

2. LBP

Youth risk factors

Pain. 2018 Apr;159(4):764-774. doi: 10.1097/j.pain.0000000000001143.

Longitudinal profiles of back pain across adulthood and their relationship with childhood factors: evidence from the 1946 British birth cohort.

Muthuri SG, Kuh D, Cooper R.

Abstract

This study aimed to (1) characterise long-term profiles of back pain across adulthood and (2) examine whether childhood risk factors were associated with these profiles,

using data from 3271 participants in the Medical Research Council National Survey of Health and Development. A longitudinal latent class analysis was conducted on binary outcomes of back pain at ages 31, 36, 43, 53, 60 to 64, and 68 years. Multinomial logistic regression models were used to examine associations between selected childhood risk factors and class membership; adjusted for sex, adult body size, health status and behaviours, socioeconomic position, and family history of back pain.

Four profiles of back pain were identified: no or occasional pain (57.7%), early-adulthood only (16.1%), mid-adulthood onset (16.9%), and persistent (9.4%). The "no or occasional" profile was treated as the referent category in subsequent analyses. After adjustment, taller height at age 7 years was associated with a higher likelihood of early-adulthood only (relative risk ratio per 1 SD increase in height = 1.31 [95% confidence interval: 1.05-1.65]) and persistent pain (relative risk ratio = 1.33 [95% confidence interval: 1.01-1.74]) in women (P for sex interaction = 0.01). Factors associated with an increased risk of persistent pain in both sexes were abdominal pain, poorest care in childhood, and poorer maternal health.

Abdominal pain and poorest housing quality were also associated with an increased likelihood of mid-adulthood onset pain. These findings suggest that there are different long-term profiles of back pain, each of which is associated with different early life risk factors.

This highlights the potential importance of early life interventions for the prevention and management of back pain.

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Risks in adolescents

Clin J Pain. 2018 May;34(5):468-484. doi: 10.1097/AJP.0000000000000558.

Risk Factors for Low Back Pain in Childhood and Adolescence: A Systematic Review.

Calvo-Muñoz I^{1,2}, Kovacs FM^{2,3}, Roqué M^{2,4,5}, Gago Fernández I^{2,6}, Seco Calvo J^{2,7,8}.

OBJECTIVES:

To identify factors associated with low back pain (LBP) in children and adolescents.

MATERIALS AND METHODS:

A systematic review was conducted (Prospero CRD42016038186). Observational studies analyzing LBP risk factors among participants aged between 9 and 16 were searched for in 13 electronic databases and 8 specialized journals until March 31, 2016, with no language restrictions. In addition, references in the identified studies were manually tracked. All identified studies that included ≥ 50 participants aged 9 to 16, were reviewed. Their methodological quality was assessed by 2 reviewers separately, using validated tools, which scored, from worst to best, 0 to 100 for cross-sectional and 0 to 12 for cohort studies. A sensitivity analysis only included studies that had adjusted for confounders, had ≥ 500 participants, and had a methodological score of $\geq 50\%$.

RESULTS:

A total of 5142 citations were screened and 61 studies, including 137,877 participants from 5 continents, were reviewed. Their mean (range) methodological scores were 74.56 (50 to 100) for cross-sectional studies and 7.36 (5 to 9) for cohort studies. The studies had assessed 35 demographic, clinical, biological, family, psychological, ergonomic, and lifestyle risk factors. The mean (range) prevalence of LBP ranged between 15.25% (3.20 to 57.00) for point prevalence and 38.98% (11.60 to 85.56) for lifetime prevalence. Results on the association between LBP and risk factors were inconsistent. In the sensitivity analysis, "older age" and "participation in competitive sports" showed a consistent association with LBP.

DISCUSSION:

Future studies should focus on muscle characteristics, the relationship between body and backpack weights, duration of carrying the backpack, characteristics of sport practice, and which are the factors associated with specifically chronic pain.

7. PELVIC ORGANS/WOMAN'S HEALTH

Vaginal birth after c section

Vaginal birth after caesarean vs elective repeat caesarean delivery after one previous caesarean section: A cost-effectiveness analysis in four European countries

BMC Pregnancy and Childbirth — | April 13, 2018

Fobelets M, et al.

As a part of OptiBIRTH project, a health economic evaluation on mode of birth was challenging, especially in the context of a multi-country study. Hence, researchers performed an analysis of a hypothetical cohort estimating the costs and health effects of vaginal birth after caesarean section (VBAC) compared to elective repeat caesarean delivery (ERCD) for low-risk women in 4 European countries prior to developing a robust standardised model to conduct the health economic analysis. As per findings, VBAC was cost-effective in all four countries compared to ERCD for low-risk women. Findings seem to be significant for health service managers, economists and policy makers concerned with maximising health benefits within limited and constrained resources.

Age of Menarche

Hum Reprod. 2018 Apr 9. doi: 10.1093/humrep/dey078.

The relation of age at menarche with age at natural menopause: a population study of 336 788 women in Norway.

Bjelland EK^{1,2}, Hofvind S³, Byberg L⁴, Eskild A^{1,5}.

STUDY QUESTION: Is age at menarche associated with age at menopause or with duration of the reproductive period (interval between menarche and menopause)?

SUMMARY ANSWER: The association of age at menarche with age at menopause was weak and non-linear, and the duration of the reproductive period decreased by increasing age at menarche.

WHAT IS KNOWN ALREADY: It remains uncertain whether age at menarche is associated with age at menopause. Some studies report that women with early menarche also have early menopause. Other studies report that women with early menarche have late menopause, or they report no association. The duration of the reproductive period may be an indicator of the cumulative endogenous exposure to estrogens and progestogens during life course and is associated with risk of breast cancer and endometrial cancer.

STUDY DESIGN, SIZE, DURATION: A retrospective cohort study of 336 788 women, aged 48-71 years, in the BreastScreen Norway during the years 2006-2014 was performed.

PARTICIPANTS/MATERIALS, SETTING, METHODS: Information about age at menarche and menopausal status was obtained by self-administered questionnaires. We used time to event approaches to estimate the associations.

MAIN RESULTS AND THE ROLE OF CHANCE: Median age at menopause was 51 years in most menarche groups. Women with menarche at age 16 years or age ≥ 17 years had menopause 1 year later [median: 52 years, interquartile range (IQR): 49-54 years] than women with menarche at age 13 years (median: 51 years, IQR: 49-54 years, reference) (crude hazard ratio (HR) = 0.95; 95% CI: 0.93-0.97 and 0.95; 95% CI: 0.92-0.99, Pnon-linearity < 0.001). The reproductive period decreased with increasing age at menarche (Pnon-linearity < 0.001), and women with menarche at age ≤ 9 years had 9 years longer median reproductive period than women with menarche at age ≥ 17 years (median: 43 versus 34 years). Adjustment for year of birth did not change the HR estimates notably.

