

ABSTRACTS

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4. INJECTIONS

Vertebral basilar nerve ablation

Spine J. 2016 Sep 1. pii: S1529-9430(16)30922-6. doi: 10.1016/j.spinee.2016.08.032.

Ablation of the basivertebral nerve for treatment of back pain: a clinical study.

Becker S1, Hadjipavlou A2, Heggeness MH3.

BACKGROUND CONTENT:

Lumbar axial back pain arising from degenerative disc disease continues to be a challenging clinical problem whether treated with non-surgical management, local injection, or motion segment stabilization and fusion.

PURPOSE:

To determine the efficacy of intraosseous basivertebral nerve ablation for the treatment of chronic lumbar back pain in a clinical setting.

STUDY DESIGN:

Patients meeting predefined inclusion/exclusion criteria were enrolled in a study using RF energy to ablate the basivertebral nerve within the vertebral bodies adjacent to the diagnosed level. Patients were evaluated at 6 weeks, and 3, 6, and 12 months post-operatively.

PATIENT SAMPLE:

Seventeen patients with chronic, greater than 6 months, low back pain unresponsive to at least 3 months of conservative care were enrolled. Sixteen patients were treated successfully following screening using MRI finding of Modic Type I or II changes and/or positive confirmatory discography to determine the affected levels. The treated population consisted of eight male and eight female patients; the mean age was 48 years (34-66 years).

OUTCOME MEASURES:

Self-reported outcome measures were collected prospectively at each follow-up interval. Measures included the Oswestry Disability Index (ODI), Visual Analogue Score (VAS), and Medical Outcomes Trust 36-Item Short Form Health Survey (SF-36).

METHODS:

This is an industry sponsored study to evaluate the effectiveness of intraosseous nerves in the treatment of chronic Back pain. Consented and enrolled patients underwent ablation of the basivertebral nerve using RF energy (INTRACEPT™ system, Relieva Medsystems, Redwood City, CA) guided in a transpedicular or extrapedicular approach. Preoperative planning determined targeted ablation zone and safety zones.

RESULTS:

Mean baseline ODI of the treated cohort was 52 ± 13 , decreasing to a mean of 23 ± 21 at three months follow-up ($p < 0.001$). The statistically significant improvement in ODI observed at 3 months was maintained through the 12 month follow-up. The mean baseline VAS decreased from 61 ± 22 to 45 ± 35 at three months follow-up ($p < 0.05$) and the mean baseline Physical Component Summary (PCS SF-36) increased from 34.5 ± 6.5 to 41.7 ± 12.4 at three months follow-up ($p = 0.03$).

CONCLUSION:

Ablation of the basivertebral nerve for the treatment of chronic lumbar back pain significantly improves patients' self-reported outcome early in the follow-up period; the improvement persisted throughout the one year study period.

Vertebral basilar nerve

Innervation patterns of PGP 9.5-positive nerve fibers within the human lumbar vertebraJeannie F Bailey,¹ Ellen Liebenberg,¹ Sean Degmetich,^{1,2} and Jeffrey C Lotz¹Abstract

Intervertebral disc injury or degeneration is a common cause of low back pain, and yet the specific source of pain remains ambiguous in many cases.

Previous research indicates that the central vertebral endplate is highly innervated and can elicit pain responses to pressure. In effort to trace the origin of nerves located at the endplate, we used protein gene product 9.5 (PGP 9.5) to stain neurofibers and then quantified the spatial pattern of nerve distribution within a human L4 lumbar vertebra. The majority of nerves were adjacent to blood vessel walls, and consequently the nerve distribution closely resembled previously established vascularity patterns. We observed that the majority of nerves enter the vertebral body posteriorly, via the basivertebral foramen, and cluster in the vertebral center. These nerves follow the course of the nutrient artery, which enters the vertebral body through the basivertebral foramen, then branches toward the superior and inferior endplates.

Our observations support the notion that nerves found at the central endplate could originate from sinuvertebral nerves accompanying the nutrient artery into the vertebral body. We also stained neighboring histological sections with calcitonin gene-related protein and noted significant co-localization with PGP 9.5, substantiating a nociceptive role for the nerves constituting our distribution pattern.

Keywords: basivertebral nerve, endplate, innervation, low back pain, vertebral body

5. SURGERY

Malnutrition problem

Spine (Phila Pa 1976). 2016 Sep 1;41(17):1400-4. doi: 10.1097/BRS.0000000000001551.

Preoperative Nutritional Status is an Independent Predictor of 30-day Hospital Readmission After Elective Spine Surgery.

Adogwa O¹, Elsamadicy AA, Mehta AI, Cheng J, Bagley CA, Karikari IO.

STUDY DESIGN:

A retrospective cohort review.

OBJECTIVE:

The aim of this study is to investigate whether preoperative malnutrition is an independent risk factor for unplanned 30-day readmission after elective spine surgery.

SUMMARY OF BACKGROUND DATA:

Thirty-day hospital readmission rate is being used as a proxy for quality of care. Accordingly, hospitals and health systems are investing considerable resources into the identification of patients at risk of hospital readmission and designing interventions to reduce the rate of hospital readmissions.

METHODS:

The medical records of 145 patients undergoing elective spine surgery at a major academic medical center were reviewed. Preoperative serum albumin level was assessed on all patients and used to quantify nutritional status. Albumin less than 3.5g/dL was recognized malnourished. Patient demographics, comorbidities, and postoperative complication rates were collected. The association between preoperative serum albumin level and 30-day readmission rate was assessed via multivariate logistic regression analysis.

RESULTS:

Baseline characteristics were similar between both groups. Low albumin was found in 28% of patients in this study. Malnourished patients were more likely to experience a postoperative complication and a prolonged duration of hospital stay (3.80 vs. 8.67 days), $P=0.03$. Overall, 14.48% of patients were readmitted within 30 days of discharge, with malnourished patients experiencing a three-fold increase in 30-day readmission rates (malnourished: 27.50% vs. nourished: 9.52%, $P=0.02$). Binary logistic regression with and without propensity score adjustment for risk factors demonstrated that preoperative malnutrition (low serum albumin level) is an independent predictor of 30-day readmission after elective spine surgery ($P=0.01$).

CONCLUSION:

Pre-operative malnutrition is an independent risk factor for readmission within 30 days of discharge after elective spine surgery. Laboratory markers of nutrition can identify patients at risk of unplanned hospital readmission. This risk determination identifies a potentially modifiable risk factor for early readmission.

LEVEL OF EVIDENCE: 3. PMID: 26953667

7. PELVIC ORGANS/WOMAN'S HEALTH

Fish intake improves allergic reactions

Pediatr Allergy Immunol. 2016 Sep 3. doi: 10.1111/pai.12648.

Fish intake during pregnancy or infancy and allergic outcomes in children: a systematic review and meta-analysis.

Zhang GQ¹, Liu B¹, Li J¹, Luo CQ¹, Zhang Q¹, Chen JL², Sinha A³, Li ZY⁴.

BACKGROUND:

It has been suggested that n-3 long-chain polyunsaturated fatty acids (n-3 LC-PUFAs) have anti-inflammatory properties and may reduce the risk of allergic disease. Fish is a great source of n-3 LC-PUFAs. However, the effect of fish on allergic disease remains controversial.

METHODS:

PubMed, EMBASE, and Cochrane Central Register of Controlled Trials were searched for randomized controlled trials (RCTs) and prospective cohort studies regarding the effect of fish intake during pregnancy or infancy on allergic outcomes in children. The outcomes of interest were atopy, eczema, allergic rhinitis, wheeze, asthma, and food allergy.

RESULTS:

One RCT and seventeen publications from thirteen prospective cohort studies were included for maternal fish intake during pregnancy, and eight publications from five prospective cohort studies for fish intake in infancy. Pooled analysis suggested that maternal fish intake during pregnancy was not associated with lower risk of any allergic outcome, both in RCT and observational studies. Consumption of fish during the first year of life reduced the risk of eczema (RR 0.61; 95% CI 0.47, 0.80; P = 0.0003; I² = 68%) and allergic rhinitis (RR 0.54; 95% CI 0.36, 0.81; P = 0.003; I² = 74%).

CONCLUSIONS:

Current evidence indicates that fish intake in infancy could reduce the risk of eczema and allergic rhinitis in children, whereas maternal fish intake during pregnancy does not affect any atopic outcome. The intake of fish per se in infancy, not specially n-3 LC-PUFAs, may have an allergy protective effect. High-quality and adequately powered RCTs are warranted to confirm this. This article is protected by copyright. All rights reserved.

Caffeine and abortion

Eur J Nutr. 2016 Aug 29.

Pre-pregnancy caffeine and caffeinated beverage intake and risk of spontaneous abortion.

Gaskins AJ^{1,2}, Rich-Edwards JW^{3,4,5}, Williams PL^{3,6}, Toth TL⁷, Missmer SA^{3,4,8,9}, Chavarro JE^{10,3,4}.

PURPOSE:

To investigate the relation between pre-pregnancy caffeine and caffeinated beverage intake and risk of spontaneous abortion (SAB).

METHODS:

Our prospective cohort study included 15,590 pregnancies from 11,072 women with no history of SAB in the Nurses' Health Study II (1991-2009). Beverage intake was assessed every 4 years using a validated questionnaire. Pregnancies were self-reported with case pregnancies lost spontaneously at <20 weeks gestation. Multivariable log-binomial regression models with generalized estimating equations were used to estimate the relative risks (RRs) and 95 % confidence intervals (CIs).

RESULTS:

There was a positive linear trend across categories of pre-pregnancy caffeine intake and risk of SAB such that women consuming >400 mg/day had 1.11 (95 % CI 0.98, 1.25) times the risk of SAB compared to women consuming <50 mg/day (p trend = 0.05). Total coffee intake had a positive, linear association with SAB. Compared to women with no pre-pregnancy coffee intake, women consuming ≥ 4 servings/day had a 20 % (6, 36 %) increased risk of SAB (p trend = 0.01). There was no difference in the association between caffeinated and decaffeinated coffee and risk of SAB. Pre-pregnancy intake of caffeinated tea, caffeinated soda, and decaffeinated soda had no association with SAB.

