

2. LBP

High impact chronic pain

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Exploring the Prevalence and Construct Validity of High-Impact Chronic Pain Across Chronic Low-Back Pain Study Samples.

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BACKGROUND CONTEXT:

The US National Pain Strategy focused attention on high-impact chronic pain and its restrictions. Although many interventions have been studied for chronic low-back pain, results are typically reported for heterogeneous samples. To better understand chronic pain and target interventions to those who most need care, more granular classifications recognizing chronic pain's impact are needed.

PURPOSE:

To test whether chronic pain impact levels can be identified in chronic low-back pain clinical trial samples, examine the baseline patient mix across studies, and evaluate the construct validity of high-impact chronic pain.

STUDY DESIGN/SETTING:

Descriptive analyses using twelve large study datasets.

PATIENT SAMPLES:

Chronic low-back pain patients in non-surgical, non-pharmacologic trials in the US, Canada and UK.

OUTCOME MEASURES:

Preference-based health utilities from the SF-6D and EQ-5D, employment status and absenteeism.

METHODS:

We used two logistic regression models to predict whether patients had high-impact chronic pain and whether the remainder had low- or moderate-impact chronic pain. We developed these models using two datasets. Models with the best predictive power were used to impute impact levels for six other datasets. Stratified by these estimated chronic pain impact levels, we characterized the case mix of patients at baseline in each dataset, and summarized their health-utilities, and work productivity. This study was funded by a National Center for Complementary and Integrative Medicine grant. The authors have no potential conflicts of interest.

RESULTS:

The logistic models had excellent predictive power to identify those with high-impact chronic pain. Although studies were all of chronic low-back pain patients, the baseline mix of patients varied widely. Across all datasets, utilities and productivity were similar for those with high-impact chronic pain and worsened as chronic pain impact increased.

CONCLUSIONS:

There is a need to better categorize chronic pain patients to allow the targeting of optimal interventions for those with each level of chronic pain impact.

5. SPINAL SURGERY

Leg pain early surgery is the best

Increasing reoperation rates and inferior outcome with prolonged symptom duration in lumbar disc herniation surgery - A prospective cohort study

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DOI: <https://doi.org/10.1016/j.spinee.2019.04.001>

Background Context Lumbar disc herniation (LDH) is associated with great morbidity and significant socioeconomic impact in many parts of the world. Studies have shown that most LDH can be treated effectively with nonoperative management. However, for some patients in whom pain and disability are unacceptable, surgical intervention provides effective clinical relief. Currently there is little consensus in the medical community on the timing of surgery for patients suffering from radicular pain due to LDH. Multiple studies suggest that prolonged symptom duration adversely affects clinical outcome.

Purpose The aim of this study is to evaluate if prolonged symptom duration is correlated with less favorable outcome following surgery for LDH.

Study Design/Setting Consecutive series of patients from a single-center, multi-surgeon, tertiary spine practice.

Patient Sample Consecutive series of patients who underwent surgery for lumbar disc herniation.

Outcome Measures Oswestry Disability Index (ODI), EuroQol-5D (EQ-5D) and Visual Analog Scale (VAS) for back and leg pain (0 to 100).

Methods

Patients with a first episode LDH were included. Data were prospectively collected in DaneSpine, the Danish National Spine Registry. Subjects were divided into three groups based on their preoperative self-reported duration of leg pain: <3-months, 3-12 months and >12-months. Associations between patient-reported outcomes (PROs), perioperative complications and duration of symptoms were evaluated. Statistical significance level was set at p-value <0.01.

Results

There were 2,144 patients included in the study, with complete one-year follow-up on 1,694 patients (79%) and a reoperation rate of 8.4%. Incidence of surgical complications, specifically dural tears, was higher with increasing duration of leg pain, however, this did not reach statistical significance (p=0.039). Prolonged preoperative symptoms adversely influenced all PROs (EQ-5D, ODI, VAS) one year after surgery (p=0.001). Furthermore, reoperation rates increased with longer duration of preoperative symptoms. A statistically significant trend (p=0.008) of increasing incidence of reoperation was found with increasing length of symptom duration.

Conclusions

Delayed surgical intervention results in inferior outcomes and increased reoperation rates. Patients who had surgery within the first 3 months of leg pain achieved significantly better outcome one year after surgery when compared to the other groups.

7. PELVIC ORGANS/WOMAN'S HEALTH**Importance of adequate Vit D during first trimester****Vitamin D Status during Pregnancy and the Risk of Gestational Diabetes Mellitus—A Longitudinal Study in a Multiracial Cohort**

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Diabetes 2018 Jul; 67(Supplement 1): -.<https://doi.org/10.2337/db18-1437-P>

Background: Emerging evidence suggests that vitamin D status in pregnancy may be associated with the development of gestational diabetes (GDM). However, the temporal relationship remains unclear due to the lack of prospective data with serial measurements of maternal vitamin D levels. We prospectively examined longitudinal changes in vitamin D biomarkers in relation to subsequent GDM risk.

Methods: A nested case-control study of 107 GDM cases and 214 controls (matched on age, race/ethnicity, and gestational week (GW) at blood draw) was conducted within the NICHD Fetal Growth Studies-Singleton Cohort (2009-2013). Plasma concentrations of D2 and D3 25-hydroxyvitamin D (25(OH)D) and vitamin D binding protein were measured at GWs 10-14, 15-26, 23-31, and 33-39; we further calculated total, free, and bioavailable 25(OH)D. Linear mixed-effects models and conditional logistic regression models were used adjusting for confounders.

Results: Compared with controls, women who developed GDM appeared to have lower concentrations of total 25(OH)D as early as GWs 10-14 (median: 25.59 vs. 27.46 ng/mL) and had a greater longitudinal increase in total 25(OH)D levels from GWs 10-14 to 15-26 (LS mean difference in log-scale: 0.10 vs. 0.04, $p=0.046$). We found no linear associations between vitamin D biomarkers at GWs 10-14 or GWs 15-26 and GDM risk. However, vitamin D deficiency (<20 ng/mL) at GWs 10-14 was associated with a 2.82-fold increased GDM risk (adjusted OR=2.82, 95% CI: 1.15-6.93). Furthermore, women with persistent vitamin D deficiency at both weeks 10-14 and weeks 15-26 had more than 4-fold elevated risk for GDM compared to those persistently non-deficient (adjusted OR=4.46, 95% CI: 1.15-17.3).

Conclusions: Our findings suggest that maternal vitamin D deficiency in the first trimester of pregnancy may be implicated in the development of GDM. Assessment of vitamin D status in early pregnancy may be clinically important and valuable for the primary prevention of GDM.

Breech and changes in bone strength

Osteoporosis International pp 1–10|

Breech presentation is associated with lower adolescent tibial bone strength

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Summary

We compared bone outcomes in adolescents with breech and cephalic presentation. Tibia bone mineral content, density, periosteal circumference, and cross-sectional moment of inertia were lower in breech presentation, and females with breech presentation had lower hip CSA. These findings suggest that prenatal loading may exert long-lasting influences on skeletal development.