LARGE SCALE DATA: Not applicable.

LIMITATIONS, REASONS FOR CAUTION:

Information about age at menarche and age at menopause was based on self-reports. Particularly for age at menarche, the long time interval between the event and data collection may have caused imprecise reporting.

WIDER IMPLICATIONS OF THE FINDINGS:

Our study suggests that age at menarche is a strong indicator for the duration of women's reproductive period. Our findings should encourage studies of the independent role of duration of the reproductive period on the risk of breast cancer and endometrial cancer, since these cancers have been associated with exposure to estrogens and progestogens.

STUDY FUNDING/COMPETING INTEREST(S):

The present study was funded by the Norwegian Cancer Society [Grant number 6863294-2015]. The authors declare no conflicts of interest.

Sleep and dysmenorrhea

Arch Womens Ment Health. 2018 Apr 4. doi: 10.1007/s00737-018-0838-x.

Both melatonin and meloxicam improved sleep and pain in females with primary dysmenorrhea-results from a double-blind cross-over intervention pilot study.

Keshavarzi F¹, Mahmoudzadeh F¹, Brand S^{2,3,4}, Sadeghi Bahmani D^{2,3}, Akbari F¹, Khazaie H⁵, Ghadami MR².

Up to 25% of ovulating women suffer from primary dysmenorrhea, a condition associated with pain and transient-reduced quality of life, along with greater irritability and impaired sleep.

In the present study, we asked whether and if so to what extent melatonin and meloxicam can improve subjective and objective sleep and reduce pain among women with primary dysmenorrhea (PD). To this end, we conducted a double-blind cross-over clinical trial lasting for three menstrual cycles. A total of 14 women (mean age $M = 27.5$ years) with primary dysmenorrhea took part in the study. At baseline, that is, during the first menstruation, they completed a visual analogue scale to rate pain; sleep continuity was assessed via actigraphs, and overall sleep quality was assessed with the Pittsburgh Sleep Quality Index (PSQI). Next, participants were randomly assigned to one of two conditions, either melatonin during the second, and meloxicam during the third menstruation, or meloxicam during the second, and melatonin during the third menstruation. Neither participants nor investigators were aware of participants' study assignment. During the second and third menstruations, the assessments described above were repeated.

At baseline, sleep assessed both objectively and subjectively was impaired, and pain was high. Subjective sleep improved and pain decreased during the second and third menstruations irrespective of whether melatonin or meloxicam was administered first or second.

Likewise, objective sleep efficiency increased and objective sleep latency shortened. The efficacy of melatonin was superior to that of meloxicam. The present pattern of results suggests that both melatonin and meloxicam are suitable to treat pain and PD-related sleep complaints among women with primary dysmenorrhea.

Breast CA risk

J Clin Oncol. 2018 Apr 5;JCO2017773424. doi: 10.1200/JCO.2017.77.3424.

Breast Cancer Family History and Contralateral Breast Cancer Risk in Young Women: An Update From the Women's Environmental Cancer and Radiation Epidemiology Study.

Reiner AS¹, Sisti J¹, John EM¹, Lynch CF¹, Brooks JD¹, Mellekjær L¹, Boice JD¹, Knight JA¹, Concannon P¹, Capanu M¹, Tischkowitz M¹, Robson M¹, Liang X¹, Woods M¹, Conti DV¹, Duggan D¹, Shore R¹, Stram DO¹, Thomas DC¹, Malone KE¹, Bernstein L¹; WECARE Study Collaborative Group, Bernstein JL¹.

Purpose The Women's Environmental Cancer and Radiation Epidemiology (WECARE) study demonstrated the importance of breast cancer family history on contralateral breast cancer (CBC) risk, even for noncarriers of deleterious BRCA1/2 mutations. With the completion of WECARE II, updated risk estimates are reported. Additional analyses that exclude women negative for deleterious mutations in ATM, CHEK2*1100delC, and PALB2 were performed.

Patients and Methods The WECARE Study is a population-based case-control study that compared 1,521 CBC cases with 2,212 individually matched unilateral breast cancer (UBC) controls. Participants were younger than age 55 years when diagnosed with a first invasive breast cancer between 1985 and 2008. Women were interviewed about breast cancer risk factors, including family history. A subset of women was screened for deleterious mutations in BRCA1/2, ATM, CHEK2*1100delC, and PALB2. Rate ratios (RRs) were estimated using multivariable conditional logistic regression. Cumulative absolute risks (ARs) were estimated by combining RRs from the WECARE Study and population-based SEER*Stat cancer incidence data.

Results Women with any first-degree relative with breast cancer had a 10-year AR of 8.1% for CBC (95% CI, 6.7% to 9.8%). Risks also were increased if the relative was diagnosed at an age younger than 40 years (10-year AR, 13.5%; 95% CI, 8.8% to 20.8%) or with CBC (10-year AR, 14.1%; 95% CI, 9.5% to 20.7%). These risks are comparable with those seen in BRCA1/2 deleterious mutation carriers (10-year AR, 18.4%; 95% CI, 16.0% to 21.3%). In the subset of women who tested negative for deleterious mutations in BRCA1/2, ATM, CHEK2*1100delC, and PALB2, estimates were unchanged. Adjustment for known breast cancer single-nucleotide polymorphisms did not affect estimates.

Conclusion Breast cancer family history confers a high CBC risk, even after excluding women with deleterious mutations. Clinicians are urged to use detailed family histories to guide treatment and future screening decisions for young women with breast cancer.

8. VISCERA

Vit D & E in Celiacs disease

Fat soluble vitamin levels in children with newly diagnosed celiac disease, a case control study

Yavuz Tokgöz Semiha Terlemez and Aslihan Karul

<https://doi.org/10.1186/s12887-018-1107-x>

Background

In children diagnosed with celiac disease, fat soluble vitamin levels were aimed to be evaluated and it was intended to determine whether fat soluble vitamin levels were needed to be assessed routinely in these patients during diagnosis.

Methods

Between May 2015–May 2016, diagnosis symptoms of celiac patients (CD) in newly diagnosed pediatric group were questioned, fat soluble vitamin levels simultaneous with intestinal biopsies were evaluated. Vitamin levels were compared with those of healthy control group.

