injustice perceptions, pain, and functioning in chronic pain patients (N=139, mean age=15 years, 72% female) presenting to a pediatric pain clinic. Patients completed measures assessing pain intensity, injustice perceptions about pain, catastrophizing, overall functional disability, emotional functioning, social functioning, and school functioning. The IEQ demonstrated good reliability and validity. Higher levels of perceived injustice were associated with higher levels of pain intensity, catastrophizing, and functional disability, and with poorer emotional, social, and school functioning. Additionally, perceived injustice remained significantly associated with pain intensity, functional disability, emotional functioning, social functioning, and school functioning after accounting for relevant demographic and clinical factors. This is the first study to suggest that injustice perceptions are important in the experience of pediatric chronic pain patients. Future studies should more thoroughly examine the psychometric properties of the IEQ in children/adolescents and elucidate the causal nature of these relationships, which will inform treatment efforts to improve pediatric pain care.

Perspective

This initial investigation suggests that injustice perceptions about pain can be reliably and validly measured and are tied to important clinical outcomes in children/adolescents. Future studies that replicate and extend these preliminary results are necessary to determine the extent to which injustice perceptions are an important target for intervention.

62 A. NUTRITION/VITAMINS**Mediterranean diet and sex****Effects of Mediterranean diet on sexual function in people with newly-diagnosed type 2 diabetes: The MÈDITA trial**

Journal of Diabetes and its Complications, 08/18/2016

Maiorino MI, et al.

Researchers conducted a study to survey the long-term impact of Mediterranean diet on sexual function in people with newly-diagnosed type 2 diabetes. The results obtained from the study indicate that among persons with newly diagnosed type 2 diabetes, a Mediterranean diet lessened the deterioration of sexual function over time in both sexes.

Methods

- 215 men and women with newly diagnosed type 2 diabetes were assigned to Mediterranean diet (n = 108) or a low-fat diet (n = 107) in this randomized clinical trial, with a total follow-up of 8.1 years.
- Changes of erectile function (IIEF) in diabetic men and of female sexual function (FSFI) in diabetic women were the primary outcome measures.

Results

- Researchers found no difference in baseline sexual function in men (n = 54 vs 52) or women (n = 54 vs 55) randomized to Mediterranean diet or low-fat diet, respectively (P = 0.287, P = 0.815).
- It was also observed that over the entire follow-up, the changes of the primary outcomes were significantly lower in the Mediterranean diet group compared with the low-fat group: IIEF and FSFI demonstrated a significantly lesser decrease (1.22 and 1.18, respectively, P = 0.024 and 0.019) with the Mediterranean diet.
- As per findings, baseline C-reactive protein levels anticipated ED in men, yet not FSD in women.

Coffee and reduced risk of brain tumor

Int J Cancer. 2016 Aug 25. doi: 10.1002/ijc.30405.

Coffee and green tea consumption in relation to brain tumor risk in a Japanese population.

Ogawa T^{1,2}, Sawada N¹, Iwasaki M¹, Budhathoki S¹, Hidaka A¹, Yamaji T¹, Shimazu T¹, Sasazuki S¹, Narita Y², Tsugane S¹; Japan PUBLIC Health Center-Based Prospective Study Group..

Few prospective studies have investigated the etiology of brain tumor, especially among Asian populations. Both coffee and green tea are popular beverages, but their relation with brain tumor risk, particularly with glioma, has been inconsistent in epidemiological studies.

In this study, we evaluated the association between coffee and green tea intake and brain tumor risk in a Japanese population. We evaluated a cohort of 106,324 subjects (50,438 men and 55,886 women) in the Japan Public Health Center-based Prospective Study (JPHC Study). Subjects were followed from 1990 for Cohort I and 1993 for Cohort II until December 31, 2012. 157 (70 men and 87 women) newly diagnosed cases of brain tumor were identified during the study period. Hazard ratio (HR) and 95% confidence intervals (95% CIs) for the association between coffee or green tea consumption and brain tumor risk were assessed using a Cox proportional hazards regression model. We found a significant inverse association between coffee consumption and brain tumor risk in both total subjects (≥ 3 cups/day; HR=0.47, 95%CI=0.22-0.98) and in women (≥ 3 cups/day; HR=0.24, 95%CI=0.06-0.99), although the number of cases in the highest category was small. Furthermore, glioma risk tended to decrease with higher coffee consumption (≥ 3 cups/day; HR=0.54, 95%CI=0.16-1.80).

No association was seen between green tea and brain tumor risk. In conclusion, our study suggested that coffee consumption might reduce the risk of brain tumor, including that of glioma, in the Japanese population. This article is protected by copyright. All rights reserved.

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PMID: [27560973](https://pubmed.ncbi.nlm.nih.gov/27560973/)

Cheese consumption

Cheese consumption and risk of cardiovascular disease: A meta-analysis of prospective studies

European Journal of Nutrition, 08/26/2016

Chen GC, et al.

For this study, researchers directed a meta-analysis of prospective observational studies to assess the dangers of total CVD, coronary heart disease (CHD), and stroke connected with cheese consumption. This meta-analysis of imminent studies recommends a nonlinear inverse relationship between cheese intake and risk of CVD.