Introduction

Breech position during pregnancy is associated with reduced range of fetal movement, and with lower limb joint stresses. Breech presentation at birth is associated with lower neonatal bone mineral content (BMC) and area, but it is unknown whether these associations persist into later life.

Methods

We examined associations between presentation at onset of labor, and tibia and hip bone outcomes at age 17 years in 1971 participants (1062 females) from a UK prospective birth cohort that recruited > 15,000 pregnant women in 1991–1992. Cortical BMC, cross-sectional area (CSA) and bone mineral density (BMD), periosteal circumference, and cross-sectional moment of inertia (CSMI) were measured by peripheral quantitative computed tomography (pQCT) at 50% tibia length. Total hip BMC, bone area, BMD, and CSMI were measured by dual-energy X-ray absorptiometry (DXA).

Results

In models adjusted for sex, age, maternal education, smoking, parity, and age, singleton/multiple births, breech presentation ($n = 102$) was associated with lower tibial cortical BMC (-0.14 SD, 95% CI -0.29 to 0.00), CSA (-0.12 SD, -0.26 to 0.02), BMD (-0.16 SD, -0.31 to -0.01), periosteal circumference (-0.14 SD, -0.27 to -0.01), and CSMI (-0.11 SD, -0.24 to 0.01). In females only, breech presentation was associated with lower hip CSA (-0.24 SD, -0.43 to 0.00) but not with other hip outcomes. Additional adjustment for potential mediators (delivery method, birthweight, gestational age, childhood motor competence and adolescent height and body composition) did not substantially affect associations with either tibia or hip outcomes.

Conclusions

These findings suggest that prenatal skeletal loading may exert long-lasting influences on skeletal size and strength but require replication.

Use of herbal medicines not recommended during pregnancy**Herbal Medicinal Product Use During Pregnancy and the Postnatal Period
A Systematic Review**

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Obstetrics & Gynecology: May 2019 - Volume 133 - Issue 5 - p 920–932
doi: 10.1097/AOG.0000000000003217

OBJECTIVE: To report the incidence and nature of herbal medicinal products' adverse events and herb–drug interactions used by some pregnant and postnatal women.

DATA SOURCES: The Allied and Complementary Medicine Database, the Cumulative Index to Nursing and Allied Health Literature, EMBASE, the Cochrane Library, MEDLINE, Scopus, Web of Science, and ClinicalTrials.gov were searched from inception until August 2018.

METHODS OF STUDY SELECTION: Any studies reporting adverse events, herb–drug interactions or absence thereof associated with herbal medicinal products used during pregnancy or the postnatal period were included. Conference abstracts, pilot studies, and nonhuman studies were excluded. All included studies were critically appraised by two independent reviewers.

TABULATION, INTEGRATION AND RESULTS: Database searches retrieved 3,487 citations. After duplicate removal and review of titles, abstracts, and full-text, 115 articles were critically appraised. After excluding irrelevant and low-quality articles, 74 articles were included for data extraction and synthesis. Adverse drug reactions, congenital malformations, fetal growth retardation or herb–drug interactions were the primary study objective reported by 19 of the 74 included studies, 16 cohort studies, one cross-sectional survey, and two randomized controlled trials. A total of 47 herbal medicinal products and 1,067,071 women were included in this review. Use of almond oil was associated with preterm birth (odds ratio 2.09, 95% CI 1.07–4.08), oral raspberry leaf was associated with cesarean delivery (adjusted odds ratio [AOR] 3.47, 95% CI 1.45–8.28); heavy licorice use was associated with early preterm birth by 3.07-fold (95% CI 1.17–8.05). African herbal medicine mwanaphepo was associated with maternal morbidity (AOR 1.28; 95% CI 1.09–1.50), and neonatal death or morbidity. Fourteen studies reported absence of adverse events. Four studies reported herb–drug interactions, but none studied adverse events arising from them.

CONCLUSION: The use of herbal medicinal products during pregnancy and the postnatal period should be discouraged until robust evidence of safety is available.

8. VISCERA

FMT results

Gastroenterology. 2019 Apr;156(5):1440-1454.e2. doi: 10.1053/j.gastro.2018.12.001. Epub 2018 Dec 6.

Specific Bacteria and Metabolites Associated With Response to Fecal Microbiota Transplantation in Patients With Ulcerative Colitis.

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BACKGROUND & AIMS:

Fecal microbiota transplantation (FMT) can induce remission in patients with ulcerative colitis (UC). In a randomized controlled trial of FMT in patients with active UC, we aimed to identify bacterial taxonomic and functional factors associated with response to therapy.

METHODS:

We performed a double-blind trial of 81 patients with active UC randomly assigned to groups that received an initial colonoscopic infusion and then intensive multidonor FMT or placebo enemas, 5 d/wk for 8 weeks. Patients in the FMT group received blended homogenized stool from 3-7 unrelated donors. Patients in the placebo group were eligible to receive open-label FMT after the double-blind study period. We collected 314 fecal samples from the patients at screening, every 4 weeks during treatment, and 8 weeks after the blinded or open-label FMT therapy. We also collected 160 large-bowel biopsy samples from the patients at study entry, at completion of 8 weeks of blinded therapy, and at the end of open-label FMT, if applicable. We analyzed 105 fecal samples from the 14 individual donors (n = 55), who in turn contributed to 21 multidonor batches (n = 50). Bacteria in colonic and fecal samples were analyzed by both 16S ribosomal RNA gene and transcript amplicon sequencing; 285 fecal samples were analyzed by shotgun metagenomics, and 60 fecal samples were analyzed for metabolome features.

RESULTS:

FMT increased microbial diversity and altered composition, based on analyses of colon and fecal samples collected before vs after FMT. Diversity was greater in fecal and colon samples collected before and after FMT treatment from patients who achieved remission compared with patients who did not. Patients in remission after FMT had enrichment of *Eubacterium hallii* and *Roseburia inulivorans* compared with patients who did not achieve remission after FMT and had increased levels of short-chain fatty acid biosynthesis and secondary bile acids. Patients who did not achieve remission had enrichment of *Fusobacterium gonidiaformans*, *Sutterella wadsworthensis*, and *Escherichia* species and increased levels of heme and lipopolysaccharide biosynthesis. *Bacteroides* in donor stool were associated with remission in patients receiving FMT, and *Streptococcus* species in donor stool was associated with no response to FMT.

CONCLUSIONS:

In an analysis of fecal and colonic mucosa samples from patients receiving FMT for active UC and stool samples from donors, we associated specific bacteria and metabolic pathways with induction of remission. These findings may be of value in the design of microbe-based therapies for UC. ClinicalTrials.gov, Number [NCT01896635](https://clinicaltrials.gov/ct2/show/study/NCT01896635).