Results

A total of 52 patients involving 27 female (51.9%), 25 male (48.1%); and a total of 50 healthy control group including 25 female (50%), 25 male (50%) were evaluated. The average age of patients was 9 ± 4.3 years, and their average weight was determined as 16.2 ± 6.3 kg. Growth retardation was the most frequent symptom in our patients (61.5%). Abdominal pain (51.9%) and diarrhea (11.5%) are among the other most commonly seen symptoms. In the histological examination of patients, Marsh 3B $n = 23$ (45.1%) was mostly established. Vitamin A and vitamin D levels of patients were determined significantly lower compared to those of control group. Vitamin A and vitamin D deficiencies were identified significantly higher compared to those of healthy control group. Vitamin D insufficiency was observed in 48 patients (92.3%) and vitamin D deficiency was determined in 32 (61.5%) out of 48. Vitamin A deficiency was established in 17 (32.7%) patients. Vitamin E and vitamin K1 deficiency were determined in no patients. In the healthy control group, vitamin D deficiency was seen in 2 (4%) patients, vitamin D insufficiency was determined in 9 (18%) patients. Other vitamin levels were identified at normal levels in the healthy group.

Conclusions

In newly diagnosed children with CD, a significant lowness was established in vitamin D and A. The evaluation of vitamin A and D levels will be helpful in the course of diagnosis in these patients.

Retirement and the CV system

Physical activity, sedentary behavior, and retirement: The Multi-Ethnic Study of Atherosclerosis

American Journal of Preventive Medicine — | April 11, 2018

Jones SA, et al.

Researchers studied longitudinal patterns of moderate to vigorous and domain-specific physical activity and TV watching by retirement status among participants in the Multi-Ethnic Study of Atherosclerosis, recruited from six U.S. communities and were aged 45–84 years at baseline. Retirement was shown to be related to a 10% decrease in moderate to vigorous physical activity and increases of 13% to 29% in recreational walking, household activity, and TV watching. Overall, the retirement transition was found to be related to changes in physical activity and TV watching.

Low FODMAP helps

Clinical Nutrition

Influence of low FODMAP and gluten-free diets on disease activity and intestinal microbiota in patients with non-celiac gluten sensitivity

- Walburga Dieterich^{a, b, ,}, Detlef Schuppan^{c, d}, Monic Schink^{a, b}, Raphaela Schwappacher^{a, b}, Stefan Wirtz^a, Abbas Agaimy^e, Markus F. Neurath^a, Yurdagül Zopf^{a, b}
<https://doi.org/10.1016/j.clnu.2018.03.017>
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Background & aims

Non-celiac gluten sensitivity (NCGS) is characterized by intestinal and extra-intestinal symptoms triggered by ingestion of gluten. However, non-gluten triggers have recently been implicated, and a FODMAP (fermentable oligo-, di-, monosaccharides and polyols)-reduced diet can partially improve symptoms in NCGS. Our aim was to analyze the effect of a low FODMAP versus a gluten-free diet (GFD) on clinical symptoms, psychological well-being, intestinal inflammation and integrity, and stool microbiota.

Methods

Nineteen patients with NCGS and ten healthy controls consumed a gluten-containing standard diet before starting a two-week low FODMAP diet; after a five day transition period, participants ingested a GFD for another two weeks. The primary outcome measure was the improvement of clinical symptoms in NCGS patients under the different diets. Secondary outcomes were the determination of dietary effects on intestinal inflammation, psychological well-being, and differences in stool microbiota between NCGS patients and controls.

Results

The low FODMAP diet and especially the GFD led to a significant improvement of clinical and psychological symptoms in NCGS. A clear reduction in duodenal intraepithelial lymphocytes and mucin-producing Goblet cells was found after the GFD in these patients. Significant microbial differences between NCGS patients and controls were noticed in stool samples at every time point. Both diets caused microbial shifts in all participants, with a greater variability on genus level and metabolisms groups in NCGS patients.

Conclusions

Our findings suggest a multifactorial etiology of NCGS, due to a functional effect caused by FODMAPs, combined with a mild gluten-triggered immune reaction, and a microbiota dysbalance.

Exercise decreases CV risk

Prev Med. 2018 Mar 29;112:31-37. doi: 10.1016/j.ypmed.2018.03.020.

Change in physical activity and accumulation of cardiometabolic risk factors.

Leskinen T¹, Stenholm S², Heinonen OJ³, Pulakka A², Aalto V⁴, Kivimäki M⁵, Vahtera J².

This study aims to examine the association between change in physical activity over time and accumulation of cardiometabolic risk factors. Four consecutive surveys (Time 1 to 4) were conducted with 4-year intervals in 1997-2013 (the Finnish Public Sector study). Physical activity of 15,634 cardio-metabolically healthy participants (mean age 43.3 (SD 8.7) years, 85% women) was assessed using four-item survey measure and was expressed as weekly metabolic equivalent (MET) hours in Time 1, 2, and 3. At each time point, participants were categorised into low (<14 MET-h/week), moderate (≥ 14 to <30 MET-h/week), or high (≥ 30 MET-h/week) activity level and change in physical activity levels between Time 1 and 3 (over 8 years) was determined. The outcome was the number of incident cardiometabolic risk factors (hypertension, dyslipidemia, diabetes, and obesity) at Time 4. Cumulative logistic regression was used for data analysis. Compared to maintenance of low physical activity, increase in physical activity from low baseline activity level was associated with decreased accumulation of cardiometabolic risk factors in a dose-response manner (cumulative odds ratio [cOR] = 0.73, 95% CI 0.59-0.90 for low-to-moderate and cOR = 0.67, 95% CI 0.49-0.89 for low-to-high, P for trend 0.0007). Decrease in physical activity level from high to low was associated with increased accumulation of cardiometabolic risk factors (cOR = 1.60, 95% CI 1.27-2.01) compared to those who remained at high activity level. Thus even a modest long-term increase in physical activity was associated with reduction in cardiometabolic risk whereas decrease in physical activity was related to increased risk.

13 B. TMJ/ORAL

Jaw opening

Increasing the vertical dimension of occlusion: A multicenter retrospective clinical comparative study on 100 patients with fixed tooth-supported, mixed, and implant-supported full-arch rehabilitations

The International Journal of Periodontics & Restorative Dentistry — | April 12, 2018

Fabbri G, et al.

In this multicenter retrospective clinical study, authors compared the impacts of an increase in the vertical dimension of occlusion (VDO) in patients with fixed rehabilitations. For functional complications, results suggested statistically significant differences among the experimental groups. Researchers did not note frequent functional and prosthetic complications after the VDO increase. Mainly functional complications were seen in completely edentulous patients with posterior implant-supported rehabilitations but usually were no longer evident after 2 weeks. In terms of prosthetic complications and self-reported bruxism, no significant differences were found between the groups.