CONCLUSIONS:

Pre-pregnancy coffee consumption at levels ≥ 4 servings/day is associated with increased risk of SAB, particularly at weeks 8-19

Anxiety and hot flashes

Menopause. 2016 Sep;23(9):942-9. doi: 10.1097/GME.0000000000000662.

Anxiety as a risk factor for menopausal hot flashes: evidence from the Penn Ovarian Aging cohort.

Freeman EW¹, Sammel MD.

OBJECTIVE:

The aim of this study was to identify temporal associations of anxiety dimensions with menopausal hot flashes in women progressing through the menopausal transition. We hypothesized that associations of both somatic and affective dimensions of anxiety with hot flashes increased in the menopausal transition, and that somatic anxiety was an independent risk factor for menopausal hot flashes.

METHODS:

Hot flashes, anxiety symptoms, hormone levels, and other psychosocial variables were assessed annually for 14 years of follow-up. The 233 women were premenopausal at baseline and continued through 1 year or more after the final menstrual period. Anxiety dimensions were assessed with the Zung Anxiety Scale, a validated measure of affective anxiety and somatic anxiety. Summed item scores were divided by the number of items rated, so that ranges of the two dimensions were comparable.

RESULTS:

Seventy-two percent of the sample reported moderate/severe hot flashes during the 14-year interval. There was no significant interaction between anxiety dimensions and menopausal stages. When adjusted for menopausal stage, the magnitude of association between somatic anxiety and hot flashes, however, dramatically increased (odds ratio [OR], 3.03; 95% CI, 2.12-4.32; $P < 0.001$), whereas the association between affective anxiety and hot flashes increased to a lesser extent (OR, 1.27; 95% CI, 1.03-1.57; $P = 0.024$). Women with high levels of somatic anxiety (top third of the sample) had the greatest risk of hot flashes ($P < 0.001$). When the anxiety dimensions were considered in combination, the additive effect of high affective anxiety symptoms was minimal, with no significant difference between the group with high affective/low somatic symptoms and the low symptom group in incident hot flashes at each menopausal stage ($P = 0.54$). In multivariable analysis, somatic anxiety increased the risk of hot flashes more than three times (OR, 3.13; 95% CI, 2.16-4.53; $P < 0.001$), but affective anxiety was not significantly associated with hot flashes after adjustment for other study variables (OR, 1.19; 95% CI, 0.96-1.48; $P = 0.117$). Time-lagged somatic anxiety scores significantly predicted hot flashes, with a 71% increase in risk (OR, 1.71; 95% CI, 1.21-2.41; $P = 0.002$). Time-lagged affective anxiety scores did not predict hot flashes (OR, 1.06; 95% CI, 0.87-1.31; $P = 0.58$).

CONCLUSIONS:

This study showed a strong predictive association of somatic anxiety with the risk of menopausal hot flashes. The temporal associations suggest that somatic anxiety is not simply a redundant measure of hot flashes but predicts the risk of menopausal hot flashes and may be a potential target in clinical management of perimenopausal women

Cannabinoid and spermatozoa

Cannabinoid receptor activates spermatozoa

Ruhr-Universitaet-Bochum News, 09/09/2016

During fertilization, a sperm must first fuse with the plasma membrane and then penetrate the female egg in order to penetrate it.

To this end, sperm cells go through a process known as the acrosome reaction which is the reaction that occurs in the acrosome of the sperm as it approaches the egg. In the lab, this so-called acrosome reaction is considered a test for analysing the ability of semen to accomplish fertilisation. A receptor for an endogenous cannabinoid plays a crucial role in this process. A team of biologists from Bochum and Bonn, headed by Prof Dr Dr Dr Hanns Hatt, have been the first one to provide a proof of the so-called G protein-coupled receptors 18 (GPR18) in spermatozoa, following a comprehensive analysis. They published their findings in the journal *Scientific Reports*. Specialised in olfaction research, the team from Bochum had detected as many as 60 olfactory receptors in spermatozoa early this year, and has activated and localised ten of them. “In the current study, we have focused on the remaining G protein-coupled receptors, which, rather than being olfactory receptors, bind other substances,” explains Hanns Hatt. Analysing samples by numerous donors, the researchers investigated which genes are expressed in spermatozoa; their conclusion was that the number of receptors totalled 223. The three most common ones include receptor GPR18, a cannabinoid receptor that has recently been described for the first time. “The receptor reacts to the herbal cannabis agent THC as well as to the endogenous fatty acid NAGly, which is associated with the cannabinoid system,” says Hatt. “It is much more sensitive to NAGly than the classical, long-known cannabinoid receptors.” Activating the receptor, which is situated in the centre of spermatozoa, can trigger the so-called acrosome reaction. In the course of this process, the spermatozoon’s surface is altered as it approaches the egg. Without this reaction, the spermatozoon cannot penetrate the egg cell. Scientists know that endocannabinoids occur in both the male and the female genital tract.

Studies suggest that in women their concentration increases during the fertile days. “The endocannabinoid activates the spermatozoa for fertilization” concludes Hanns Hatt. The GPR18 receptor also occurs in other tissues in the human body, for example in the brain and in the heart. However, its function was not known until now.

Breast-feeding and cavities

Caries Res. 2016 Sep 9;50(5):498-507.

Breastfeeding Duration and Childhood Caries: A Cohort Study.

Nirunsittirat A¹, Pitiphat W, McKinney CM, DeRouen TA, Chansamak N, Angwaravong O, Patcharanuchat P, Pimpak T.

This cohort study was conducted in Khon Kaen, Thailand, to test the hypothesis that a longer breastfeeding duration increases the risk for dental caries in primary teeth.

We collected information on infant feeding practices and potential confounders using a structured questionnaire to interview mothers or caregivers during the second trimester of pregnancy and after birth at 21 days and at 3, 12, 18, 24, and 36 months. Regardless of other liquids and foods, full breastfeeding was defined as feeding breast milk but not formula, while any breastfeeding was feeding breast milk with or without formula. Two calibrated dentists measured dental caries when the children were 3-4 years of age using the decayed, missing, and filled surfaces (dmfs) index following the World Health Organization criteria. Negative binomial regression with a generalized linear model was used to estimate relative risks (RRs) and 95% confidence intervals (CIs) using dmfs as an outcome. Log-binomial regression was performed to model the caries prevalence. Of 556 children, 88.1% had dental caries with a mean dmfs of 14.2.

Full breastfeeding for 6-11 months was significantly associated with a lower dmfs (adjusted RR 0.77, 95% CI 0.63, 0.93) and a lower caries prevalence (adjusted RR 0.45, 95% CI 0.22, 0.90). The frequency of sleeping while breast- or bottle-feeding increased the caries risk in a dose-response manner. There was no association between duration of any breastfeeding and dental caries. In conclusion, full breastfeeding for 6-11 months may protect against dental caries in primary teeth. Prolonged breastfeeding was not associated with dental caries in this population.

Vestibulectomy

J Minim Invasive Gynecol. 2016 Aug 24. pii: S1553-4650(16)31013-5. doi: 10.1016/j.jmig.2016.08.822.

The Effect of Vestibulectomy for Intractable Vulvodynia.

Kliethermes CJ¹, Shah M², Hoffstetter S², Gavard JA², Steele A².

STUDY OBJECTIVE:

To assess the effectiveness of vestibulectomy in treating vulvodynia for patients with inadequate response to vulvar care guidelines and medical management.

DESIGN:

Retrospective case series DESIGN CLASSIFICATION: Retrospective case series (Canadian Task Force Classification II-2) PATIENTS: All patients who underwent a vestibulectomy from 2004-2013 for vulvodynia.

INTERVENTIONS:

All patients in this study underwent a vestibulectomy.

MEASUREMENTS AND MAIN RESULTS:

In this study, we analyzed 31 patients' overall reported pain scores and Q-tip test scores prior to and following vestibulectomy. The efficacy of vestibulectomy on reduction of pain was then analyzed after surgical management. There was no significant difference in pain scores from initial visit compared to the last visit prior to vestibulectomy after vulvar care guidelines and medical management were initiated (p values = 0.48-0.94). However, mean subjective pain scores before and after vestibulectomy decreased by 67% (p<0.001). Q-tip testing showed reductions of pain by 63% (p<0.001) and 73% (p<0.001) at the right and left Bartholin gland areas, respectively. There was approximately a 60% decrease of pain scored around the bilateral peri-urethral areas (p<.05).

CONCLUSIONS:

Vestibulectomy is an effective treatment for vulvodynia. For those with intractable pain, vestibulectomy is an appropriate next step after unsuccessful medical treatment. The surgery leads to a significant decrease in patients' pain scores, nearly eliminating it in most cases.

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KEYWORDS:

Pelvic Pain; Vaginal Surgery; Vestibulectomy; Vulvodynia

PMID: [27568225](#)

IBS and pregnancy problems**Use of azathioprine and corticosteroids during pregnancy and birth outcome in women diagnosed with inflammatory bowel disease**

Birth Defects Research Part A: Clinical and Molecular Teratology, 06/20/2016 Veie Plauborg A, et al.

The aim of this study was to describe prescription patterns for azathioprine and corticosteroids for pregnant women with inflammatory bowel diseases (IBD) before, amid, and after pregnancy and to portray pregnancy outcomes. Utilization of azathioprine and corticosteroids was frequently diminished or ceased before or amid early pregnancy took after by an expanded utilization of corticosteroids later in pregnancy.

Women diagnosed with IBD and with prescriptions for azathioprine and/or corticosteroids, have an increased risk of LBW, pre-term birth, and SGA.

Methods

- A cohort made out of all singleton pregnancies in Danish registries from 1996 to 2009 was separated by maternal IBD status: Crohn's disease (CD, n = 827), ulcerative colitis (UC, N = 1361), or no IBD diagnosis (background population, n = 814,231).
- The number of women with a prescription for azathioprine, local and systemic steroids inside a 3-month time span was figured for each of the pregnancy trimesters and the year before and after pregnancy.
- Results of interest were stillbirth, perinatal mortality, low birth weight (LBW), preterm birth, and small for gestational age (SGA).