10 A. CERVICAL SPINE**Prognosis missing****Prognostic factors for persistent pain after a first episode of nonspecific idiopathic, non-traumatic neck pain: A systematic review**Martine Verwoerd^{1a,*} Harriet Wittink^a Francois Maissan^a Edwin de Raaij^a Rob J.E.M. Smeets^bDOI: <https://doi.org/10.1016/j.msksp.2019.03.009>**Highlights**

- •The focus in health care must be on the prevention of chronic neck pain.
- •Only low to very low quality evidence was found for prognostic factors.
- •There is much need for a comprehensive cohort study on prognostic factors.
- •Special attention must be given to modifiable prognostic factors in research.

Background

Prognosis of acute idiopathic neck pain is poor. An overview of modifiable and non-modifiable prognostic factors for the development of chronic musculoskeletal neck pain after an episode of idiopathic, non-traumatic neck pain is needed.

Objective

Identify prognostic factors for pain intensity and perceived non-recovery at three, six and 12 months after a first episode of idiopathic, non-traumatic neck pain.

Study design

Systematic review

Methods

Systematic literature search up to October 21, 2017 for prospective prognostic studies with main outcomes perceived non-recovery and pain intensity. The QUIPS was used for quality assessment.

Results

Out of 2737 screened articles six prospective studies with high-risk-of-bias were identified, analyzing 47 and 43 factors for the outcome variables ‘pain intensity’ and ‘perceived non-recovery’, respectively. Based on univariate- and multivariate analyses we found moderate evidence for ‘age > 40 years’ and ‘concomitant back pain’ to be prognostic for ‘pain intensity’. For the outcome ‘perceived non-recovery’ at 12 months, we found moderate evidence for both ‘a previous period of neck pain’ and ‘accompanying headache’ as prognostic variables for persistent pain, based on univariate analysis. No prognostic factor was found which was retained in more than one multivariate analysis for the outcome variable ‘perceived non-recovery’. However, the quality of the evidence for these prognostic factors was low to very low.

Conclusion

This review identifies prognostic factors for neck pain, of which only a few are modifiable. Further research is needed before drawing definite conclusions about the prognostic value of these factors.

Force perception**Higher variability in cervical force perception in people with neck pain**

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DOI: <https://doi.org/10.1016/j.msksp.2019.04.001>

Highlights

- •Higher variability in force generation perception in participants with neck pain.
- •Potentially this might suggest impaired force sense.
- •Reduced force sense may affect functional activities requiring precision.

Abstract**Background**

A reduced capacity to generate and sustain cervical muscle force over a range of contraction intensities is a feature of some participants with neck pain. To date there have been no studies comparing the accuracy of force perception in participants with and without neck pain.

Design

Cross-sectional observational study.

Methods

Participants with (n = 25) and without (n = 25) neck pain performed isometric muscle contractions at three progressive self-perceived (no feedback provided) intensities (10, 25, 50) % of their maximal voluntary contraction (MVC) in cervical: flexion, extension, right and left lateral flexion. Absolute error (AE), constant error (CE), and variable error (VE) between actual and targeted force values were calculated.

Results

The neck pain group had: (1) AE-combined direction -significantly higher at 10% and lower at 50% ($p < 0.05$); (2) significantly lower CE in most measures ($p < 0.05$); (3) higher mean VE in all measures, with 10, 25, and 50% combined direction and overall combined % extension significantly higher ($p < 0.05$).

Conclusions

Findings indicate higher variability in force generation perception across all directions and intensities in participants with neck pain compared to healthy controls. Potentially this greater variability might suggest impaired force sense, a construct of proprioception in participants with neck pain. Reduced force sense may have implications for participants with neck pain during functional activities requiring precision and may need to be trained. Further research is required.

12 B. CERVICAL SURGERIES

Risk factors for surgery

Prevalence and risk factors of axial neck pain in patients undergoing multilevel anterior cervical decompression with fusion surgery

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Journal of Orthopaedic Surgery and Research 2019;14:94

<https://doi.org/10.1186/s13018-019-1132-y>

Objectives

The aim of this study was to explore the prevalence and risk factors for axial neck pain in patients undergoing multilevel anterior cervical decompression with fusion surgery.

Methods

In this study, 88 patients, who underwent multilevel anterior cervical decompression with fusion surgery from January 2012 to January 2017, were retrospectively reviewed. Based on the postoperative axial neck pain, the patients were classified into two groups: axial pain group and no axial pain group. The patients were followed up 3 weeks, 3 months, and 1 year after cervical anterior surgery for the early- and long-term clinical evaluation. The possible effect factors included demographic variables (age, sex, BMI, smoking, drinking, heart disease, hypertension, diabetes, preoperative kyphosis, preoperative axial neck pain, preoperative JOA scores, and ODI) and surgery-related variables (surgical option, vertebral lesions, spinal canal stenosis rate, superior fusion segment, presence of intramedullary high signal intensity).

Results

The prevalence of axial neck pain was 27.3% (24 cases of 88). Our results showed that preoperative axial neck pain (62% vs 23%, $P < 0.001$) and preoperative kyphosis (42% vs 21.9%, $P < 0.001$) were risk factors for axial pain after multilevel anterior cervical surgery. Additionally, for patients with preoperative cervical kyphosis, compared to no axial pain group, the axial neck group was significantly more likely to exist a higher preoperative angle of C2–7 (13.31 ± 2.33 vs 7.33 ± 2.56 , $P < 0.001$) and a higher correction range for kyphosis (20.24 ± 4.12 vs 12.34 ± 3.12 , $P < 0.001$). However, for all the patients with postoperative axial symptoms, the improvement rate of axial pain was significantly higher for patients without cervical kyphosis at the early-term follow-up (3 weeks) ($P = 0.032$), no significant differences were found at the medium-term ($P = 0.554$) and long-term follow-up ($P = 0.902$), and improvements of clinical symptom have no obvious difference at the last follow-up.

Conclusions

Overall, preoperative axial neck pain and kyphosis could predict axial neck pain for patients undergoing multilevel anterior cervical decompression with fusion surgery, and recovery of cervical kyphosis may contribute to the long-term recovery of neural function, but may also suffer from risk of short-term axial pain, which could be reduced through moderate cervical curvature recovery.

13 B. TMJ/ORAL**Vit. D and inflammation**

Oral Dis. 2019 Mar 26. doi: 10.1111/odi.13097.

The influence of vitamin D supplementation on local and systemic inflammatory markers in periodontitis patients: A pilot study.

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OBJECTIVES:

Vitamin D deficiency/insufficiency is a worldwide public health issue that has been linked to numerous inflammatory disorders, including periodontitis. There is increasing support for a role for adequate vitamin D levels in overall health. Populations with darker skin color have a higher prevalence of vitamin D deficiency/insufficiency and periodontitis. The purpose of this small pilot study was to investigate the influence of 12 weeks of 25(OH)D vitamin D supplementation (VDS) on mediators of systemic inflammation in dark-skinned, periodontitis patients.