13 C. AIRWAYS/SWALLOWING/SPEECH**Erectile dysfunction**

Sleep Medicine

CPAP therapy improves erectile function in patients with severe obstructive sleep apnea

- Richard Schulz^{a, b, *}, Fabian Bischoff^c,
<https://doi.org/10.1016/j.sleep.2018.03.018>

Highlights

- Erectile dysfunction is very prevalent in patients with severe sleep apnea.
 - CPAP therapy improves erectile function in most seriously affected patients.
 - Improvements of erectile function under CPAP may depend on therapeutic compliance.
 - The benefits of CPAP on erectile function are linked to better quality of life.
 - Randomized controlled trials are needed to confirm these finding

Objectives

Erectile dysfunction (ED) is highly prevalent in obstructive sleep apnea (OSA), however, the effect of continuous positive airway pressure (CPAP) therapy on erectile function has not yet been thoroughly investigated in these patients.

Methods

Ninety-four men with severe OSA (ie with an apnea-hypopnea-index ≥ 30 /h of sleep) were prospectively evaluated for the presence and severity of ED before and after 6-12 months of CPAP therapy. The abbreviated version of the International Index of Erectile Function, ie the IIEF-5, was used to rate erectile function. Furthermore, all study participants responded to standard questionnaires of daytime sleepiness (Epworth Sleepiness Scale), quality of life (WHO Wellbeing 5 questionnaire) and depression (Major Depression Inventory).

Results

ED as defined by an IIEF-5 score of ≤ 21 was present in 64 patients (ie 68.1%). CPAP treatment significantly improved erectile function in those patients suffering from moderate and severe ED. Additionally, a trend for a correlation between the improvement of erectile function under CPAP and the hours of its use was observed. Finally, this effect was associated with larger improvements of quality of life in affected patients.

Conclusions

ED is very frequent in men with severe OSA and can at least partly be reversed by long-term CPAP therapy in most seriously affected patients. The beneficial effect on erectile function may depend on CPAP compliance and is accompanied by improvements of quality of life. Randomized controlled trials are needed to confirm these findings.

Sleep and cognitive decline
Sleep and cognitive decline

Ann Neurol. 2018 Mar;83(3):472-482. doi: 10.1002/ana.25166. Epub 2018 Mar 3.

Sleep and cognitive decline: A prospective nondemented elderly cohort study.

Suh SW¹, Han JW¹, Lee JR¹, Byun S¹, Kwon SJ¹, Oh SH¹, Lee KH¹, Han G¹, Hong JW¹, Kwak KP², Kim BJ³, Kim SG⁴, Kim JL⁵, Kim TH⁶, Ryu SH⁷, Moon SW⁸, Park JH⁹, Seo J¹⁰, Youn JC¹¹, Lee DY^{12,13}, Lee DW¹⁴, Lee SB¹⁵, Lee JJ¹⁵, Jhoo JH¹⁶, Kim KW^{1,13,17,18}.

OBJECTIVE:

To investigate sleep disturbances that induce cognitive changes over 4 years in nondemented elderlies.

METHODS:

Data were acquired from a nationwide, population-based, prospective cohort of Korean elderlies (2,238 normal cognition [NC] and 655 mild cognitive impairment [MCI]). At baseline and 4-year follow-up assessments, sleep-related parameters (midsleep time, sleep duration, sleep latency, subjective sleep quality, sleep efficiency, and daytime dysfunction) and cognitive status were measured using the Pittsburgh Sleep Quality Index and Consortium to Establish a Registry for Alzheimer's Disease Assessment, respectively. We used logistic regression models adjusted for covariates including age, sex, education, apolipoprotein E genotype, Geriatric Depression Scale, Cumulative Illness Rating Scale, and physical activity.

RESULTS:

In participants with NC, long sleep latency (>30 minutes), long sleep duration (≥ 7.95 hours), and late midsleep time (after 3:00 am) at baseline were related to the risk of cognitive decline at 4-year follow-up assessment; odds ratio (OR) was 1.40 for long sleep latency, 1.67 for long sleep duration, and 0.61 for late midsleep time. These relationships remained significant when these variables maintained their status throughout the follow-up period. Newly developed long sleep latency also doubled the risk of cognitive decline. In those with MCI, however, only long sleep latency reduced the chance of reversion to NC (OR = 0.69).

INTERPRETATION:

As early markers of cognitive decline, long sleep latency can be used for elderlies with NC or MCI, whereas long sleep duration and relatively early sleep time might be used for cognitively normal elderlies only. Ann Neurol 2018;83:472-482.

14. HEADACHES

Vestibular HA's

Clinical features, familial history, and migraine precursors in patients with definite vestibular migraine: The VM-Phenotypes projects

Headache: The Journal of Head and Face Pain — | April 11, 2018

Teggi R, et al.

In a sample of 252 subjects with a diagnosis of definite vestibular migraine, the features of vertiginous episodes, accompanying symptoms, familial history, and migraine precursors were assessed using a questionnaire. Findings indicated that in pediatric patients, vestibular symptoms may act as a predisposing factor to develop vestibular migraine at an earlier age in adulthood.

Methods

- Two hundred and fifty two subjects were recruited in different centers in this cross-sectional multicentric study.
- A senior specialist assessed features of vestibular symptoms and accompanying symptoms through a structured questionnaire.

Results

- For migraine and vertigo, the age of onset was 23 years and 38 years, respectively.
- Internal vertigo was reported by 184 subjects (73%), while 63 subjects (25%) reported external vertigo.
- In this study, the duration of vertigo attacks was less than 5 minutes in 58 subjects (23%), between 6 and 60 minutes in 55 (21.8%), between 1 and 4 hours in 29 (11.5%), 5 and 24 hours in 44 (17.5%), up to 3 days in 14 (5.5%), and more than 3 days in seven (2.8%); 14 subjects (5.5%) referred attacks lasting from less than 5 minutes and up to 1 hour, nine (3.6%) referred attacks lasting from less than 5 minutes and up to 1 to 4 hours, six (2.4%) referred attacks lasting from less than 5 minutes and up to 5 to 24 hours, and five (2%) cases referred attacks lasting from less than 5 minutes and up to days.
- Patients reported the following accompanying symptoms more frequently: nausea (59.9%), photophobia (44.4%), phonophobia (38.9%), vomiting (17.8%), palpitations (11.5%), tinnitus (10.7%), fullness of the ear (8.7%), and hearing loss (4%).
- A positive family history of migraine was noted in 177 subjects (70.2%), while a positive family history of vertigo was noted in 167 subjects (66.3%).
- In the sample, at least one of the pediatric precursors was reported in 69% of patients, in particular, 42.8% of subjects referred motion sickness.
- In the sub-sample with a familial history of migraine, the age of onset of the first headache was lower than in the total sample.
- Observations indicated that lower age of onset of vertigo in adulthood could be predicted with benign paroxysmal vertigo – BPV, benign paroxysmal torticollis, and motion sickness among the pediatric precursors; cyclic vomiting was predictive for vomiting during vertigo attacks in adults.