Results

- Number of prescriptions for azathioprine diminished just before and amid pregnancy and expanded after birth.
- Number of prescriptions for local and systemic corticosteroids diminished roughly 30% contrasted and before pregnancy and expanded in the second trimester.
- There was an expanded risk among mothers with IBD of LBW (adjusted odds ratio [adjOR]: CD: 2.25 [95% confidence interval {CI}, 1.74–2.91], UC: 1.81 [95% CI, 1.42–2.30]), preterm birth (adjOR: CD: 2.54 [95% CI, 2.04–3.15], UC: 1.86 [95% CI, 1.52–2.27]), and SGA (adjOR: CD: 1.99 [95% CI, 1.26–3.15], UC: 1.80 [95% CI, 1.18–2.75]).

8. VISCERA**Cardiac blood pressure****Cardiovascular event rates and mortality according to achieved systolic and diastolic blood pressure in patients with stable coronary artery disease: an international cohort study**

Emmanuelle Vidal-Petiot, MD Prof Ian Ford, PhD\Nicola Greenlaw, MScProf Roberto Ferrari, MD Prof Kim M Fox, MD rof Jean-Claude Tardif, MD Prof Michal Tendera, MD , Prof Luigi Tavazzi, MD Prof Deepak L Bhatt, MD Prof Philippe Gabriel Steg, MD
Published Online: 30 August 2016 LaNCET

DOI: [http://dx.doi.org/10.1016/S0140-6736\(16\)31326-5](http://dx.doi.org/10.1016/S0140-6736(16)31326-5)

Background

The optimum blood pressure target in hypertension remains debated, especially in coronary artery disease, given concerns for reduced myocardial perfusion if diastolic blood pressure is too low. We aimed to study the association between achieved blood pressure and cardiovascular outcomes in patients with coronary artery disease and hypertension.

Methods

We analysed data from 22 672 patients with stable coronary artery disease enrolled (from Nov 26, 2009, to June 30, 2010) in the CLARIFY registry (including patients from 45 countries) and treated for hypertension. Systolic and diastolic blood pressures before each event were averaged and categorised into 10 mm Hg increments. The primary outcome was the composite of cardiovascular death, myocardial infarction, or stroke. Hazard ratios (HRs) were estimated with multivariable adjusted Cox proportional hazards models, using the 120–129 mm Hg systolic blood pressure and 70–79 mm Hg diastolic blood pressure subgroups as reference.

Findings

After a median follow-up of 5·0 years, increased systolic blood pressure of 140 mm Hg or more and diastolic blood pressure of 80 mm Hg or more were each associated with increased risk of cardiovascular events. Systolic blood pressure of less than 120 mm Hg was also associated with increased risk for the primary outcome (adjusted HR 1·56, 95% CI 1·36–1·81). Likewise, diastolic blood pressure of less than 70 mm Hg was associated with an increase in the primary outcome (adjusted HR 1·41 [1·24–1·61] for diastolic blood pressure of 60–69 mm Hg and 2·01 [1·50–2·70] for diastolic blood pressure of less than 60 mm Hg).

Interpretation

In patients with hypertension and coronary artery disease from routine clinical practice, systolic blood pressure of less than 120 mm Hg and diastolic blood pressure of less than 70 mm Hg were each associated with adverse cardiovascular outcomes, including mortality, supporting the existence of a J-curve phenomenon. This finding suggests that caution should be taken in the use of blood pressure-lowering treatment in patients with coronary artery disease.

Fruit and vegetable consumption

Eur J Nutr. 2016 Aug 20.

Fruit and vegetable consumption and risk of cholecystectomy: a prospective cohort study of women and men.

Nordenvall C^{1,2}, Oskarsson V³, Wolk A³.

PURPOSE:

Epidemiologic data on whether consumption of fruit and vegetables (FVs) decreases the risk of gallstone disease are sparse. Therefore, we examined the association between FV consumption and the 14-year risk of symptomatic gallstone disease (defined as occurrence of cholecystectomy) in a large group of middle-aged and elderly persons.

METHODS:

Data from two population-based cohorts were used, which included 74,554 men and women (born 1914-1952). Participants filled in a food frequency questionnaire in the late fall of 1997 and were followed up for cholecystectomy between 1998 and 2011 via linkage to the Swedish Patient Register. Cox regression models were used to obtain hazard ratios (HRs).

RESULTS:

During 939,715 person-years of follow-up, 2120 participants underwent a cholecystectomy (1120 women and 1000 men). An inverse association between FV consumption and risk of cholecystectomy was observed in age- and sex-adjusted analyses ($P_{\text{trend}} = .036$) but not in confounder-adjusted analyses ($P_{\text{trend}} = .43$). The multivariable-adjusted HR was 0.95 (95 % CI 0.83-1.08) for the highest compared with the lowest sex-specific quartile of FV consumption. There was no evidence of interactions with age ($P = .25$) or sex ($P = .72$) in analyses pooled by sex. However, an age-by-FV consumption interaction was observed in separate analyses of women ($P = .010$), with decreased HRs of cholecystectomy for ages up to 60 years.

CONCLUSIONS:

This study supports an inverse association between FV consumption and risk cholecystectomy in women, although the association was restricted to women aged 48-60 years. In contrast, the study does not support an association in men

Celiac children liver**Prevalence and associated factors of abnormal liver values in children with celiac disease**

Digestive and Liver Diseases, 06/22/2016 Aarela

L, et al.

The study aim to explore the prevalence and factors associated with abnormal liver values in children with celiac disease. The study depicted that increased alanine aminotransferase (ALT) is associated with more advanced serological and histological celiac disease, and adherence to a gluten-free diet appears to result in normalization or reduction of ALT levels.

Methods

- The authors studied alanine aminotransferase (ALT) in 150 children with untreated celiac disease, 161 disease controls and 500 population-based controls.
- They investigate the association between ALT and clinical and histological variables and the effect of a gluten-free diet in celiac patients.

Results

- In this study, ALT was >30 U/l: celiac disease 14.7%, ulcerative colitis 37.2%, Crohn's disease 16.7%, reflux disease 16.2%, functional gastrointestinal symptoms 8.9%, and controls 3.6%.
- Poor growth was the factors associated with increased ALT (45.5% vs 24.2%, $P = 0.039$) and severe villous atrophy (median 23.0 U/l vs partial atrophy 19.0 U/l, $P = 0.008$), but not age, sex, body-mass index, type or severity of symptoms and co-morbidities.
- ALT had a moderate correlation with endomysial ($r = 0.334$, $P < 0.001$) and transglutaminase antibodies ($r = 0.264$, $P = 0.002$) and ferritin ($r = -0.225$, $P = 0.03$), but not with other laboratory values.
- As indicated by the work done in this examination, on gluten-free diet median ALT decreased from 22.0 U/l to 18.0 U/l ($P = 0.002$) and 80% of the high values normalized

IBS and liver enzymes**Elevated liver enzymes in inflammatory bowel disease: The role and safety of infliximab**

European Journal of Gastroenterology & Hepatology, 06/21/2016 Parisi I, et al.

Physicians' intended to clarify the role and safety of infliximab in elevating liver enzymes in inflammatory bowel disease (IBD) cohort. The study depicts that infliximab is relatively safe in terms of liver impairment and discontinuation of treatment is rarely required in the setting of modest elevations of ALT.

Methods

- The physicians include 305 patients with IBD, without evidence of chronic liver disease, in the study and retrospectively evaluated.
- From a prospectively acquired database, laboratory and clinical data were retrieved.
- They compared 176 consecutive patients treated with infliximab during the last 5 years with a matched population of 129 patients who did not receive any antitumour necrosis factor treatment.

Results

- Elevation of alanine transaminase (ALT) was frequent in the entire population (36.4%) and it was not significantly connected with the use of infliximab ($P=0.284$).
- The physicians observed elevations more than 3 upper limit of normal in 7.9% and these resolved spontaneously in 83%.
- As per this study, the use of immunomodulators was the only factor that was remarkable associated with liver enzyme abnormalities in multivariate analysis [odds ratio (OR) 2.666, 95% confidence interval (CI) 1.576–4.511, $P<0.005$].
- As demonstrated by the work done in this examination, 39% of patients on infliximab had elevated liver enzymes and this was associated with increased ALT before starting infliximab (OR 3.854, 95% CI 1.800–8.251, $P=0.001$) and with longer duration of infliximab treatment (OR 1.030, 95% CI 1.013–1.047, $P=0.001$).

Malignancies and IBS

Higher risk for hematological malignancies in inflammatory bowel disease: A nationwide population-based study in Taiwan

The American Journal of Gastroenterology, 06/20/2016 Wang LH, et al. –

Physicians' coordinated to revealed the cancer risk in patients with IBD, in a nationwide population-based study in Taiwan. This study find a significantly higher risk for hematological malignancies in IBD patients, also highlight the importance of screening for hematological malignancies in patients with IBD in the future.

Malignancies in patients with inflammatory bowel disease: A single-centre experience

Digestion, 06/20/2016

Madanchi M, et al.

The physicians planed to explore the risk for developing malignancies in patients with inflammatory bowel disease (IBD). This study support the assumption that a long- standing disease course and immunosuppressive therapy increase the risk for developing malignancies in IBD patients.

Methods

- The physicians collected data from 1,026 patients from their IBD clinic treated between 2007 and 2014, in a retrospective analysis.