MATERIALS AND METHODS:

A total of 23 patients with moderate to severe periodontitis were randomly assigned to the vitamin D group or placebo group and received intensive single visit scaling and root planning to elicit a systemic inflammatory response.

RESULTS:

Vitamin D supplementation increased serum 25(OH)D levels approximately 2-fold over baseline levels; moreover, VDS group had reduced peripheral blood CD3 and CD3+CD8⁺ cytotoxic T lymphocyte (CTLs) counts and reduced pro-inflammatory salivary cytokines. In contrast, VDS group had higher levels of the autophagy-related proteins and other proteins crucial for anti-microbial autophagy in whole blood PBMCs.

CONCLUSION:

In conclusion, VDS has multiple benefits for reducing systemic inflammation and promoting induction of autophagy-related proteins related to anti-microbial functions

13 D. SLEEP**Sleep duration in cognitive impairment**

J Sleep Res. 2019 Apr 21:e12864. doi: 10.1111/jsr.12864.

Associations between sleep duration and cognitive impairment in mild cognitive impairment.

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The prevalence of mild cognitive impairment (MCI) increases among elderly people and is associated with a high risk of dementia. Identifying factors that may contribute to the progress of MCI to dementia is critical.

The objective of this study was to examine the association of objective sleep with cognitive performance in MCI patients.

A subsample of 271 participants with a diagnosis of probable Alzheimer's disease (AD; N = 50) or mild cognitive impairment (MCI; N = 121) and 100 persons who were not cognitively impaired (NI) were recruited from a large population-based cohort in the island of Crete, Greece (3140 older adults aged >60 years). All participants underwent extensive neuropsychiatric/neuropsychological evaluation and a 3-day 24-hr actigraphy. Objective sleep variables and their association with neuropsychological performance were examined across the three groups, controlling for demographics, body mass index, depression, sleep apnea symptoms and psychotropic medications.

Patients with AD had significantly longer 24-hr total sleep time (TST) compared to the MCI and NI groups. Long 24-hr TST was associated with reduced performance on tasks that placed significant demands on attention and processing speed in the MCI group and the AD group. Elderly patients with MCI have similar objective sleep duration to normal controls, whereas AD patients sleep longer. Long sleep duration in patients with multidomain subtypes of MCI is associated with critical non-memory cognitive domains.

It appears that within the MCI group those that sleep longer have more severe cognitive impairment.

Sleep in females

Female sleep patterns, shift work, and fecundability in a North American preconception cohort study

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DOI: <https://doi.org/10.1016/j.fertnstert.2019.01.037>

Objective To prospectively evaluate the association between female sleep patterns, shift work, and fecundability.

Design Web-based preconception cohort study, Pregnancy Study Online (PRESTO).

Setting Not applicable.

Patient(s) North American Women aged 21–45 years attempting pregnancy.

Intervention(s) Not applicable.

Main Outcome Measure(s) At baseline, self-reported average sleep duration per 24-hour period in the previous month, the frequency of trouble sleeping within the last 2 weeks (as measured by the Major Depression Inventory), and shift work patterns. Pregnancy status determined by follow-up questionnaires completed every 8 weeks for up to 12 months or until conception.

Result(s)

The analyses were restricted to 6,873 women attempting pregnancy for ≤ 6 months at enrollment from June 2013 through September 2018. We used proportional probabilities regression models to estimate fecundability ratios (FRs) and 95% confidence intervals (CIs), adjusting for potential confounders. Relative to 8 hours of sleep per day, FRs for <6 , 6, 7, and ≥ 9 hours of sleep/day were 0.89 (95% CI, 0.75–1.06), 0.95 (95% CI, 0.86–1.04), 0.99 (95% CI, 0.92–1.06), and 0.96 (95% CI, 0.84–1.10), respectively. Compared with no trouble sleeping, FRs for trouble sleeping $<50\%$ of the time or trouble sleeping $>50\%$ of the time were 0.93 (95% CI, 0.88–1.00) and 0.87 (95% CI, 0.79–0.95), respectively. The results were slightly stronger among women with higher depressive symptoms and perceived stress levels. There was no association between shift work and fecundability.

Conclusion(s)

Trouble sleeping at night was associated with modestly reduced fecundability. A weaker inverse association was observed between shorter sleep duration and fecundability.

14. HEADACHES

Central sensitization in migraines

Eur Neurol 2019;81:37–46 (DOI:10.1159/000499764)

Effects of Botulinum Toxin A on Allodynia in Chronic Migraine: An Observational Open-Label Two-Year Study

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Background: Onabotulinumtoxin A (OBT-A) is a treatment option for chronic migraine (CM), though the possible effect on central sensitization and allodynia is still unknown.

Aims: The present study aimed to evaluate (1) the long-term outcome of allodynia in a group of CM treated with OBT-A (2) if the presence and severity of allodynia could predict the long-term effect of OBT-A (3) if the improvement of allodynia, could contribute to the clinical efficacy of OBT-A.

Methods: This was an observational, open-label, cohort study conducted on 99 CM patients treated for 1 year and 44 patients treated for 2 years with periodic OBT-A 155–195 U injections. In basal condition (T0), after 1 year (T1) and 2 years (T2) treatment, allodynia, migraine disability, and headache frequency were the main variables. Anxiety, depression and sleep deprivation were also considered potentially correlated factors to allodynia.

Results: Allodynia decreased after 1 year (Student *t* test $p = 0.0001$), and decreased further after the second year of treatment ($p = 0.015$). There was a relationship between allodynia severity at T0 and reduced headache frequency change at T1 ($r = 0.22$) and T2 ($r = 0.37$). The effect of OBT-A on allodynia correlated with the reduction of MIDAS score after 1 year ($r = 0.4$) and 2 years ($r = 0.63$) of treatment.

Conclusions: OBT-A seems to have an effect on central sensitization, expressed by allodynia. This action could be exerted by modulating nociceptive transmission, and reducing the global burden of migraine. Patients with more severe allodynia display a limited long-term effect on headache frequency. The modulation of central sensitization could reduce migraine disability, in spite of the persistence of frequent headache.

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HA and vertigo**Migraine and episodic Vertigo: a cohort survey study of their relationship**

- Christian Lampl Alan Rapoport, Moris Levin and Elisabeth Bräutigam

<https://doi.org/10.1186/s10194-019-0991-2>

Background and aim

Migraine headache and vestibular-type vertigo co-occur in the general population about three times more often than expected by chance. Attacks of episodic vertigo (eV) are currently not recognized as migraine equivalents or variants in the International Classification of Headache Disorders, 3rd edition (ICHD III). No strong data exist about the prevalence of eV during the phases of a migraine attack. The aim of this study is to analyze the timing association between migraine-related episodic vertigo and the phases of migraine.