Blood flow

Cerebral blood flow velocity in migraine and chronic tension-type headache patients

Authors Karacay Ozkalayci S, Nazliel B, Batur Caglayan HZ, Irkec C

DOI <https://doi.org/10.2147/JPR.S144183>

Introduction: The present study seeks to use transcranial Doppler ultrasound to evaluate cerebral blood flow velocities in anterior and posterior circulation arteries, during an attack-free episode in migraine patients, with and without aura, as well as in chronic tension-type headache patients who were not receiving prophylactic medication.

Methods: A total of 50 patients (35 female, 15 male) were evaluated during a headache-free episode: 30 migraine patients without aura (mean age: 32 ± 8 years), 10 migraine patients with aura (mean age: 34 ± 4 years), and 10 patients with chronic tension-type headache (mean age: 34 ± 5 years).

Results: No significant difference was present between anterior, middle, and posterior cerebral and vertebral arteries' blood flow velocities between migraine patients, with and without aura, or in patients with a tension-type headache, and normal controls ($p>0.05$). However, a significant increase in basilar artery cerebral blood flow velocities relative to controls was present in patients with a tension-type headache ($p>0.001$).

Conclusion: It is difficult to predict the main reason for the significant increase in basilar artery blood flow velocities in patients with chronic tension-type headache. It may be due to constriction of conductance or the dilatation of the resistance vessels.

Keywords: cerebral blood flow, migraine without aura, migraine with aura, tension-type headache, transcranial Doppler ultrasonography

17. SHOULDER GIRDLE

Scapula stability

Scapular Muscle Activity During Static Yoga Postures

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26 DOI:10.2519/jospt.2018.7311

Study Design

Controlled laboratory study; cross-sectional.

Background

Despite the growing popularity of yoga, little is known about the muscle activity of the scapular stabilizers during isometric yoga postures and their potential utility in shoulder rehabilitation.

Objectives

To examine scapular stabilizer muscle activation during various yoga postures.

Methods

Twenty women with yoga experience and no shoulder pain or injury participated. Electromyography was used to record upper, middle and lower trapezius as well as serratus anterior muscle activity during 15 yoga postures.

Results

Muscle activity varied between yoga postures (3-57% maximum voluntary contraction (% MVIC)). Overall, the posture “locust arms forward” elicited the highest activity from the upper (22.4% MVIC), middle (41.8% MVIC) and lower (56.8% MVIC) trapezius, while several postures elicited moderate activity (>20% MVIC) from the serratus anterior. Alternatively, “dancer’s pose right”, “reverse tabletop”, and “warrior II” demonstrated low activity (≤15.7% MVIC) of the scapula stabilizers.

Conclusions

Strengthening the scapula stabilizer muscles is an important component of shoulder rehabilitation. Yoga postures have been identified that activate the scapular stabilizer muscles at varying levels of activity. *J Orthop Sports Phys Ther, Epub 6 Apr 2018. doi:10.2519/jospt.2018.7311*

Keyword: complementary therapies, electromyography, physical therapy exercises, rehabilitation, upper extremity

22 B. INSTABILITY

Anterior Bankhart

Atypical traumatic anterior shoulder instability with excessive joint laxity: Recurrent shoulder subluxation without a history of dislocation

Journal of Orthopaedic Surgery and Research — | April 13, 2018

Kim SJ, et al.

Researchers probed the outcomes after arthroscopic stabilization for recurrent traumatic shoulder subluxation in subjects having excessive joint laxity but no history of dislocation. They noted satisfactory overall functional outcomes after arthroscopic stabilization of recurrent shoulder subluxation, despite excessive joint laxity. Nonetheless, in patients with excessive joint laxity plus a glenoid bone defect size of more than approximately 15%, arthroscopic Bankart repair could not be reliable.

Methods

- Authors included 23 patients with glenoid bone defects less than 20% who had undergone arthroscopic stabilization of recurrent shoulder subluxation and were available for at least 2 years follow-up.
- They evaluated the outcomes with the subjective shoulder value (SSV), University of California Los Angeles (UCLA) shoulder score, Rowe score, and sports/recreation activity level.

Results

- Findings suggested that the overall functional scores improved significantly ($p < 0.001$) vs preoperative scores: SSV improved from 49.1 to 90.4; Rowe score improved from 36.7 to 90.2; and UCLA shoulder score improved from 26.3 to 32.5, postoperatively.
- As per the data, the rate of patient satisfaction was 87% (20/23 patients).
- They noted the sports/recreation activity level (return to pre-morbid activity level; grade I = 100% to grade IV = less than 70%) to be grade I in 7 patients, grade II in 11, grade III in 3, grade IV in 2.
- Results demonstrated the incidence of any glenoid bone defect to be 61% (14/23 patients), and the mean glenoid bone defect size to be 8%.
- Out of these 14 patients, 8 (35%) exhibited 15–20% glenoid bone defects.
- In 2 patients (9%) who had 15–20% glenoid bone defect, instability reoccurred.

32 A. KNEE/ACL**Testing for rehab**

The International Journal of Sports Physical Therapy | Volume 13, Number 2 | April 2018

RELATIONSHIP BETWEEN THE LOWER QUARTER Y-BALANCE TEST SCORES AND ISOKINETIC STRENGTH TESTING IN PATIENTS STATUS POST ACL RECONSTRUCTION

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Background:

ACL injuries are common among sports populations and achieving adequate lower extremity strength is important prior to return to play. Access to isokinetic testing equipment that measures lower extremity strength is limited. Screening tools that measure functional criteria are accessible to clinicians, however the tools' relationship to strength constructs have not been investigated in an ACL reconstructed (ACLR) population.

Purpose: The primary objective was to determine if relationships exist between isokinetic peak knee extension torque (PKET), peak knee flexion torque (PKFT), hamstring to quadriceps (HQ) ratios, and YBT-LQ performance following ACLR. The secondary objective was to observe differences in isokinetic strength ability between high and low performers on the YBT-LQ.

Study Design: Retrospective Chart Review

Methods: Medical records of forty-five ACL-reconstructed subjects, between five-12 months post-surgery were queried for functional assessment data collected during the institution's standard outcome testing battery. Variables of interest included: demographic and anthropomorphic measures, YBT- LQ performance, and involved limb isokinetic PKET, PKFT, and HQ ratios. Performance on each measure, as well as asymmetry between sides, was analyzed using a correlation matrix.

Results: Statistically significant ($p < 0.01$) relationships were identified between YBT-LQ anterior reach asymmetry and the PKET deficit ($r = 0.264$). PKET and PKFT on the involved limb correlated to performance of anterior reach ($r = 0.591$, $p < 0.01$) ($r = 0.493$, $p < 0.01$), posteromedial reach ($r = 0.498$, $p < 0.01$) ($r = 0.577$, $p < 0.01$), and posterolateral reach ($r = 0.294$, $p < 0.05$) ($r = 0.445$, $p < 0.01$) respectively. Similar relationships existed on the unin- volved side, but to a lesser extent. High and low performers on the YBT-LQ demonstrated lower and higher extension torque deficits, respectively.