Results

- 22 of the 1,026 patients developed 28 cases of malignancies(14 male and 8 female).
- In this work, the median latency between IBD diagnosis and first malignancy was 13 years (range 2-27 years).
- Most common malignancies were following : non-Hodgkin lymphoma, urothelial carcinoma, colorectal cancer (CRC), prostate cancer and cholangiocellular carcinoma (CCC).
- The most common tumour type in in ulcerative colitis patients (9/22) CCC (2 cases) and CRC (2 cases), Crohn's disease patients (13/22) was lymphoma (5 cases) .
- The observed incidence of lymphoma (32.5/100,000), CCC (10.8/100,000) and bladder carcinoma (21.7/100,000) was higher than expected and known from general population.
- All of the patients received immunosuppressive therapy who developed a malignancy.
- The study found no statistical differences regarding gender, antibodies targeting tumour necrosis factor and thiopurine use, when compared to a cohort of 927 IBD patients without malignancies .

Children antibiotic use

Antibiotics use pattern and appropriateness among children in the treatment of cough/cold and diarrhea

Value in Health, 06/17/2016 Ahmad A, et l.

This study revealed that antibiotics are been used in great amount with no standard guidelines in children for the treatment of cough/cold and diarrhea. The prescribed drugs were generally do not belong to National List of Essential Medicine (NLEM). All these findings revealed the need of an appropriate measure for prescription pattern improvement.

GERD and dental erosion

Gastro-oesophageal reflux disease and dental erosions in adults: influence of acidified food intake and impact on quality of life

European Journal of Gastroenterology & Hepatology, 06/17/2016 Milani DC, et al.

The examination looking forward to investigate the association of gastro-oesophageal reflux disease (GORD) with dental erosions (DE) controlling for acidified food intake and their relationships with quality of life (QOL). As indicated by the work done in this examination, DE were prevalent and significantly associated with GORD and this association was independent of the intake of acidified food.

Methods

- 419 adult patients who sought dentistry consultation were considered eligible.
- In this work, patients responded to questionnaires for GORD symptoms, acidified food ingestion and World Health Organization quality of life (WHOQOL Bref), followed by an oral examination, in which DE were characterized according to the Smith & Knight criteria.

Results

- 417 patients were included (43.8±13.7 years; 68.8% women).
- In this examination 143 patients with GORD (34.3%) and 274 controls without GORD.
- As compared with the controls, the prevalence of DE was higher in GORD patients (25.9 vs. 17.2%; P=0.041).
- GORD was associated with DE after adjusting for acidified food intake (P=0.035), with a prevalence ratio of 1.52 (0.95 confidence interval 1.03– 2.22).
- As indicated by the work done in this examination, the WHOQOL Bref score was significantly lower in the presence of GORD [median 17.2 (GORD-DE-) vs. 15.4 (GORD+DE+); P<0.01], irrespective of DE.

IBS small intestinal permeability**Increased small intestinal permeability and its RNA expression profiles of mucosa from terminal ileum in patients with diarrhoea-predominant irritable bowel syndrome**

Digestive and Liver Diseases, 06/15/2016 Li L, et al.

The researchers intended to investigate the increased small intestinal permeability and its RNA expression profiles of mucosa from terminal ileum in patients with diarrhoea-predominant irritable bowel syndrome (IBS-D). Analysis of RNA-seq data reveals that increased small intestinal permeability is related to mucosal inflammation and immunity. The exploration suggest that IBS-D patients with increased small intestinal permeability tend to be more severely impaired in terms of psychological effects and quality of life.

Methods

- IBS-D patients were stratified into two groups according to the P95 value of the permeability in controls.
- The researchers evaluate clinical characteristics of the two groups, also selecte two biopsy cases from each of the two groups for the RNA-seq analysis.

Results

- IBS-D patients had a significant increase in the small intestinal permeability compared with controls [0.0245 (0.0229) median (interquartile range)] versus 0.0156 (0.0098), $P = 0.010$), but found no significant difference in the colonic permeability [23.286 (10.470) versus 21.650 (6.650), $P = 0.574$].
- Patients had worse psychological effects ($P = 0.027$) and quality of life ($P = 0.044$), in IBS-D with increased small intestinal permeability .
- In this RNA-seq analysis data revealed 185 genes differentially expressed, many of which were related to mucosal inflammation and immunity.

Probiotics effective in IBS**Effects of probiotic type, dose and treatment duration on irritable bowel syndrome diagnosed by Rome III criteria: A meta-analysis**

BMC Gastroenterology, 06/14/2016 Zhang

This meta-analysis intended to evaluate the efficacy of different probiotic type, dose and treatment duration in irritable bowel syndrome (IBS) patients diagnosed using Rome III criteria. The research discover that probiotics are an effective pharmacological therapy in IBS patients.

Methods

- The authors searched Medline, EMBASE, and the Cochrane Central Register of Controlled Trials up to October 2015.
- In this study, RCTs including comparisons between the effects of probiotics and placebo on IBS patients diagnosed by Rome III criteria were eligible.
- Continuous data were pooled using a standardized mean difference (SMD) with a 95 % CI, whereas dichotomous data were pooled to obtain the relative risk (RR) with a 95 % confidence interval (CI).

Results

- 21 RCTs were included in this meta-analysis.
- In this study probiotic therapy was associated with more improvement than placebo administration in overall symptom response (RR: 1.82, 95 % CI 1.27 to 2.60) and quality of life (QoL) (SMD: 0.29, 95 % CI 0.08 to 0.50), but not in individual IBS symptoms.
- With respect to overall symptom response and QoL, single probiotics, a low dose, and a short treatment duration were more effective.
- The study found no differences in individual IBS symptoms in the subgroup analyses.

Factors for Celiac disease

Maternal and perinatal conditions and the risk of developing celiac disease during childhood

BMC Pediatrics, 06/13/2016

Namatovu F, et al.

The authors intended to determine how conditions related to maternity, delivery and the neonatal period influence Celiac disease (CD) onset during childhood. Elective caesarean delivery and repeated maternal urinary tract infections during pregnancy are associated with increased risk of CD onset during childhood, whereas high maternal age and high income reduced the risk of CD.

Depression and IBS**Depression and anxiety in patients with inflammatory bowel disease: A systematic review**

Journal of Psychosomatic Research, 06/13/2016

Neuendorf R, et al.

In this systematic review, the clinicians aimed to explore the prevalence of depression and anxiety in patients with inflammatory bowel disease. This research indicate that patients with IBD have about a 20% prevalence rate of anxiety and a 15% prevalence rate of depression.

Methods

- The authors performed a series of comprehensive literature searches of Medline, Cochrane Library, PsycINFO, CINAHL, Embase, AMED, and ProQuest Dissertations through March 2014.
- Inclusion criteria included peer-reviewed, published scientific articles that reported a measurement of mood or anxiety among IBD patients.
- They included studies only with adults (≥ 18 years old) and with more than 10 patients.
- For all included studies methodological quality was assessed .

Results

- 171 articles were recognized with a total of 158,371 participants.
- Pooled prevalence estimate for anxiety disorders was 20.5% [4.9%, 36.5%] and 35.1% [30.5, 39.7%] for symptoms of anxiety.
- Compared to disease remission, IBD patients in active disease had higher prevalence of anxiety of 75.6% [65.5%, 85.7%].
- Pooled prevalence of depression disorders was 15.2% [9.9%, 20.5%] and was 21.6% [18.7%, 24.3%] for symptoms of depression.
- In Crohn's disease the prevalence of depressive symptoms was higher (25.3% [20.7%, 30.0%]) compared to UC, and higher with active disease (40.7% [31.1%, 50.3%]) compared to IBD patients in remission.

IBS and constipation

Irritable bowel syndrome with constipation

Neurogastroenterology & Motility, 06/10/2016 Whitehead

WE, et al.

Authors' goal was to identify possible biomarkers to distinguish functional constipation (FC) from irritable bowel syndrome with constipation (IBS-C). This research suggests that FC and IBS-C are different disorders rather than points on a constipation spectrum.

Methods

- This review identified 15 studies that compared physiologic tests in FC vs IBS-C.
- Pain thresholds were lower in IBS-C than FC for 3/5 studies and not different in 2/5.
- Colonic motility was decreased more in FC than IBS-C for 3/3 studies, and whole gut transit was delayed more in FC than IBS-C in 3/8 studies and not different in 5/8.
- Pelvic floor dyssynergia was unrelated to diagnosis.
- Sympathetic arousal, measured in only 1 study, was greater in IBS-C than FC.
- The most reliable separation of FC from IBS-C was shown by a novel new magnetic resonance imaging technique described in this issue of the journal.

Results

- These authors showed that drinking one liter of polyethylene glycol laxative significantly increased water content in the small intestine, volume of contents in the ascending colon, and time to first evacuation in FC vs IBS-C; and resulted in less colon motility and delayed whole gut transit in FC compared to IBS-C.
- This well-tolerated, non-invasive test promises to become a new standard for differential diagnosis of FC vs IBS-C, although replication is needed,.

Vit. D deficiency and UC**Serum 25-hydroxyvitamin D concentration is inversely associated with mucosal inflammation in patients with ulcerative colitis**

American Journal of Clinical Nutrition, 06/10/2016

Meckel K, et al.

In this study, the authors tried to assess whether insufficient serum 25 hydroxyvitamin D [25(OH)D] concentrations are affiliated with raised mucosal inflammation, a loss of epithelial junctional proteins, and an raise in mucosal inflammatory cytokines in patients with ulcerative colitis (UC). It was concluded that in UC patients, serum 25(OH)D concentration is conversely associated with mucosal inflammation and disease activity. These outcomes, combined with the discoveries that serum 25(OH)D concentrations associate with the mucosal expression of VDR as well as epithelial junction proteins and conversely with proinflammatory cytokines, suggest that vitamin D deficiency may contribute to UC inflammation by disrupting epithelial barrier function.

Methods

- 230 subjects with UC were prospectively enrolled.
- Serum 25(OH)D concentrations were distinguished with the Mayo endoscopic score, the total Mayo score, and histologic activity.
- Colonic mucosal expression concentrations of vitamin D receptor (VDR), E-cadherin, zonula occluden 1 (ZO-1), occludin, claudin-2, tumor necrosis factor α (TNF- α), and interleukin 8 (IL-8) were distinguished between dichotomous groups with low or high serum 25(OH)D concentrations.