Methods

-
- Conceivably qualified studies were distinguished via looking PubMed and EMBASE databases and via carefully reviewing the bibliographies of retrieved publications and related reviews.
 - The summary relative risks (RRs) with 95 % confidence intervals (CIs) were figured utilizing the random-effects model.

Results

-
- Total 15 planned studies was included in the final investigations.
 - The majority of the studies avoided prevalent CVD at baseline (14/15) and had a duration >10 years (13/15).
 - The summary RR for high vs. low cheese consumption was 0.90 (95 % CI 0.82–0.99) for total CVD (7 studies, 8076 events), 0.86 (95 % CI 0.77–0.96) for CHD (8 studies, 7631 events), and 0.90 (95 % CI 0.84–0.97) for stroke (7 studies, 10,449 events), respectively.
 - The restricted cubic model showed proof of nonlinear connections between cheese intake and risks of total CVD ($P_{\text{nonlinearity}} < 0.001$) and stroke ($P_{\text{nonlinearity}} = 0.015$), with the biggest danger decreases seen at the intake of roughly 40 g/d.

63. PHARMACOLOGY**Opioid impact in patients with LBP**

Anaesthesia. 2016 Aug 22. doi: 10.1111/anae.13601.

Sleep disturbance in patients taking opioid medication for chronic back pain.

Robertson JA¹, Purple RJ², Cole P¹, Zaiwalla Z³, Wulff K², Pattinson KT¹.

Poor sleep is an increasingly recognised problem with chronic pain and further increases the effect on daily function.

To identify the relationship between chronic pain, opioid analgesia and sleep quality, this study investigated activity and sleep patterns in patients taking opioid and non-opioid analgesia for chronic back pain. Thirty-one participants (10 healthy controls, 21 patients with chronic pain: 6 on non-opioid medication; 15 on opioid medication) were assessed using actigraphy, polysomnography and questionnaires. Patients with chronic pain subjectively reported significant sleep and wake disturbances as shown by decreased overall sleep quality (Pittsburgh Sleep Quality Index, $p < 0.001$), increased symptoms of insomnia (Insomnia Severity Index, $p < 0.001$) and increased fatigue (Fatigue Severity Scale, $p = 0.002$). They also spent increased time in bed ($p = 0.016$), took longer to get to sleep ($p = 0.005$) and had high interindividual variability in other measures of activity but no overall irregular rest-activity pattern. Patients on high doses of opioids (> 100 mg morphine-equivalent/day) demonstrated distinctly abnormal brain activity during sleep suggesting that polysomnography is necessary to detect sleep disturbance in this population in the absence of irregular rest-activity behaviour. Night-time sleep disturbance is common in individuals suffering from chronic pain and may be further exacerbated by opioid treatment. Considerations must be made regarding the appropriate use of combined actigraphy and miniaturised polysomnography for future population-based studies.

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KEYWORDS:

chronic opioids; side effects; chronic pain; sleep disturbance

PMID: [27545291](#)

NSAID use and small intestine

Rheumatol Int. 2016 Aug 22.

Small intestinal injury in NSAID users suffering from rheumatoid arthritis or osteoarthritis.

Tachecí I¹, Bradna P², Douda T², Baštecká D², Kopáčová M², Rejchrt S², Lutonský M³, Soukup T², Bureš J².

The goal of this prospective study was to assess non-steroidal anti-inflammatory drug (NSAID)-induced enteropathy in patients with rheumatoid arthritis (RA) or osteoarthritis (OA) by means of non-invasive wireless capsule enteroscopy.

A total of 143 patients (74 with RA, 69 with OA) treated with NSAIDs (>1 month) and 42 healthy volunteers were included. All subjects underwent capsule endoscopy, laboratory tests and filled in questionnaires. The severity of small bowel injury was graded as: mild (red spots or sporadic erosions), moderate (10-20 erosions) or severe (>20 erosions or ulcers). Capsule endoscopy identified small bowel lesions in 44.8 % of patients (mild 36.4 %, moderate 3.5 % and severe in 4.9 %). Mild non-specific lesions were found in 11.9 % healthy volunteers. There was a significantly higher prevalence of enteropathy in RA (56.8 %) compared to OA (31.9 %, $p < 0.01$). A significant difference between NSAID users (RA and OA) with and without enteropathy was observed in erythrocytes ($p < 0.01$), the leucocyte count ($p < 0.05$), haemoglobin ($p < 0.05$), haematocrit ($p < 0.05$), serum albumin ($p < 0.01$) and erythrocyte sedimentation rate ($p < 0.05$).

No relationship was found between enteropathy and dyspepsia, gender or age. NSAID therapy is associated with a significant risk of small bowel injury. The risk is significantly higher in RA patients suggesting a possible influence of the underlying disease.

TRIAL REGISTRATION NUMBER:

DRKS00004940.

KEYWORDS:

Enteropathy; Non-steroidal anti-inflammatory drug; Osteoarthritis; Rheumatoid arthritis; Small bowel; Wireless capsule endoscopy