Conclusion: While each test measures unique constructs, there are associations between components of the tests. In the ACLR population, both the YBT-LQ and isokinetic strength testing can expose asymmetries and impact return to play decision making.

Level of evidence: 2b

Anatomical considerations**Anterior cruciate ligament reconstruction, rehabilitation, and return to play: 2015 update**

John Nyland,^{1,2} Alma Mattocks,¹ Shane Kibbe,² Alaa Kalloub,^{2,3} Joe W Greene,⁴ and David N M Caborn^{2,3}

Abstract

Anatomical discoveries and a growing appreciation of the knee as a complex organ are driving innovations in patient care decision-making following anterior cruciate ligament (ACL) injury. Surgeons are increasing their efforts to restore combined mechanical-neurosensory ACL function and placing more consideration on when to reconstruct versus repair native anatomical structures. Surgical options now include primary repair with or without reinforcing the injured ACL with suture-based internal bracing, and growing evidence supports biological augmentation using platelet-rich plasma and mesenchymal stem cells to enhance tissue healing. Physical therapists and athletic trainers are increasing their efforts to facilitate greater athlete cognitive engagement during therapeutic exercise performance to better restore nonimpaired neuromuscular control activation amplitude and timing. Knee brace design and use needs to evolve to better match these innovations and their influence on the rehabilitation plan timetable. There is a growing appreciation for the multifaceted characteristics of the rehabilitation process and how they influence neuromuscular, educational, and psychobehavioral treatment goal achievement. Multiple sources may influence the athlete during the return to sports process and clinical outcome measures need to be refined to better evaluate these influences. This update summarizes contemporary ACL surgical, medical, and rehabilitation interventions and future trends.

Keywords: arthroscopy, knee, function, outcomes, decision-making

Introduction

This update provides an overview of knee surgical anatomy, neurological and biomechanical function, the influence of anterior cruciate ligament (ACL) injury on peripheral and central neurosensory and neuromotor function, upregulation of hip and downregulation of knee extensor muscle activation promoting a more hip biased knee extension strategy, contemporary ACL repair or reconstruction surgical approaches, the efficacy of biological augmentation methods such as platelet-rich plasma (PRP) and mesenchymal stem cells to facilitate ACL healing and remodeling, the evidence basis regarding postsurgical brace use, therapeutic exercise and psychobehavioral factor considerations, long-term neuromuscular function changes, the efficacy of returning to the same sport at the same intensity level, the influence of friends, family and significant others on athlete recovery, and improving clinical outcomes assessment efficacy.

34. PATELLA

Males hip weakness in PFP

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DO MALES WITH PATELLOFEMORAL PAIN HAVE POSTEROLATERAL HIP MUSCLE WEAKNESS?

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Background: Patellofemoral pain is common in physically active adults. Females with patellofemoral pain have been shown to have posterolateral hip muscle weakness, but there is a paucity of research examining hip muscle strength in males with patellofemoral pain.

Hypothesis/Purpose: The purpose of this study was to examine posterolateral hip muscle strength in males with patellofemoral pain compared to asymptomatic males. It was hypothesized that males with patellofemoral pain would have decreased strength of the hip extensor, hip external rotator, and hip abductor muscles compared to healthy, asymptomatic males.

Study Design: Descriptive, cross-sectional

Methods: Thirty-six adult males with patellofemoral pain and 36 pain-free males participated in the study. The patellofemoral pain group were required to have retropatellar pain reproduced by activities that loaded the patellofemoral joint (squatting, descending stairs, etc.). Peak isometric torque of the hip extensors, hip external rotators, and hip abductors was measured with an instrumented dynamometer. Torque was normalized by body mass and height. Between-group differences were analyzed with parametric or non-parametric tests, as appropriate. The level of significance was adjusted for multiple comparisons.

Results: Hip extensor torque was significantly reduced in the patellofemoral pain group compared to the control group ($p = .0165$). No differences were found between groups for the hip external rotators or hip abductors ($p > .0167$).

Conclusion: Males with patellofemoral pain appear to have weakness of the hip extensors, but unlike females with patellofemoral pain, they do not appear to have weakness of the hip abductors or hip external rotators. The findings of this study suggest that muscle strength factors associated with patellofemoral pain in males may be different from muscle strength factors in females. Clinicians examining and designing plans of care for male patients with patellofemoral pain should consider that the hip abductors and hip external rotators may not be weak in men with this condition.

Level of evidence: Level 3

Key words: Anterior knee pain, hip muscles, male, patellofemoral joint, strength testing

38 B. FOOT TYPES

Clubfoot surgery

Limitation of flatfoot surgery in overcorrected clubfeet after extensive surgery

Archives of Orthopaedic and Trauma Surgery — | April 10, 2018

Eberhardt O, et al.

Researchers evaluated the success of different surgical techniques, including tarsal osteotomies and arthrodesis, in correcting different types of flat feet. The hindfoot deformities were classified into rotational valgus, hinge valgus or translatory valgus based on AP standing X-rays. Findings suggested that for correcting flatfeet following extensive clubfoot surgery with rotational valgus and mild hinge valgus, tarsal osteotomies were successful methods. Authors found an inability of tarsal osteotomies to successfully correct flatfeet that had a translatory valgus. In such cases, double or triple arthrodesis was recommended. They noted a limited functional outcome by the preop range of motion and the appearance of talus deformities.

52. EXERCISE

Lunges

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ELECTROMYOGRAPHY OF THE HIP AND THIGH MUSCLES DURING TWO VARIATIONS OF THE LUNGE EXERCISE: A CROSS-SECTIONAL STUDY

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Background: The lunge is a closed kinetic chain exercise that athletes frequently use as part of training and rehabilitative programs. While typically performed on a stable surface, modifications include the use of balance platforms to create an unstable surface and suspension equipment. Suspension training exercises are theorized to be higher demand exercises and may be considered a progression from exercises on stable surfaces. Comparison of muscle recruitment between the suspended lunge and the standard lunge has not been reported.

Hypothesis and purpose: The purpose was to compare differences in muscle recruitment between a standard lunge and a suspended lunge. We hypothesized that hip and thigh muscle recruitment with a suspended lunge would be greater than a standard lunge due to less inherent support with the suspended lunge exercise.

Study Design: Analytic, observational cross-sectional study design.

Methods: Thirty healthy participants (15 male and 15 female) voluntarily participated in this study. Electromyographic (EMG) muscle recruitment was measured in five hip and thigh muscles while performing a standard and suspended lunge. EMG was expressed as a percentage of EMG with a maximal voluntary isometric contraction (MVIC).