Results

- The mean serum 25(OH)D concentration was 21.8 ng/mL.
- Subjects stratified by concentrations included 12.6% ≥ 30 ng/mL, 45.6% ≥ 20 to < 30 ng/mL, 37.4% ≥ 10 to < 20 ng/mL, and 4.4% < 10 ng/mL.
- There was an inverse relationship between serum 25(OH)D concentrations and mucosal inflammation as evaluated by the Mayo endoscopy score ($P = 0.01$), disease activity as indicated by the total Mayo score ($P = 0.001$), and histologic activity ($P = 0.02$).
- A serum 25(OH)D concentration < 20 ng/mL was affiliated with reduced mucosal transcript and protein expression concentrations of VDR, E-cadherin, and occludin as well as reduced protein expression of ZO-1, whereas TNF- α and IL-8 mucosal transcript expression concentrations were augmented.

10 A. CERVICAL SPINE

Meniscoids

Acta Chir Orthop Traumatol Cech. 2002;69(3):149-57.

[Meniscoids of the intervertebral joints].

Kos J¹, *Hert J, Sevcik P.*

PURPOSE OF THE STUDY: A large amount of material was used to study the distribution, location and shape of meniscoids in intervertebral joints of the human spine, from the atlanto-occipital joint to the sacrum, in order to find out how many of intervertebral joints had mobile meniscoids. These might be regarded as possible causes of spinal blockade or other vertebrogenous complaints. **MATERIAL:** The materials provided by the Department of Anatomy and Department of Forensic Medicine at the Faculty of Medicine of Charles University in Pilsen included 20 cadaverous spines from humans aged 20 to 80 years. **METHODS:** Access to each joint was provided by dissection of the articular capsule from the lower articular processes of the vertebra situated above. In the orthograde view, all meniscoids were described in terms of shape, size, consistence and location. Their structure was ascertained by histological examination of cross sections stained with haematoxylin and eosin. **RESULTS:** Meniscoids varying in shape and size were found in all of the intervertebral joints. They were classified by their histological structure as synovial, fat and fibrous meniscoids. The first category was observed frequently, the last only rarely. A total of 29 mobile meniscoids were recorded, most of them in the lumbar spine. Most of the meniscoids present in the cervical spine were of synovial and less frequently of fat types. Meniscoids found in the thoracic spine were poorly developed synovial ones and those present in the lumbar spine were of all types and were also largest in size. The most conspicuous meniscoids were seen in the spines that showed degenerative changes in intervertebral joints. Large fat pads were found in atlanto-occipital and atlanto-axial joints. Mobile meniscoids, most of them present in the lumbar spine (6.4% of all joints.), were connected with the capsule by a thin pedicle and it was possible to move them over a half of the articular surface. Some inter-individual changes were also found; in some spines, the most developed meniscoids were fat pads, in the others, these were synovial meniscoids. Spines of younger individuals showed a predominance of synovial meniscoids with smooth surfaces that arched against the articular cavity. In spines of elderly individuals, meniscoids were rough, in some cases fibrous in structure, and had a lobulated or frayed edge. **DISCUSSION:** The shape, location of meniscoids and their presence in every joint indicate their definite role for the spine: they compensate the incongruence of articular surfaces, fill in empty spaces and facilitate spread of synovial fluid during translation movements. Variability in shape, size and location of meniscoids give support to the view that meniscoids developed secondarily in relation to the morphogenesis of articular surfaces and that they are fully adapted to the shape and function of the joint. Mobile meniscoids, particularly fibrous ones, can get wedged between articular surfaces due to a sudden, rush movement (entrapment theory) or can be caught between the edge of an articular surface and the articular capsule attachment (extrapment theory). This situation may result in either mechanical or functional blockade of the spine and a subsequent painful condition due to compression of nerves and reflex contraction of muscles. Direct evidence of such blockade and the validity of either hypothesis can today be provided by magnetic resonance imaging.

CONCLUSIONS: All intervertebral joints, along the length of spine, possess capsule processes, i.e., meniscoids, which can be classified as synovial, fat and fibrous. Meniscoids are most developed in the lumbar and cervical spine. They serve to compensate for the incongruence of articular surfaces and to fill in empty spaces. Mobile, peduncular meniscoids can, at sudden or non-physiological movements, be caught between articular surfaces and cause spinal blockade and painful conditions. Manipulative treatment is, therefore, justified in indicated cases.

12 A. WHIPLASH

Fatty infiltration of the multifidus

An Investigation of Fat Infiltration of the Multifidus Muscle in Patients With Severe Neck Symptoms Associated With Chronic Whiplash Associated Disorder

Authors: Anette Karlsson, MSc^{1,2}, Olof Dahlqvist Leinhard, PhD^{2,3}, Ulrika Åslund, PT, MSc⁴, Janne West, PhD^{2,3}, Thobias Romu, MSc^{1,2}, Örjan Smedby, PhD, MD^{5,6}, Peter Zsigmond, PhD, MD⁷, Anneli Peolsson, PT, PhD⁴

Published: *Journal of Orthopaedic & Sports Physical Therapy*, 2016 **Volume:**0 **Issue:**0 **Pages:**1–23 **DOI:**10.2519/jospt.2016.6553

Study Design

Cross-sectional study.

Background

Findings of fat infiltration in cervical spine multifidus, as a sign of degenerative morphometric changes due to the whiplash injury, need to be verified.

Objectives

To develop a method using water/fat magnetic resonance imaging (MRI) to investigate fat infiltration and cross-sectional area of multifidus muscle in individuals with whiplash-associated disorders (WAD) compared to healthy controls.

Methods

Fat infiltration and cross-sectional area in the multifidus muscles spanning the C4 and C7 segmental levels were investigated by manual segmentation using water/fat separated MRI in 31 participants with WAD and 31 controls, matched for age and sex.

Results

Based on average values for data spanning C4 to C7, participants with severe disability related to WAD had 38% greater muscular fat infiltration compared to healthy controls ($P=.03$) and 45% greater fat infiltration compared to those with mild/moderate disability related to WAD ($P=.02$). There were no significant differences between those with mild/moderate disability and healthy controls. No significant differences between groups were found for multifidus cross-sectional area. Significant differences were observed for both cross-sectional area and fat infiltration between segmental levels.

Conclusions

Participants with severe disability after a whiplash injury had higher fat infiltration in the multifidus compared to controls and to those with mild/moderate disability secondary to WAD. Earlier reported findings using T1-weighted MRI were reproduced using refined imaging technology. The results of the study also indicate a risk when segmenting single cross-sectional slices as both cross-sectional area and fat infiltration differ between cervical levels. *J Orthop Sports Phys Ther*, Epub 2 Sep 2016. doi:10.2519/jospt.2016.6553

Keyword: cervical spine, magnetic resonance imaging, WAD

Management of

Recovery Pathways and Prognosis After Whiplash Injury

Authors: Carrie Ritchie, PhD¹, Michele Sterling, PT, PhD¹

Published: *Journal of Orthopaedic & Sports Physical Therapy*,
2016 **Volume:**0 **Issue:**0 **Pages:** 1–30 **DOI:** 10.2519/jospt.2016.6918

Synopsis

Recovery from a whiplash injury is varied and complex. Some individuals recover quickly and fully, while others experience on-going pain and disability.

Three distinct patterns of predicted recovery (trajectories) have been identified using disability and psychological outcome measures. These trajectories are not linear, and show that recovery, if it is going to occur, tends to happen within the first 3 months of the injury with little improvement after this period. Identification of factors associated with poor recovery is accumulating, and since 2000, there have been at least 10 published systematic reviews on prognostic factors for whiplash associated disorder (WAD). Poor recovery has been consistently reported to be associated with high initial neck pain intensity and neck-related disability, post-traumatic stress symptoms, pain catastrophizing, and to a lesser extent low self-efficacy and cold hyperalgesia. Evidence regarding factors including compensation status, some psychological factors, structural pathology, and pre-injury health status remain equivocal.

Given the huge number of predictive factors and various interpretations of recovery, adapting these data for use in clinical practice is difficult. Tools such as clinical prediction rules (CPRs) may help by statistically quantifying relevant data to predict the probability of diagnosis, prognosis, or response to treatment. Numerous CPRs have been derived for individuals with whiplash, however to date, only 3 prognostic CPRs have undergone external validation and none have yet undergone impact analysis, a necessary step in providing information about the rules' ability to improve clinically relevant outcomes.

J Orthop Sports Phys Ther, Epub 3 Sep 2016. doi:10.2519/jospt.2016.6918

Keyword: cervical spine, clinical prediction rule, neck, recovery, WAD

Meniscoids in whiplash**Morphology of Cervical Spine Meniscoids in Individuals With Chronic Whiplash Associated Disorder: A Case-Control Study**

Authors: Scott F. Farrell, PT^{1,2}, Peter G. Osmotherly, MMedSc, PhD¹, Jon Cornwall, MSc, PhD^{3,5}, Peter Lau, MBBS, FRANZCR⁶, Darren A. Rivett, MAppSci, PhD¹

Published: *Journal of Orthopaedic & Sports Physical Therapy*, 2016 **Volume:**0 **Issue:**0 **Pages:**1–33 **DOI:**10.2519/jospt.2016.6702

Study Design

Case-control study.

Background

Cervical spine meniscoids are thought to contribute to neck pain and hypomobility in individuals with chronic whiplash associated disorder (WAD), however their morphology has not been studied in a clinical population.

Objectives

To investigate cervical spine meniscoid morphology in individuals with chronic WAD.

Methods

Twenty volunteers with chronic WAD (mean [SD] age 39.3 [11.0] years, 10 female) and 20 age and sex-matched controls (39.1 [10.6] years) underwent cervical spine magnetic resonance imaging. Lateral atlantoaxial and zygapophyseal joints (C2/3 to C6/7) were inspected for meniscoids. Length of meniscoid protrusion was measured and composition (adipose/fibrous/fibro adipose) assessed. Data were analyzed using Wilcoxon signed-rank tests and linear and logistic regression ($P < .05$).