Methods

The “Migraine and Neck Pain Study” gathered data from nearly 500 adult participants in a questionnaire-based survey. In this prospective, follow-up study we re-analyzed patients with episodic migraine with and without aura who experienced eV anytime around their migraine attacks. For this we defined 3 different time periods.

Results

146/487 (30%) reported eV anytime during the migraine attack; 79/487 (16%) that noticed eV with the start of the headache, 51/487 (10%) within 2 h before the headache and 16/487 (3%) experienced eV 2–48 h before the headache, as a premonitory symptom. 130/487 (26.7%) of our patients can be diagnosed with vestibular or probable vestibular migraine supporting the clinical association of migraine and vertigo.

Conclusions

Our results seem to further support the concept that vertigo in migraine is best thought of as an integral manifestation of migraine, rather than a prodromal or aura symptom.

16. CONCUSSIONS

Reporting concussions

Relationship of athletic and academic identity to concussion reporting intentions

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 DOI: <https://doi.org/10.1016/j.msksp.2019.04.003>

Highlights

- •Reporting potential concussion symptoms an important health behavior.
- •Assessed two self-identity dimensions and three intention behaviors.
- •Athletic identity associated with lower likelihood of reporting symptoms.
- •Academic identity associated with greater likelihood of reporting symptoms.
- •Only academic identity associated with reporting on behalf of a teammate.

Abstract

Background

Understanding concussed athletes' motivations for reporting concussion symptoms is important for health care professionals who are charged with the care, management, and prevention of future injury.

Objectives

To examine if athletic and academic identity predict concussion symptom reporting intentions above and beyond traditional socio-cognitive predictors.

Design

Cross-sectional study using self-report measures during the 2016 collegiate football season.

Method

In a sample of National Collegiate Athletic Association (NCAA) Division I American football athletes (N = 205) we examined the relationship of athletic and academic identity with three indices of symptom reporting behavior: reporting during a game, reporting 24 h after a game, and reporting on behalf of a teammate. We used descriptive statistical analyses, correlations, and linear regression to examine hypotheses.

Results

Controlling for traditional predictors, athletic identity was associated with a lower likelihood to report symptoms during a game ($\beta = -0.22$, $t = -3.28$, $p < .001$) or within 24 h ($\beta = -0.28$, $t = -4.12$, $p < .001$). Academic identity was positively associated with reporting intentions during a game ($\beta = 0.12$, $t = 1.68$, $p < .05$), 24 h later ($\beta = 0.13$, $t = 1.85$, $p < .05$), and on behalf of a teammate ($\beta = 0.22$, $t = -3.36$, $p < .001$).

Conclusions

Athletic and academic identities offer additional insight into athletes' motivation for concussion symptom reporting intentions, above and beyond traditional socio-cognitive predictors. Discussion focuses on the benefit of incorporating these important self-identities into educational health interventions to improve their impact.

20 A. ROTATOR CUFF**PRP questionable results****Systematic Review****Nonoperative Treatment of Rotator Cuff Disease With Platelet-Rich Plasma: A Systematic Review of Randomized Controlled Trials**

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<https://doi.org/10.1016/j.arthro.2018.10.115> Get rights and content

Purpose

To perform a systematic review of randomized controlled trials on the use of platelet-rich plasma (PRP) for nonoperative treatment of rotator cuff disease.

Methods

Using Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, 2 reviewers independently screened the MEDLINE, Embase, and Cochrane Library databases for prospective, randomized controlled trials comparing PRP with a control in the nonoperative treatment of chronic rotator cuff disease for inclusion. Clinical data were extracted and evaluated. The quality of evidence was assessed using The Cochrane Collaboration risk-of-bias tool.

Results

Five randomized controlled trials met the inclusion criteria, with 108 patients treated with PRP and 106 treated with a control. The mean age was 53.7 years, and 61.6% of patients were female patients. All of the studies found that the groups receiving PRP injections experienced improved clinical outcomes at final follow-up compared with baseline. Two studies found that PRP resulted in improved outcomes, mostly pain scores, compared with a control. One study compared PRP with formal exercise versus a saline solution injection with formal exercise therapy. It showed no difference in clinical outcomes between PRP and a saline solution injection when formal exercise therapy was used. Two other studies reported that PRP alone resulted in inferior outcomes to control groups receiving formal exercise therapy.

Conclusions

The currently limited available evidence on PRP for nonoperative treatment of chronic rotator cuff disease suggests that in the short term, PRP injections may not be beneficial. When directly compared with exercise therapy, PRP does not result in superior functional outcomes, pain scores, or range of motion. However, interpretation of this literature is confounded by the lack of reporting of the cytology and characteristics of PRP.

30 A. HIP IMPINGEMENT**Psoas lengthening****Midterm Outcomes of Iliopsoas Fractional Lengthening for Internal Snapping as a Part of Hip Arthroscopy for Femoroacetabular Impingement and Labral Tear: A Matched Control Study**

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<https://doi.org/10.1016/j.arthro.2018.11.050> Get rights and content

Purpose

To report minimum 5-year outcomes and rate of painful snapping resolution for patients who underwent iliopsoas fractional lengthening (IFL) as a part of hip arthroscopy for femoroacetabular impingement (FAI) and labral tear. In addition, to match this group to a group of patients who underwent hip arthroscopy for FAI and labral tear without internal snapping.

Methods

Patients were eligible for inclusion if they underwent hip arthroscopy for treatment of FAI and labral tear with concomitant IFL for painful snapping and had preoperative baseline scores for modified Harris Hip Score, Nonarthritic Hip Score, Hip Outcome Score-Sports Subscale, and visual analog scale for pain. The exclusion criteria for this study were preoperative Tönnis grade >0, active workers' compensation claims, or previous ipsilateral hip conditions. These patients were matched to a control group of patients who did not have snapping or undergo IFL but who otherwise satisfied the same inclusion and exclusion criteria.

Results

There were 57 eligible cases (80.3% follow-up). Mean follow-up time was 69.3 months (from 60.0 to 91.9). All patient-reported outcomes measures demonstrated statistically significant improvements between preoperative and latest follow-up scores for the following measures ($P < .001$): modified Harris Hip Score (from 64.3 to 84.9), Nonarthritic Hip Score (from 61.7 to 85.2), Hip Outcome Score-Sports Subscale (from 47.0 to 75.0), and visual analog scale (from 6.5 to 2.2). Mean satisfaction was 8.1 out of 10. Painful snapping was resolved in 80.7% of cases. Ten hips (17.5%) required secondary arthroscopy at a mean of 30.5 months. Three hips (5.3%) required total hip arthroplasty at a mean of 57.5 months. One case (1.8%) had minor postoperative complications. There were no statistically significant differences between the groups in outcomes, complications, and secondary surgeries.

Conclusions

IFL as part of hip arthroscopy for treatment of FAI and labral tears demonstrated similar favorable improvement, complication rates, and secondary surgeries, when compared with a control group that did not undergo IFL.