Results: Recruitment was significantly greater in the suspended lunge condition compared to the standard lunge for the hamstrings ($p < .001$), gluteus medius ($p < .001$), gluteus maximus ($p < .001$), and adductor longus ($p < .001$). There was no significant difference in rectus femoris recruitment between conditions ($p = .154$).

Conclusion: Based on EMG findings, the suspended lunge is a more demanding exercise for hip muscles, compared to the standard lunge.

Level of evidence: Level 3 Mechanism-based reasoning intervention study trial.

Clinical relevance: The results of this study can assist clinicians in designing and progressing lower extremity exercise programs. With greater muscle recruitment, the suspended lunge is a more demanding exercise for hip muscles and can be considered a progression of the standard lunge as part of an exercise program

What is known about the subject? Muscle recruitment associated with the lunge exercise, variations of the lunge, and similar exercises has been reported. The use of suspension training exercise equipment has been reported for upper extremity exercises however not for the lower extremity. What does this study add to existing knowledge? Results of this study provide novel EMG information related to the lunge exercise using suspension training exercise equipment. Clinicians can use this information designing lower extremity exercise programs.

Exercise and amyloid formation

Exp Gerontol. 2018 Mar 28;108:62-68. doi: 10.1016/j.exger.2018.03.024.

Effects of aquatic and land-based exercises on amyloid beta, heat shock protein 27, and pulse wave velocity in elderly women.

Kim JH¹, Jung YS², Kim JW³, Ha MS¹, Ha SM¹, Kim DY⁴.

BACKGROUND:

Alzheimer's disease is a neurodegenerative brain disease resulting from the deterioration of neuronal cells and vascular dementia, the latter of which results from cerebrovascular disorders. Exercise is effective in preventing and treating degenerative brain diseases as it activates blood flow to the brain, increases nerve production in the hippocampus, and promotes the expression of synaptic plasticity-related proteins. Therefore, this study investigated the effects of 16-week aquatic and land-based exercise programs on amyloid beta (A β), heat shock protein (HSP) 27 levels, and pulse wave velocity (PWV).

MATERIALS AND METHODS:

Forty elderly women, aged 60-70 years, voluntarily participated in the study. They were divided into control (n = 12), aquatic exercise (n = 14), and land-based exercise groups (n = 14). The variables of amyloid beta, heat shock protein 27, and pulse wave velocity were measured in all the participants before and after the 16-week study.

RESULTS:

Significantly higher levels of serum HSP27 ($p < 0.05$) and significantly lower levels of vascular elasticity ($p < 0.05$) were found in the aquatic exercise group after 16 weeks of exercise compared with the control group. A β did not significantly differ between groups. Thirty minutes after the first exercise, A β in the aquatic exercise group ($p < 0.01$) and HSP27 in the land-based exercise group ($p < 0.05$) were significantly higher than the corresponding levels in the resting condition before exercise. 30 min after the last exercise, A β ($p < 0.01$) and HSP27 ($p < 0.05$) were significantly higher.

CONCLUSIONS:

Aquatic and land-based exercises increased serum A β and HSP27 and decreased pulse wave velocity. Thus, they may play a positive role in the prevention of degenerative brain diseases and improvement of brain function in elderly people.

Impact on aging

Association between exercise type and the decline in instrumental activities of daily living in community-dwelling older women: A 4-year prospective study

Preventive Medicine — | April 10, 2018

Osuka Y, et al.

In this 4-year prospective cohort study in Japan, researchers investigated the longitudinal links between exercise types and the onset of decline of instrumental activities of daily living (IADL) in community-dwelling older women aged ≥ 75 years who participated in 16 exercise types based on a face-to-face interview at baseline. Using the instrumental self-maintenance subscale of the Tokyo Metropolitan Institute of Gerontology index of competence, a decline in IADL was assessed.

Participation in calisthenics was found to be significantly and independently related to delayed IADL decline, indicating the possible utility of calisthenics in slowing IADL decline in this age group.

53. CORE**Scapula****Scapular Muscle Activity During Static Yoga Postures**

Authors: Jaclyn N. Chopp-Hurley, PhD¹, Courtney Prophet, BSc¹, Brynn Thistle, BSc¹, Jessica Pollice, BSc¹, Monica R. Maly, PT, PhD¹⁻³
26 DOI:10.2519/jospt.2018.7311

Study Design

Controlled laboratory study; cross-sectional.

Background

Despite the growing popularity of yoga, little is known about the muscle activity of the scapular stabilizers during isometric yoga postures and their potential utility in shoulder rehabilitation.

Objectives

To examine scapular stabilizer muscle activation during various yoga postures.

Methods

Twenty women with yoga experience and no shoulder pain or injury participated. Electromyography was used to record upper, middle and lower trapezius as well as serratus anterior muscle activity during 15 yoga postures.

Results

Muscle activity varied between yoga postures (3-57% maximum voluntary contraction (% MVIC)). Overall, the posture “locust arms forward” elicited the highest activity from the upper (22.4% MVIC), middle (41.8% MVIC) and lower (56.8% MVIC) trapezius, while several postures elicited moderate activity (>20% MVIC) from the serratus anterior. Alternatively, “dancer’s pose right”, “reverse tabletop”, and “warrior II” demonstrated low activity (≤15.7% MVIC) of the scapula stabilizers.

Conclusions

Strengthening the scapula stabilizer muscles is an important component of shoulder rehabilitation. Yoga postures have been identified that activate the scapular stabilizer muscles at varying levels of activity. *J Orthop Sports Phys Ther, Epub 6 Apr 2018. doi:10.2519/jospt.2018.7311*

Keyword: complementary therapies, electromyography, physical therapy exercises, rehabilitation, upper extremity

59. PAIN

Hypnosis

Hypnosis enhances the effects of pain education in patients with chronic non-specific low back pain: A randomized controlled trial

The Journal of Pain — | April 13, 2018

Rizzo RRN, et al.

is the first trial investigating the potential benefits of combining pain education (PE) with clinical hypnosis (CH) in individuals with chronic pain. Researchers randomized a total of 100 patients with chronic non-specific low back pain to receive either PE alone or PE plus CH. As per outcomes, adding hypnosis to PE results in improved outcomes over PE alone in patients with chronic non-specific low back pain. The study supported the efficacy of another treatment option for teaching patients to self-manage chronic low back pain that has a relatively low cost and that can be offered in groups.

Variation in pain sensitivity

J Pain. 2018 Mar 26. pii: S1526-5900(18)30115-9. doi: 10.1016/j.jpain.2018.02.017.

Individual Variation in Pain Sensitivity and Conditioned Pain Modulation in Acute Low Back Pain: Impact of Stimulus Type, Sleep, Psychological and Lifestyle Factors.