Results

Meniscoids were identified in the chronic WAD ($n = 317$) and control ($n = 296$) groups. At the lateral atlantoaxial joints, median meniscoid length was greater in the control group (ventral 6.07 mm; dorsal 7.24 mm) than WAD group (ventral 5.01 mm, $P = .06$; dorsal 6.48 mm, $P < .01$). At the dorsal aspect of zygapophyseal joints, meniscoids were more frequently fibrous in the chronic WAD group (odds ratio 2.38, $P < .01$; likelihood ratio test [LRT] Chi-square [2] = 9.02, LRT $P = .01$).

Conclusion

In individuals with chronic WAD, lateral atlantoaxial meniscoids were shorter and dorsal cervical zygapophyseal meniscoids were more fibrous, suggesting alterations in meniscoid composition. This may have pathoanatomical implications in chronic WAD. *J Orthop Sports Phys Ther*, Epub 3 Sep 2016. doi:10.2519/jospt.2016.6702

Keyword: atlanto-axial joint, magnetic resonance imaging, neck, synovial fold, zygapophyseal joint

13. CRANIUM/TMJ

Nasal pharyngeal space

Am J Orthod Dentofacial Orthop. 2016 Sep;150(3):451-8. doi: 10.1016/j.ajodo.2016.02.021.

Morphometric growth changes of the nasopharyngeal space in subjects with different vertical craniofacial features.

Park JE¹, Gray S², Bennani H³, Antoun JS⁴, Farella M⁵.

INTRODUCTION:

The purpose of this study was to morphometrically investigate the growth pattern of the adenoids in growing subjects with hyperdivergent and hypodivergent vertical craniofacial features.

METHODS:

In this retrospective study, we used a longitudinal sample of lateral cephalometric radiographs of 28 hyperdivergent and 30 hypodivergent subjects from 4 to 13 years of age. The radiographs were obtained from the American Association of Orthodontists Foundation Craniofacial Growth Legacy Collection. Measurements were made using digital tracings of the lateral cephalograms and point distribution models. Mixed-model analyses were used for statistical analysis.

RESULTS:

The mean distance between the sphenoid bone and the posterior nasal spine increased up to 5.3 mm over a 9-year span (95% CI, 4.1-6.5 mm; $P < 0.001$). Furthermore, the mean distance between the sphenoid bone and the posterior nasal spine differed significantly ($P = 0.029$) between facial types; it was consistently greater (1.8 mm; 95% CI, 0.2-3.3 mm) in the hyperdivergent group. The nasopharyngeal airway area showed a trend to increase with age up to 12-fold ($P < 0.001$). A significant interaction ($P = 0.004$) was found between age and facial type. Assessment of the adenoid shapes showed greater convexities in the hyperdivergent group, which were observable from an earlier age and for a longer duration.

CONCLUSIONS:

Clear differences in the morphometric growth pattern of the adenoids were found between facial types. Evaluation of adenoid shapes showed more prominent convexities that lasted longer in the long facial types than in the short facial types.

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PMID: [27585773](https://pubmed.ncbi.nlm.nih.gov/27585773/)

Sleep disturbances and suicide

Circulation. 2016 Aug 22. pii: CIR.0000000000000439.

Added Sugars and Cardiovascular Disease Risk in Children: A Scientific Statement From the American Heart Association.

Vos MB, Kaar JL, Welsh JA, Van Horn LV, Feig DI, Anderson CA, Patel MJ, Cruz Munos J, Krebs NF, Xanthakos SA, Johnson RK; American Heart Association Nutrition Committee of the Council on Lifestyle and Cardiometabolic Health; Council on Clinical Cardiology; Council on Cardiovascular Disease in the Young; Council on Cardiovascular and Stroke Nursing; Council on Epidemiology and Prevention; Council on Functional Genomics and Translational Biology; and Council on Hypertension.

Abstract

BACKGROUND:

Poor lifestyle behaviors are leading causes of preventable diseases globally. Added sugars contribute to a diet that is energy dense but nutrient poor and increase risk of developing obesity, cardiovascular disease, hypertension, obesity-related cancers, and dental caries.

METHODS AND RESULTS:

For this American Heart Association scientific statement, the writing group reviewed and graded the current scientific evidence for studies examining the cardiovascular health effects of added sugars on children. The available literature was subdivided into 5 broad subareas: effects on blood pressure, lipids, insulin resistance and diabetes mellitus, nonalcoholic fatty liver disease, and obesity.

CONCLUSIONS:

Associations between added sugars and increased cardiovascular disease risk factors among US children are present at levels far below current consumption levels. Strong evidence supports the association of added sugars with increased cardiovascular disease risk in children through increased energy intake, increased adiposity, and dyslipidemia. The committee found that it is reasonable to recommend that children consume ≤ 25 g (100 cal or ≈ 6 teaspoons) of added sugars per day and to avoid added sugars for children < 2 years of age. Although added sugars most likely can be safely consumed in low amounts as part of a healthy diet, few children achieve such levels, making this an important public health target.

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KEYWORDS:

AHA Scientific Statements; child; diet; nutritional status; obesity; sugar; sweetening agents

PMID: [27550974](#)

HA nasal oscillations

Resting-state fMRI study of acute migraine treatment with kinetic oscillation stimulation in nasal cavity

NeuroImage: Clinical, 09/08/2016Li TQ, et al. –

Findings affirm the efficacy of kinetic oscillatory stimulation (KOS) treatment for relieving acute migraine symptoms and reducing attack frequency.

Resting–state fMRI measurements show that migraine is connected with aberrant intrinsic functional activity in the limbic and primary sensory systems. KOS in the nasal cavity gives rise to the adjustment of the intrinsic functional activity in the limbic and primary sensory networks and restores the physiological homeostasis in the autonomic nervous system.

Oral health

Caries Res. 2016 Sep 2;50(5):471-479.

Early Caries Predicts Low Oral Health-Related Quality of Life at a Later Age.

Kragt L, van der Tas JT, Moll HA, Elfrink ME, Jaddoe VW, Wolvius EB, Ongkosuwito EM.

Abstract

Oral health-related quality of life (OHRQOL) is the perceived impact of one's own oral health on daily life.

Oral diseases influence children's OHRQOL directly, but OHRQOL might also be related to oral health experiences from the past. We investigate the relation between dental caries at the age of 6 with OHRQOL assessed at the age of 10. This study was conducted within the Generation R Study, a population-based prospective cohort study. Caries experience was assessed with the decayed, missing, and filled teeth index (dmft) at a median age of 6.09 years (90% range: 5.73-6.80). OHRQOL was assessed with a short form of the Child Oral Health Impact Profile at the children's age of 9.79 years (9.49-10.44). In total, 2,833 children participated in this study, of whom 472 (16.6%) had mild caries (dmft 1-3) and 228 (8.0%) had severe caries (dmft >3). The higher the dmft score at the age of 6, the lower the OHRQOL at the age of 10 ($p < 0.001$). The children with severe caries at the age of 6 had significantly higher odds of being in the lowest OHRQOL quartile at the age of 10 (OR = 1.69; 95% CI: 1.17-2.45).

Our study highlights the importance of oral health during childhood, because those who get a compromised start to oral health are much more likely to follow a trajectory which will lead to poor oral health (-related QOL) later. OHRQOL is not only related to current oral health experiences but also to oral health experiences from the past.

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PMID:[27585185](#)

Central sensitization

Clin J Pain. 2016 Oct;32(10):882-8. doi: 10.1097/AJP.0000000000000369.

Concomitant Migraine and Temporomandibular Disorders are Associated With Higher Heat Pain Hyperalgesia and Cephalic Cutaneous Allodynia.

Chaves TC¹, Dach F, Florencio LL, Carvalho GF, Gonçalves MC, Bigal ME, Speciali JG, Bevilacqua-Grossi D.

Abstract

OBJECTIVES:

The aim of this study was to assess differences in the levels of hyperalgesia and cutaneous allodynia (CA) among women with migraine, temporomandibular disorders (TMD), or both.

MATERIALS AND METHODS:

Eighty women participated in the study. Mean ages for the control group, TMD group, migraine group, and migraine+TMD group were 26.15 (95% confidence interval [CI], 28.73 to 23.57), 31.65 (95% CI, 37.82 to 25.48), 35.05 (95% CI, 40.37 to 29.73), and 34.20 (95% CI, 37.99 to 30.41) years, respectively. The 12-item Allodynia Symptom Checklist was administered to assess CA. All participants underwent the Quantitative Sensory Test to determine the cold-pain and heat-pain thresholds. Mechanical pain thresholds were assessed using Semmes-Weinstein monofilaments. One-way analysis of variance and χ tests were used for statistical analysis. Alpha was set at 0.05 level for statistical significance.

RESULTS:

For all sites evaluated, the mean cold-pain threshold values were significantly lower in the TMD, migraine, and TMD+migraine groups compared with the control group. However, the mean heat-pain threshold values in the extracephalic region were significantly smaller only for the TMD+migraine group compared with the control group (41.94°C; 95% CI, 40.54 to 43.34 vs. 44.79°C; 95% CI, 43.45 to 46.12; P=0.03). Mechanical hyperalgesia in orofacial and neck sites was significantly lower in the TMD and TMD+migraine groups compared with the control group. Mean total 12-item Allodynia Symptom Checklist score in the TMD+migraine group was significantly higher than in the migraine group (9.53; 95% CI, 7.45 to 11.60 vs. 6.95; 95% CI, 5.35 to 8.55; P=0.02).

CONCLUSIONS:

More pronounced levels of hyperalgesia and CA were found in patients with both TMD and migraine. Thus, it is suggested that the concomitant presence of TMD and migraine may be related to intensification of central sensitization.

Epicrania Fugax

Facial epicrania fugax: A prospective series of eight new cases

Cephalalgia, 09/08/2016 Gutierrez Viedma A, et al. –

This prospective study aimed to present eight patients with an epicrania fugax—type of pain of facial location and either upward or downward radiation. This research reinforces the facial variant of epicrania fugax and extends the phenotype with cases of downward radiation, it also contributes to enriching the differential diagnosis of facial pain. Moreover, neurovascular compression of the trigeminal nerve may be found in some cases, although a possible pathogenic link needs further research.