Hip impingement and hamstring tears**Increased Prevalence of Femoroacetabular Impingement in Patients With Proximal Hamstring Tendon Injuries**

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Tigran Garabekyan, M.D.^e Vivek Chadayammuri, M.D.^f Omer Mei-Dan, M.D.^{b,*}

DOI: <https://doi.org/10.1016/j.arthro.2018.11.037>

Purpose

To determine the prevalence of clinically diagnosed femoroacetabular impingement (FAI) in a consecutive series of patients presenting with proximal hamstring tendon injury and to correlate this with pelvic anatomic factors.

Methods

The prevalence of clinically symptomatic cam-, pincer-, and mixed-type and overall FAI was calculated among a consecutive series of patients presenting to a hip preservation clinic with a confirmed clinical and radiographic diagnosis of proximal hamstring tendon injury between 2012 and 2017. The presence of a cam lesion was determined by an alpha angle $> 50^\circ$ on radiographs and computed tomography radial sequences of the head-neck junction and a femoral head-neck offset ratio < 0.18 . Clinical diagnoses of osseous impingement were determined according to accepted pathomorphologic signs and measurements. A diagnosis of FAI was confirmed by imaging findings of acetabular overcoverage for pincer-type FAI and the presence of an anterior or lateral cam lesion for cam-type FAI.

Results

Overall, 120 hips in 97 patients (mean age, 45 years) were included in this study. A clinical diagnosis of FAI was noted in 70.8% of hips (pincer-type 9.2%, cam-type 40.8%, mixed-type 20.8%), an approximate 2- to 7-fold increased prevalence in comparison with the general population from prior studies.

Conclusions

The prevalence of FAI is high in patients with symptomatic proximal hamstring tendon pathology. Because FAI results in restriction of hip range of motion and altered pelvic tilt, future studies are warranted to investigate whether the presence of FAI acts as a predisposing factor for injury to the hamstring muscle complex.

30 B. HIP LABRUM**Age related results****Arthroscopic Acetabular Labral Repair in Patients Over the Age of 60 Years: A Matched Case-Control Study**

J.W. Thomas Byrd, M.D.* Kay S. Jones, M.S.N., R.N.
DOI: <https://doi.org/10.1016/j.arthro.2018.11.015>

Purpose

To report the results of labral repair in a population of patients older than 60 years and compare these with a matched population of younger adults.

Methods

We compared 21 consecutive patients older than 60 years undergoing labral repair with minimum 1-year follow-up with a contemporaneous group of 21 patients aged 18 to 55 years matched for sex, degree of chondral damage, and associated femoroacetabular impingement or dysplasia.

Results

Follow-up averaged 18.9 months (range, 12-24 months). The average age in the study group was 63.2 years (range, 61-71 years), and 20 patients had femoroacetabular impingement whereas 1 had dysplasia. Of these patients, 19 had acetabular articular damage (grade IV in 2, grade III in 11, grade II in 5, and grade I in 1) and 6 had femoral changes (grade IV in 1 and grade III in 5). The average age in the control group was 35.8 years (range, 20-54 years). We found average improvements of 28.1 points for the modified Harris Hip Score and 37.5 points for the International Hip Outcome Tool score within the study group and 21.2 points for the modified Harris Hip Score and 37.1 points for the International Hip Outcome Tool score within the control group. No statistically significant difference between the 2 groups was noted in the amount of improvement, with statistically and clinically significant improvements noted in both. Two study group patients underwent total hip arthroplasty (THA) at an average of 10 months, with 1 control group THA at 11 months. All 3 patients with conversion to THA had combined grade IV acetabular and grade III femoral damage. No repeated arthroscopies were performed and no complications occurred in either group.

Conclusions

Patients older than 60 years can benefit from arthroscopic labral repair with improved outcomes, a modest rate of conversion to THA, and a small risk of complications. The results are comparable to those of younger adults. Combined bipolar grade IV and grade III articular damage may be a harbinger of conversion to THA regardless of age.

33. MENISCUS

40 years and older failure rate

Age of 40 Years or Older Does Not Affect Meniscal Repair Failure Risk at 5 Years

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DOI: <https://doi.org/10.1016/j.arthro.2018.11.061>

Purpose

To compare meniscal repair failure rates in patients aged 40 years or older versus patients younger than 40 years.

Methods

A total of 276 patients underwent meniscal repair surgery by a single sports medicine fellowship-trained surgeon between 2006 and 2012 and were eligible for study inclusion. Patients were followed up for meniscal repair failure, defined as meniscectomy, repeated meniscal repair, or total knee arthroplasty. Logistic regression analysis was used to determine the risk of failure while controlling for potential confounding variables including body mass index, sex, anterior cruciate ligament status, time from injury to surgery, number of implants used, tear pattern, and chondral status at the time of the repair.

Results

Among the 276 eligible patients, 221 (80%) were successfully contacted for follow-up at an average of 5 years after surgery. Of these patients, 56 were aged 40 years or older (mean, 47.2 years; standard deviation [SD], 5.3 years) and 165 were younger than 40 years (mean, 24.7 years; SD, 6.7 years). The overall meniscal repair failure rate over a 5-year period was 20%. Among patients aged 40 years or older, the failure risk was 18% versus 21% in patients younger than 40 years. After adjustment for confounding variables, age of 40 years or older was not associated with increased failure risk (adjusted odds ratio, 0.83; 95% confidence interval, 0.36-1.81; $P = .65$). The mean time to failure tended to be shorter in older patients, at 16.9 months (SD, 10.2 months) versus 28.5 months in the group younger than 40 years (SD, 23.3 months) ($P = .04$).

Conclusions

Age of 40 years or older is not associated with an increased risk of meniscal repair failure at 5 years, although a shorter time to failure was noted in this age cohort.

37. OSTEOARTHRITIS/KNEE**MRI changes with tears**

Arthritis Care Res (Hoboken). 2019 Apr 1. doi: 10.1002/acr.23891.

Early MRI-based Changes in Patients with Meniscal Tear and Osteoarthritis.

Collins JE^{1,2}, Losina E^{1,2}, Marx RG³, Guermazi A⁴, Jarraya M^{4,5}, Jones MH⁶, Levy BA⁷, Mandl LA³, Martin SD⁸, Wright RW⁹, Spindler KP⁶, Katz JN^{1,2}; MeTeOR Investigator Group.

OBJECTIVE:

To evaluate changes in knee MRI findings over the course of 18 months in subjects with osteoarthritic change (OA) and meniscal tear (MT) treated with arthroscopic partial meniscectomy (APM) or non-operatively with physical therapy (PT).