Klyne DM¹, Moseley GL², Sterling M³, Barbe MF⁴, Hodges PW⁵.

Generalised hyperalgesia and impaired pain modulation are reported in chronic low back pain (LBP).

Few studies have tested whether these features are present in the acute-phase. This study aimed to test for differences in pain presentation in early-acute LBP and evaluate the potential contribution of other factors to variation in sensitivity. Individuals within two weeks of onset of acute LBP (N=126) and pain-free controls (N=74) completed questionnaires related to their pain, disability, behaviour and psychological status before undergoing conditioned pain modulation (CPM) and pain threshold (heat, cold and pressure) testing at the back and forearm/thumb. LBP participants were more sensitive to heat and cold at both sites and pressure at the back than controls, without differences in CPM. Only those with high-pain (numerical rating scale, NRS \geq 4) were more sensitive to heat at the forearm and pressure at the back. Four subgroups with distinct features were identified: "high sensitivity", "low CPM efficacy", "high sensitivity/low CM efficacy", and "low sensitivity/high CPM efficacy". Various factors such as sleep and alcohol were associated with each pain measure.

Results provide evidence for generalised hyperalgesia in many, but not all, individuals during acute LBP, with variation accounted for by several factors. Specific pain phenotypes provide candidate features to test in longitudinal studies of LBP outcome.

Catastrophizing

J Pain. 2018 Mar 29. pii: S1526-5900(18)30121-4. doi: 10.1016/j.jpain.2018.03.010.

Catastrophizing, Solicitous Responses From Significant Others and Function in Individuals with Neuropathic Pain, Osteoarthritis or Spinal Pain in the General Population.

Glette M¹, Landmark T², Jensen MP³, Woodhouse A⁴, Butler S⁵, Borchgrevink PC⁴, Stiles TC².

That certain psychological factors are negatively associated with function in patients with chronic pain is well established.

However, few studies have evaluated these factors in individuals with chronic pain from the general population. The aims of this study were to (1) evaluate the unique associations between catastrophizing and perceived solicitous responses and psychological function, physical function and insomnia severity in individuals with neuropathic pain, osteoarthritis or spinal pain in the general population and to (2) determine if diagnosis moderates the associations found. Five-hundred-and-fifty-one individuals from the general population underwent examinations with a physician and physiotherapist, and a total of 334 individuals were diagnosed with either neuropathic pain (n=34), osteoarthritis (n=78) or spinal pain (n=222). Results showed that catastrophizing was significantly associated with reduced psychological and physical function, explaining 24% and 2% of variance respectively, while both catastrophizing and perceived solicitous responding were significantly and uniquely associated with insomnia severity, explaining 8% of the variance. Perceived solicitous responding was significantly negatively associated with insomnia severity. Moderator analyses indicated that (1) the association between catastrophizing and psychological function was greater among individuals with spinal pain and neuropathic pain than those with osteoarthritis and (2) the association between catastrophizing and insomnia was greater among individuals with spinal pain and osteoarthritis than those with neuropathic pain.

No statistically significant interactions including perceived solicitous responses were found. The findings support earlier findings of an association between catastrophizing and function among individuals with chronic pain in the general population, and suggest that diagnosis may serve a moderating role in some of these associations.

62 A. NUTRITION/VITAMINS**Animal protein****Patterns of plant and animal protein intake are strongly associated with cardiovascular mortality: the Adventist Health Study-2 cohort**

Marion Tharrey François Mariotti Andrew Mashchak Pierre Barbillon Maud Delattre Gary E Fraser

, <https://doi.org/10.1093/ije/dyy030>

Background

Current evidence suggests that plant and animal proteins are intimately associated with specific large nutrient clusters that may explain part of their complex relation with cardiovascular health. We aimed at evaluating the association between specific patterns of protein intake with cardiovascular mortality.

Methods

We selected 81 337 men and women from the Adventist Health Study-2. Diet was assessed between 2002 and 2007, by using a validated food frequency questionnaire. Dietary patterns based on the participants' protein consumption were derived by factor analysis. Cox regression analysis was used to estimate multivariate-adjusted hazard ratios (HRs) adjusted for sociodemographic and lifestyle factors and dietary components.

Results

There were 2276 cardiovascular deaths during a mean follow-up time of 9.4 years. The HRs for cardiovascular mortality were 1.61 [98.75% confidence interval (CI), 1.12 2.32; *P*-trend < 0.001] for the 'Meat' protein factor and 0.60 (98.75% CI, 0.42 0.86; *P*-trend < 0.001) for the 'Nuts & Seeds' protein factor (highest vs lowest quintile of factor scores). No significant associations were found for the 'Grains', 'Processed Foods' and 'Legumes, Fruits & Vegetables' protein factors. Additional adjustments for the participants' vegetarian dietary pattern and nutrients related to cardiovascular disease outcomes did not change the results.

Conclusions

Associations between the 'Meat' and 'Nuts & Seeds' protein factors and cardiovascular outcomes were strong and could not be ascribed to other associated nutrients considered to be important for cardiovascular health. Healthy diets can be advocated based on protein sources, preferring low contributions of protein from meat and higher intakes of plant protein from nuts and seeds.

Fat intake and skin CA

Fat intake and risk of skin cancer in US adults

Cancer Epidemiology, Biomarkers & Prevention — | April 12, 2018

Park MK, et al.

The relationship between fat intake and risk of skin cancer [cutaneous malignant melanoma, squamous cell carcinoma (SCC), and basal cell carcinoma (BCC)] was studied within two prospective studies; the Nurses' Health Study (NHS) and the Health Professionals Follow-up Study (HPFS). Higher omega-6 fat intake was shown to be associated with risks of SCC, BCC, and melanoma. A link was also noted between higher omega-6 fat intake and risk of BCC, but not SCC or melanoma. No other fats were shown to be related to melanoma risk. The links were noted to be similar in women and men and by other skin cancer risk factors. Overall, polyunsaturated fat intake was shown to be modestly related to skin cancer risk.

62 B. CRYOTHERAPY

Ice helped

A comparative trial of ice application vs EMLA cream in alleviation of pain during botulinum toxin injections for palmar hyperhidrosis

Clinical, Cosmetic and Investigational Dermatology — | April 10, 2018

Alsantali A

Researcher assessed the effectiveness of Eutectic Mixture of Local Anesthetics (EMLA) cream compared to ice application in alleviation of pain during botulinum toxin injections for palmar hyperhidrosis. The pain was evaluated using a Visual Analog Scale. Compared to the EMLA cream during Botox toxin injection for palmar hyperhidrosis, the successful use of ice application in reducing pain by 40% was noted. On the hands where EMLA cream was applied, the average pain score was 8.9, whereas it was 4.8 (± 0.9) in the ice group.