Methods

- For each patient, the clinician noticed relevant demographic and clinical data .
- They observed magnetic resonance imaging (MRI) with fast imaging employing steady state acquisition (FIESTA) in all cases for the evaluation of neurovascular compression of the trigeminal nerve.

Results

- There were seven women and one man, and the mean age was 76.1 years (standard deviation, 11.3).
- It was noticed that six patients had a paroxysmal pain starting at the lower face and moving upwards, while two patients had downward radiation.
- The pain always followed a fixed linear trajectory across different dermatomes.
- All cases had triggers, and pain intensity was consistently severe.
- Half of the patients had accompanying autonomic features.
- Neurovascular compression with imprinting over the trigeminal root on the symptomatic side was identified in three patients.
- All cases responded to antiepileptic drugs, and three had spontaneous remissions.

14. HEADACHES

Cluster brain changes

Cephalalgia. 2016 Sep 7. pii: 0333102416668657. [Epub ahead of print]

Bout-associated intrinsic functional network changes in cluster headache: A longitudinal resting-state functional MRI study.

Chou KH¹, Yang FC², Fuh JL³, Kuo CY⁴, Wang YH⁴, Lirng JF⁵, Lin YY⁶, Wang SJ⁷, Lin CP⁸.

BACKGROUND:

Previous imaging studies on the pathogenesis of cluster headache (CH) have implicated the hypothalamus and multiple brain networks. However, very little is known regarding dynamic bout-associated, large-scale resting state functional network changes related to CH.

METHODS:

Resting-state functional magnetic resonance imaging data were obtained from CH patients and matched controls. Data were analyzed using independent component analysis for exploratory assessment of the changes in intrinsic brain networks and their relationship between in-bout and out-of-bout periods, as well as correlations with clinical observations.

RESULTS:

Compared to healthy controls, CH patients had functional connectivity (FC) changes in the temporal, frontal, salience, default mode, somatosensory, dorsal attention, and visual networks, independent of bout period. Compared to out-of-bout scans, in-bout scans showed altered FC in the frontal and dorsal attention networks. Lower frontal network FC correlated with longer duration of CH.

CONCLUSIONS:

The present findings suggest that episodic CH with dynamic bout period shifts may involve bout-associated FC changes in multiple discrete cortical areas within networks outside traditional pain processing areas. Dynamic changes in FC in frontal and dorsal attention networks between bout periods could be important for understanding episodic CH pathophysiology.

16. CONCUSSIONS

Concussion management

Clin J Sport Med. 2016 Sep;26(5):381-5. doi: 10.1097/JSM.0000000000000270.

Concussion Management Practice Patterns Among Sports Medicine Physicians.

Stache S¹, Howell D, Meehan WP 3rd.

OBJECTIVE:

The primary purpose of this study was to examine concussion management practice patterns among sports medicine physicians in the United States.

DESIGN:

Cross-sectional study using a web-based survey.

PARTICIPANTS:

Members of the American Medical Society for Sports Medicine (AMSSM).

MAIN OUTCOME MEASURES:

We distributed a questionnaire to physician members of the AMSSM assessing the current practices for evaluating and managing concussions sustained during sports. Specifically, we asked respondents about their use of management guidelines, medications, balance assessments, neuropsychological tests, and return-to-play strategies.

RESULTS:

Of the 3591 members emailed, 425 (11.8%) respondents responded. Ninety-seven percent of respondents reported basing current management of sport-related concussion on a published set of criteria, with a majority (91.9%) following the guidelines provided by the Fourth International Conference on Concussion in Sport. Seventy-six percent of respondents reported using medication beyond 48 hours postinjury. Acetaminophen was reported as the most commonly administered medication, although tricyclic antidepressants and amantadine were also commonly administered. Vitamins, minerals, and dietary supplements were also reported as commonly administered. Most respondents reported using a form of neuropsychological testing (87.1%). A majority of respondents (88.6%) reported allowing athletes to return to competition after concussion only once the athlete becomes symptom free and completes a return-to-play protocol.

CONCLUSIONS:

Most sports medicine physicians seem to use recently developed guidelines for concussion management, regularly use medications and neuropsychological testing in management strategies, and follow established return-to-play guidelines.

CLINICAL RELEVANCE:

Sports medicine physicians seem to have clinical expertise in the management of sport-related concussion.

PMID: [26584436](https://pubmed.ncbi.nlm.nih.gov/26584436/)

29. OA**Distribution of pain**

Fam Pract. 2016 Aug 18. pii: cmw071.

Pain distribution in primary care patients with hip osteoarthritis.

Poulsen E¹, Overgaard S², Vestergaard JT³, Christensen HW³, Hartvigsen J⁴.

BACKGROUND:

Hip osteoarthritis (OA) is the most common diagnosis in primary care adult patients presenting with hip pain but pain location and pain distribution in primary care patients with hip OA have been reported inadequately.

OBJECTIVE:

To describe pain location and pain distribution in primary care patients with clinical and radiographic confirmed hip OA.

METHODS:

Primary care patients with unilateral clinical and radiographic hip OA living on the island of Funen, Denmark were recruited from primary care to participate in a randomized clinical trial. At baseline, patients recorded pain intensity using an 11-box numeric rating scale and the distribution of hip pain using a manikin displaying three separate views: front, back and lateral. Pain drawings were analysed using a template to determine the most frequent pain locations and distribution of pain.

RESULTS:

Pain drawings were completed by 109 patients of which 108 (99%) were valid. The mean age of patients was 65 (SD 9) years and 44% were females. The mean pain intensity was 5.4 (SD 2.0). A total of 77% had marked the greater trochanter area, 53% the groin area, 42% the anterior/lateral thigh area, 38% the buttock area, 17% the knee and 15% the lower leg area. No patients marked pain exclusively in the areas of the knee, posterior thigh or lower leg.

CONCLUSION:

The most common pain locations of patients with hip OA presenting to primary care are the greater trochanter, groin, thigh and buttock areas. No patients recorded pain exclusively in the knee or lower leg.

34. PATELLA

Fat pad

Arthritis Res Ther. 2013;15(6):225.

An emerging player in knee osteoarthritis: the infrapatellar fat pad.

Ioan-Facsinay A, Kloppenburg M.

Abstract

The role of inflammation in the development, progression, and clinical features of osteoarthritis has become an area of intense research in recent years.

This led to the recognition of synovitis as an important source of inflammation in the joint and indicated that synovitis is intimately associated with pain and osteoarthritis progression. In this review, we discuss another emerging source of inflammation that could play a role in disease development/progression: the infrapatellar fat pad (IFP). The aim of this review is to offer a comprehensive view of the pathology of IFP as obtained from magnetic resonance studies, along with its characterization at both the cellular and the molecular level.

Furthermore, we discuss the possible function of this organ in the pathological processes in the knee by summarizing the knowledge regarding the interactions between IFP and other joint tissues and discussing the pro- versus anti-inflammatory functions this tissue could have. We hope that this review will offer an overview of all published data regarding the IFP and will indicate novel directions for future research.

37. OSTEOARTHRITIS/KNEE**OA and quality of life**

Health Qual Life Outcomes. 2016 Aug 26;14(1):121. doi: 10.1186/s12955-016-0525-4.

Association of knee pain and different definitions of knee osteoarthritis with health-related quality of life: a population-based cohort study in southern Sweden.

Kiadaliri AA^{1,2,3}, Lamm CJ⁴, de Verdier MG⁵, Engström G⁶, Turkiewicz A⁷, Lohmander LS^{7,8,9}, Englund M^{7,10,11}.

BACKGROUND:

While the impact of knee pain and knee osteoarthritis (OA) on health-related quality of life (HRQoL) has been investigated in the literature, there is a lack of knowledge on the impact of different definitions of OA on HRQoL. The main aim of this study was to measure and compare the impact of knee OA and its different definitions on HRQoL in the general population.

METHODS:

A random sample of 1300 participants from Malmö, Sweden with pain in one or both knees in the past 12 months with duration ≥ 4 weeks and 650 participants without were invited to clinical and radiographic knee examination. A total of 1527 individuals with a mean (SD) age 69.4 (7.2) participated and responded to both generic (EQ-5D-3L) and disease-specific (the Knee injury and Osteoarthritis Outcome Score) questionnaires. Knee pain was defined as pain during the last month during most of the days. Knee OA was defined radiographically (equivalent to Kellgren and Lawrence grade ≥ 2) and clinically according to the American College of Rheumatology (ACR) criteria.

RESULTS:

Of participants with either knee pain or knee OA or both, 7 % reported no problem for the EQ-5D-3L attributes. The corresponding proportion among references (neither knee pain nor OA) was 42 %. The participants with knee pain and OA had all HRQoL measures lower compared to those with knee pain but no OA. The ACR clinical definition of knee OA was associated with lower HRQoL than the definition based on radiographic knee OA (adjusted difference -0.08 in UK EQ-5D-3L index score).

CONCLUSIONS:

Applying different definitions of knee OA result in different levels of HRQoL and this is mainly explained by the knee pain experience. These differences may lead to discrepant conclusions from cost-utility analyses.

KEYWORDS:

EQ-5D-3L; KOOS; Knee osteoarthritis; Knee pain; Quality of life; Sweden

PMID: [27565135](https://pubmed.ncbi.nlm.nih.gov/27565135/)

Neuromuscular

BMC Musculoskelet Disord. 2016 Aug 27;17(1):372. doi: 10.1186/s12891-016-1209-2.

Reductions in co-contraction following neuromuscular re-education in people with knee osteoarthritis.

Preece SJ¹, Jones RK², Brown CA³, Cacciatore TW⁴, Jones AK³.

BACKGROUND:

Both increased knee muscle co-contraction and alterations in central pain processing have been suggested to play a role in knee osteoarthritis pain. However, current interventions do not target either of these mechanisms. The Alexander Technique provides neuromuscular re-education and may also influence anticipation of pain. This study therefore sought to investigate the potential clinical effectiveness of the AT intervention in the management of knee osteoarthritis and also to identify a possible mechanism of action.