METHODS:

We used 18-month follow up data from the Meniscal Tear in Osteoarthritis Research (MeTeOR) Trial. MRIs were read using the MRI OA Knee Score (MOAKS). We focused on 18-month change in bone marrow lesions (BMLs), cartilage thickness, cartilage surface area, osteophytes size, effusion-synovitis, and Hoffa-synovitis. We used multinomial logistic regression to assess associations between MRI-based changes in each feature and treatment type.

RESULTS:

351 subjects were randomized and 225 had both baseline and 18-month MRI. In both treatment groups, patients experienced substantial changes in several MRI-based markers. In 60% of the APM group, vs. 33% of the PT group, cartilage surface area damage advanced in ≥ 2 subregions (adjusted odds ratio (OR) 4.2 (95% CI 2.0, 9.0)). Patients who underwent APM also had greater advancement in scores for osteophytes and effusion-synovitis. We did not find significant associations between treatment type and change in cartilage thickness, BMLs, or Hoffa-synovitis.

CONCLUSION:

This cohort with meniscal tear and OA had marked advancement in MRI-based features over 18 months. Those treated with APM had more advancement in some features compared to those treated non-operatively. The clinical relevance of these early findings is unknown and requires further study. This article is protected by copyright. All rights reserved

45 D. MANUAL THERAPY EXTREMITIES**Lateral epicondylalgia and conditioned pain modulation****The Association between Conditioned Pain Modulation and Manipulation Induced Analgesia in People With Lateral Epicondylalgia**

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The Clinical Journal of Pain: February 28, 2019 - Volume Publish Ahead of Print - Issue - p

doi: 10.1097/AJP.0000000000000696

Article Metrics

Objectives: Conditioned Pain Modulation (CPM) and Manipulation Induced Analgesia (MIA) may activate similar neurophysiological mechanisms to mediate their analgesic effects. This study assessed the association between CPM and MIA responses in people with lateral epicondylalgia (LE).

Methods: Seventy participants with LE were assessed for CPM followed by MIA. A single assessor measured pressure pain thresholds (PPT) before, during, and after cold water immersion (10°C) of the asymptomatic hand and contralateral lateral glide (CLG) mobilization of the neck. For analyses, linear mixed models evaluated differences in CPM and MIA responses. Pearson partial correlations and regression analyses evaluated the association between CPM and MIA PPT.

Results: There was a significant increase (CPM and MIA $P < 0.001$) in PPT from baseline during the interventions (CPM mean 195.84 kPa elbow and 201.87 kPa wrist. MIA mean 123.01 kPa elbow 126.06 kPa wrist) and post the interventions (CPM mean 126.06 kPa elbow, 114.24 kPa wrist, MIA mean 123.50 kPa elbow, 122.16 kPa wrist). There were also significant moderate and positive partial linear correlations ($r: 0.40-0.54, P < 0.001$) between CPM and MIA measures, controlling for baseline measures. Regression analyses showed that CPM PPT was a significant predictor of MIA PPT ($P < 0.001$) and the models explained between 73% and 85% of the variance in MIA PPT.

Discussion: This study showed that CPM and MIA responses were significantly correlated and that the CPM response was a significant predictor of MIA response.

59. PAIN

Chronic pain and dementia

Chronic Pain is Associated with a Brain Aging Biomarker in Community-Dwelling Older Adults

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PAIN: January 16, 2019 - Volume Articles in Press - Issue - p

doi: 10.1097/j.pain.0000000000001491

Chronic pain is associated with brain atrophy with limited evidence of its impact in the older adult's brain. We aimed to determine the associations between chronic pain and a brain aging biomarker in persons 60 to 83 years old. Participants of the NEPAL study (n=47) completed demographic, psychological, and pain assessments followed by a QST battery and a T1-weighted MRI. We estimated a brain-predicted age difference that has been previously reported to predict overall mortality risk (brain-PAD; calculated as brain-predicted age minus chronological age), using an established machine-learning model. ANCOVAs and Pearson/Spearman correlations were used to determine associations of brain-PAD with pain, somatosensory and psychological function. Individuals with chronic pain (n=33) had "older" brains for their age compared to those without (n=14, $F(1,41)=4.9, p=0.033$). Greater average worst pain intensity was associated with an "older" brain ($r=0.464, p=0.011$). Among participants with chronic pain, those that reported having pain treatments during the past 3 months had "younger" brains compared to those that did not ($F(1,27)=12.3, p=0.002$). An "older" brain was significantly associated with decreased vibratory ($r=0.323, p=0.033$) and thermal ($r=0.345, p=0.023$) detection, deficient endogenous pain inhibition ($F(1,25)=4.6, p=0.044$), lower positive affect ($r=-0.474, p=0.005$), a less agreeable ($r=-0.439, p=0.020$), and less emotionally stable personality ($r=-0.387, p=0.042$). Our findings suggest that chronic pain is associated with added "age-like" brain atrophy in relatively healthy, community-dwelling older individuals and future studies are needed to determine the directionality of our findings. A brain aging biomarker may help identify people with chronic pain at greater risk of functional decline and poorer health outcomes.

61. FIBROMYALGIA

Reduced sympathetic response

Clin J Pain. 2019 May;35(5):407-419. doi: 10.1097/AJP.0000000000000695.

Exposure to Cold Unmasks Potential Biomarkers of Fibromyalgia Syndrome Reflecting Insufficient Sympathetic Responses to Stress.

Pardo JV^{1,2}, Larson RC³, Spencer RJ³, Lee JT¹, Pasley JD⁴, Torkelson CJ⁵, Larson AA³.

OBJECTIVES:

Fibromyalgia syndrome (FMS) is a chronically painful condition whose symptoms are widely reported to be exacerbated by stress. We hypothesized that female patients with FMS differ from pain-free female controls in their sympathetic responses, a fact that may unmask important biomarkers and factors that contribute to the etiology of FMS.

MATERIALS AND METHODS:

In a pilot study, blood pressure (BP), skin temperature, thermogenic activity, circulating glucose, and pain sensitivity of 13 individuals with FMS and 11 controls at room temperature (24°C) were compared with that after exposure to cold (19°C).

RESULTS:

When measured at 24°C, BP, skin temperature, blood glucose, and brown adipose tissue (BAT) activity, measured using F-fluorodeoxyglucose positron-emission tomography/computed tomography, did not differ between controls and individuals with FMS. However, after cold exposure (19°C), BP and BAT activity increased in controls but not in individuals with FMS; skin temperature on the calf and arm decreased in controls more than in individuals with FMS; and circulating glucose was lower in individuals with FMS than in controls. Pain sensitivity did not change during the testing interval in response to cold.

DISCUSSION:

The convergence of the effect of cold on 4 relatively simple measures of thermogenic, cardiovascular, and metabolic activity, each regulated by sympathetic activity, strongly indicate that individuals with FMS have impaired sympathetic responses to stress that are observable and highly significant even when measured in extraordinarily small sample populations. If insufficient sympathetic responses to stress are linked to FMS, stress may unmask and maximize these potential clinical biomarkers of FMS and be related to its etiology.