METHODS:

A cohort of 21 participants with confirmed knee osteoarthritis were given 20 lessons of instruction in the Alexander Technique. In addition to clinical outcomes EMG data, quantifying knee muscle co-contraction and EEG data, characterising brain activity during anticipation of pain, were collected. All data were compared between baseline and post-intervention time points with a further 15-month clinical follow up. In addition, biomechanical data were collected from a healthy control group and compared with the data from the osteoarthritis subjects.

RESULTS:

Following AT instruction the mean WOMAC pain score reduced by 56 % from 9.6 to 4.2 ($P < 0.01$) and this reduction was maintained at 15 month follow up. There was a clear decrease in medial co-contraction at the end of the intervention, towards the levels observed in the healthy control group, both during a pre-contact phase of gait ($p < 0.05$) and during early stance ($p < 0.01$). However, no changes in pain-anticipatory brain activity were observed. Interestingly, decreases in WOMAC pain were associated with reductions in medial co-contraction during the pre-contact phase of gait.

CONCLUSIONS:

This is the first study to investigate the potential effectiveness of an intervention aimed at increasing awareness of muscle behaviour in the clinical management of knee osteoarthritis. These data suggest a complex relationship between muscle contraction, joint loading and pain and support the idea that excessive muscle co-contraction may be a maladaptive response in this patient group. Furthermore, these data provide evidence that, if the activation of certain muscles can be reduced during gait, this may lead to positive long-term clinical outcomes. This finding challenges clinical management models of knee osteoarthritis which focus primarily on muscle strengthening.

TRIAL REGISTRATION:

ISRCTN74086288 , 4th January 2016, retrospectively registered.

KEYWORDS:

Alexander Technique; Co-contraction; Electroencephalography; Gait; Knee osteoarthritis; Pain
PMID: [27568007](https://pubmed.ncbi.nlm.nih.gov/27568007/)

50 A. MOTOR CONTROL

Alexander and OA

BMC Musculoskelet Disord. 2016 Aug 27;17(1):372. doi: 10.1186/s12891-016-1209-2.

Reductions in co-contraction following neuromuscular re-education in people with knee osteoarthritis.Preece SJ¹, Jones RK², Brown CA³, Cacciatore TW⁴, Jones AK³.**BACKGROUND:**

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ISRCTN74086288 , 4th January 2016, retrospectively registered.

KEYWORDS:

Alexander Technique; Co-contraction; Electroencephalography; Gait; Knee osteoarthritis; Pain

PMID: [27568007](#)

56. ATHLETICS**LBP in young basketball players**

Clin J Sport Med. 2016 Sep;26(5):376-80. doi: 10.1097/JSM.0000000000000263.

Low Back Pain in Young Basketball and Floorball Players.

Pasanen K¹, Rossi M, Parkkari J, Kannus P, Heinonen A, Tokola K, Myklebust G.

OBJECTIVE:

The aim of the study was to investigate the prevalence and risk factors of low back pain (LBP) in young female and male basketball and floorball players.

DESIGN:

Cross-sectional study.

SETTING:

Nine basketball teams and 9 floorball teams from Tampere city district, Finland.

PARTICIPANTS:

Four hundred one young female and male players (mean age: 15.8 ± 1.9 years).

ASSESSMENT OF RISK FACTORS:

Age, gender, sport, and family history of musculoskeletal disorders were assessed as risk factors for LBP. Adjustment was made on team level to avoid random effects associated with a team.

MAIN OUTCOME MEASURES:

Information of players' background factors and LBP episodes was collected by a structured questionnaire.

RESULTS:

Forty-four percentage of the basketball players and 62% of floorball players had suffered from LBP during the previous 12 months. Prevalence of LBP during the previous year was significantly higher among floorball players ($P = 0.001$). In both sports, prevalence of pain symptoms was the highest during the competitive playing season. Family history of musculoskeletal disorders [OR (odds ratio), 2.02, 95% confidence interval (CI), 1.22-3.34] and higher age (OR, 1.22, 95% CI, 1.05-1.41) were associated with LBP in players.

CONCLUSIONS:

The study attested that LBP is a relatively common complaint in young team sport players. Targeted measures to examine causes, risk factors, and prevention of LBP in youth sports are needed.

PMID: [26513389](#)

NFL return to play after surgery

NFL players' careers most affected by surgery to patellar tendon, Achilles tendon and ACL

Northwestern Medicine News, 09/08/2016

Study examines impact of common orthopaedic procedures on football careers.

Orthopaedic surgeries are often required to manage player injuries, but until recently little information was available to assess the effect these procedures may have on players' future performance and career trajectory.

To better understand surgery's impact, Northwestern Medicine researchers created the NFL Orthopaedic Surgery Outcomes Database (NO-SOD), a comprehensive injury database that compares return-to-play rates (RTP) and performance-based outcomes in NFL players who had orthopaedic surgery. Analyzing data from the NO-SOD, the Northwestern Medicine researchers published a study in the American Journal of Sports Medicine that finds that players who undergo surgical procedures for tendon injuries experience a worse career trajectory than players who have surgery to fix fractures and sports hernia. Patellar tendon repair has the greatest effect on NFL careers, with anterior cruciate ligament repair (ACLR) and Achilles tendon repair also having a strong impact on players' careers. Hsu and his team created the NO-SOD using team injury reports and other public records, including newspaper archives, player profiles and press releases, over a 10-year time period to identify NFL athletes who had orthopaedic surgeries. They then developed performance-based outcome measures based on preoperative and postoperative statistics including games played, games started, seasons played and performance score. A total of 559 athletes were included in the database, with nearly 80 percent returning to play after an orthopaedic procedure. The researchers found that players who had knee surgeries experienced the most significant decline in performance. Athletes who had surgery to repair the patellar tendon, the tendon connecting the knee bone to the shin, fared the worst with respect to the RTP rate, career length after surgery, games played and performance at one year, two years and three years after surgery. Players had a RTP rate of only 50 percent after patellar tendon repair, which was significantly lower compared to all other procedures analyzed. After ACLR, players experience significant declines in statistical performance even three seasons after their injury.

Athletes who underwent Achilles tendon repair fared slightly better than those who required knee procedures. While they experienced longer recovery periods and decreases in games played and performance the first season after surgery, these players were able to return to baseline performance two and three seasons after surgery. Procedures for traumatic bony fractures and sports hernia lead to the best postoperative outcomes with RTP rates of more than 90 percent.

59. PAIN

Central sensitization

Pain Manag Nurs. 2016 Aug 20. pii: S1524-9042(16)30044-3. doi: 10.1016/j.pmn.2016.05.008.

Central Sensitization in Functional Chronic Pain Syndromes: Overview and Clinical Application.

Bettini L¹, Moore K².

The purpose of this review and clinical application article is to offer nurses up-to-date knowledge on peripheral and central sensitization in chronic functional pain syndromes, and to discuss therapies that have shown efficacy in treating various aspects of these disorders.

Central sensitization is a result of changes in the peripheral and central nervous system due to noxious stimuli, such as illness or trauma. Once these changes occur, treatment for the associated syndromes requires a multimodal approach that includes behavioral pain psychology, physical therapy, and pharmacological agents that specifically target neuroinflammation, pain modulation, and amplification of pain pathways. More research needs to be conducted on the basis and patient perception of functional pain syndromes to reduce the morbidity and significant disability associated with these illnesses.

Nurses have the opportunity to be at the forefront of this research because of their holistic and multidimensional approach to patient care, assessment, and symptom management.

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PMID: [27553129](#)

61. FIBROMYALGIA

Three subgroups

Clin J Pain. 2016 Oct;32(10):829-40. doi: 10.1097/AJP.0000000000000336.

Functional Status, Quality of Life, and Costs Associated With Fibromyalgia Subgroups: A Latent Profile Analysis.

Luciano JV¹, Forero CG, Cerdà-Lafont M, Peñarrubia-María MT, Fernández-Vergel R, Cuesta-Vargas AI, Ruíz JM, Rozadilla-Sacanell A, Sirvent-Alierta E, Santo-Panero P, García-Campayo J, Serrano-Blanco A, Pérez-Aranda A, Rubio-Valera M.

OBJECTIVES:

Although fibromyalgia syndrome (FM) is considered a heterogeneous condition, there is no generally accepted subgroup typology. We used hierarchical cluster analysis and latent profile analysis to replicate Giesecke's classification in Spanish FM patients. The second aim was to examine whether the subgroups differed in sociodemographic characteristics, functional status, quality of life, and in direct and indirect costs.

MATERIALS AND METHODS:

A total of 160 FM patients completed the following measures for cluster derivation: the Center for Epidemiological Studies-Depression Scale, the Trait Anxiety Inventory, the Pain Catastrophizing Scale, and the Control over Pain subscale. Pain threshold was measured with a sphygmomanometer. In addition, the Fibromyalgia Impact Questionnaire-Revised, the EuroQoL-5D-3L, and the Client Service Receipt Inventory were administered for cluster validation.

RESULTS:

Two distinct clusters were identified using hierarchical cluster analysis ("hypersensitive" group, 69.8% and "functional" group, 30.2%). In contrast, the latent profile analysis goodness-of-fit indices supported the existence of 3 FM patient profiles: (1) a "functional" profile (28.1%) defined as moderate tenderness, distress, and pain catastrophizing; (2) a "dysfunctional" profile (45.6%) defined by elevated tenderness, distress, and pain catastrophizing; and (3) a "highly dysfunctional and distressed" profile (26.3%) characterized by elevated tenderness and extremely high distress and catastrophizing. We did not find significant differences in sociodemographic characteristics between the 2 clusters or among the 3 profiles. The functional profile was associated with less impairment, greater quality of life, and lower health care costs.

DISCUSSION:

We identified 3 distinct profiles which accounted for the heterogeneity of FM patients. Our findings might help to design tailored interventions for FM patients