62 A. NUTRITION/VITAMINS

Healthy lifestyles improve longevity

Impact of combined healthy lifestyle factors on survival in an adult general population and in high-risk groups: Prospective results from the Moli-sani Study

Journal of Internal Medicine

Bonaccio M, et al. | April 18, 2019

In this investigation involving 22,839 people from the Moli-sani Study (2005–2010), researchers investigated the effect of combined healthy lifestyle factors on survival in an adult general population and in high-risk groups. A total of 1,237 deaths occurred during 8.2 years of follow-up. According to findings, there was considerable impact on survival from the combined four healthy lifestyles (ie, abstention from smoking, adherence to Mediterranean diet, physical activity, and absence of abdominal obesity) both in the general population and among high-risk subgroups. A substantial proportion of this association was explained by inflammatory (eg, C-reactive protein) and novel biomarkers (eg, markers of cardiac damage) of cardiovascular disease risk.

Plant based fatty acids most healthy

Circ Res. 2019 Apr 12;124(8):1266-1275. doi: 10.1161/CIRCRESAHA.118.313996.

Associations of Monounsaturated Fatty Acids From Plant and Animal Sources With Total and Cause-Specific Mortality in Two US Prospective Cohort Studies.

Guasch-Ferré M^{1,2}, Zong G^{1,3}, Willett WC^{1,4,2}, Zock PL⁵, Wanders AJ⁵, Hu FB^{1,4,2}, Sun Q^{1,2}.

RATIONALE:

Dietary monounsaturated fatty acids (MUFAs) can come from both plant and animal sources with divergent nutrient profiles that may potentially obscure the associations of total MUFAs with chronic diseases.

OBJECTIVE:

To investigate the associations of cis-MUFA intake from plant (MUFA-P) and animal (MUFA-A) sources with total and cause-specific mortality.

METHODS AND RESULTS:

We followed 63 412 women from the NHS (Nurses' Health Study; 1990-2012) and 29 966 men from the HPFS (Health Professionals Follow-Up Study; 1990-2012). MUFA-Ps and MUFA-As were calculated based on data collected through validated food frequency questionnaires administered every 4 years and updated food composition databases. During 1 896 864 person-years of follow-up, 20 672 deaths occurred. Total MUFAs and MUFA-Ps were inversely associated with total mortality after adjusting for potential confounders, whereas MUFA-As were associated with higher mortality. When MUFA-Ps were modeled to isocalorically replace other macronutrients, hazard ratios (HRs, 95% CIs) of total mortality were 0.84 (0.77-0.92; P<0.001) for replacing saturated fatty acids, 5% of energy); 0.86 (0.82-0.91; P<0.001) for replacing refined carbohydrates (5% energy); 0.91 (0.85-0.97; P<0.001) for replacing trans fats (2% energy), and 0.77 (0.71-0.82; P<0.001) for replacing MUFA-As (5% energy). For isocalorically replacing MUFA-As with MUFA-Ps, HRs (95% CIs) were 0.74 (0.64-0.86; P<0.001) for cardiovascular mortality; 0.73 (0.65-0.82; P<0.001) for cancer mortality, and 0.82 (0.73-0.91; P<0.001) for mortality because of other causes.

CONCLUSIONS:

Higher intake of MUFA-Ps was associated with lower total mortality, and MUFA-As intake was associated with higher mortality. Significantly lower mortality risk was observed when saturated fatty acids, refined carbohydrates, or trans fats were replaced by MUFA-Ps, but not MUFA-As. These data suggest that other constituents in animal foods, such as saturated fatty acids, may confound the associations for MUFAs when they are primarily derived from animal products. More evidence is needed to elucidate the differential associations of MUFA-Ps and MUFA-As with mortality.

Autoimmune disorders

J Clin Gastroenterol. 2018 Jul 24. doi: 10.1097/MCG.0000000000001100.

Autoimmune and Allergic Disorders are More Common in People With Celiac Disease or on a Gluten-free Diet in the United States.

Kim HS^{1,2}, Unalp-Arida A³, Ruhl CE⁴, Choung RS⁵, Murray JA⁵.

GOALS:

We analyzed demographics, lifestyle patterns, and clinical characteristics of people with celiac disease (CD) and people without CD avoiding gluten (PWAG) to better understand associations with medical conditions and consumer behavior.

BACKGROUND:

Clinical significance of CD and gluten avoidance in the general population is incompletely understood. Recently, a high incidence of CD in adolescents with susceptibility genotypes, similar to other autoimmune or allergic disorders, and regional differences in consumer practices of gluten avoidance were reported.

METHODS:

Among 22,277 participants in the National Health and Nutrition Examination Survey 2009-2014, we identified persons with CD by testing CD serology or by both a health care provider diagnosis and adherence to a gluten-free diet. Similarly, PWAG were defined as adherent to a gluten-free diet without a CD diagnosis. Consumer behavior and characteristics of both groups, CD and PWAG were compared with those without these conditions, using survey-weighted generalized logistic regression.

RESULTS:

Participants with CD considered nutrition very important when grocery shopping and tended to have more constipation and thyroid disease. PWAG tended to spend more money on groceries, purchase organic foods, and check food labels more frequently during grocery shopping. They also reported having more food allergies, asthma, and thyroid disease.

CONCLUSIONS:

Our study confirms that CD and PWAG share comorbidities of autoimmune nature. PWAG had more autoimmune/allergy-related disorders that may be associated with non-celiac gluten sensitivity a self-justifiable reason to be on the diet.

63 PHARMACOLOGY

Opioid overuse

J Am Acad Orthop Surg. 2019 May 1;27(9):e423-e429. doi: 10.5435/JAAOS-D-17-00663.

Prescription Opioid Type and the Likelihood of Prolonged Opioid Use After Orthopaedic Surgery.

Basilico M¹, Bhashyam AR, Harris MB, Heng M.

INTRODUCTION:

A common belief is that some narcotic medications have a higher association with prolonged use. We assessed whether the initial opiate type prescribed to postoperative, opiate-naive orthopaedic trauma patients was associated with prolonged opioid use.

METHODS:

We studied 17,961 adult, opiate-naive patients treated for a surgical musculoskeletal injury. Discharge prescription in morphine milligram equivalents (MMEs, a standardized dosing unit that allows for comparison across opioid types) was calculated. Opioid prescribing beyond 90 days after injury was defined as prolonged use.

RESULTS:

Initial analysis demonstrated a higher likelihood of prolonged use for patients discharged on hydromorphone or morphine versus hydrocodone. However, when we adjusted for discharge MME, only opioid quantity was predictive of prolonged use ($P < 0.001$). In addition, discharge MME was associated with opioid type ($P < 0.01$).

DISCUSSION:

Persistent opiate use was associated with discharge opioid quantity, not the opioid type. These results highlight the importance of calculating equivalence doses when selecting opioid types and considering amount of narcotics prescribed.