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2. LBP

Occupation and LBP

Occup Environ Med. 2016 Sep 26. pii: oemed-2015-103443. doi: 10.1136/oemed-2015-103443.

Contribution of occupational factors to the incidence and persistence of chronic low back pain among workers: results from the longitudinal VISAT study.

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Author information

OBJECTIVE:

Among the aetiological factors of chronic low back pain (CLBP), occupational factors are often suspected, but their contribution remains to be ascertained. This study aimed to determine the impact of a wide range of occupational factors on the incidence and persistence of CLBP.

METHOD:

From the VISAT (VIeillissement SAnté Travail) study, 1560 workers were examined at baseline and 5 years later. CLBP was defined as having low back pain or specific treatment for at least 6 months. Participants newly affected with CLBP and those with persistent CLBP at follow-up were distinguished. In addition to individual factors, a broad panel of occupational factors were analysed, covering employment, physical, organisational and psychosocial factors. Multivariate analyses were used to determine predictive factors of incidence and persistence of CLBP. Receiver operating characteristic (ROC) curves were performed to analyse the contribution of occupational factors.

RESULTS:

22.6% of participants without any CLBP initially presented with CLBP 5 years later, while 53.7% of participants with CLBP at baseline had CLBP at the second collection. Carrying heavy loads, the lack of recognition of completed work and productivity-related income predicted a higher risk of incidence of CLBP. However, no significant association between occupational factors and the risk for persistence of CLBP was observed, while the risk was multiplied by two for history of depression and rheumatological events. ROC curves confirmed the significant contribution of occupational factors to incidence of CLBP.

CONCLUSIONS:

Occupational factors played a pivotal role in the incidence of CLBP, while individual factors were the main determinants of persistence of CLBP.

Predicting potential of recovery

Eur J Pain. 2017 Jan 20. doi: 10.1002/ejp.976.

Predicting recovery in patients with acute low back pain: A Clinical Prediction Model.

da Silva T¹, Macaskill P², Mills K¹, Maher C², Williams C², Lin C², Hancock MJ¹.

Author information

BACKGROUND:

There is substantial variability in the prognosis of acute low back pain (LBP). The ability to identify the probability of individual patients recovering by key time points would be valuable in making informed decisions about the amount and type of treatment to provide. Predicting recovery based on presentation 1-week after initially seeking care is clinically important and may be more accurate than predictions made at initial presentation. The aim of this study was to predict the probability of recovery at 1-week, 1-month and 3-months after 1-week review in patients who still have LBP 1-week after initially seeking care.

METHODS:

The study sample comprised 1070 patients with acute LBP, with a pain score of ≥ 2 1-week after initially seeking care. The primary outcome measure was days to recovery from pain. Ten potential prognostic factors were considered for inclusion in a multivariable Cox regression model.

RESULTS:

The final model included duration of current episode, number of previous episodes, depressive symptoms, intensity of pain at 1-week, and change in pain over the first week after seeking care. Depending on values of the predictor variables, the probability of recovery at 1-week, 1-month and 3-months after 1-week review ranged from 4% to 59%, 19% to 91% and 30% to 97%, respectively. The model had good discrimination ($C = 0.758$) and calibration.

CONCLUSIONS:

This study found that a model based on five easily collected variables could predict the probability of recovery at key time points in people who still have LBP 1-week after seeking care.

SIGNIFICANCE:

A clinical prediction model based on five easily collected variables was able to predict the likelihood of recovery from an episode of acute LBP at three key time points. The model had good discrimination ($C = 0.758$) and calibration.

No prognosis from radiographs

Acta Neurochir (Wien). 2017 Feb;159(2):271-279. doi: 10.1007/s00701-016-3030-y. Epub 2016 Nov 21.

The usefulness of radiological grading scales to predict pain intensity, functional impairment, and health-related quality of life after surgery for lumbar degenerative disc disease.

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Author information

PURPOSE:

The goal of this study is to determine the relationship of radiological grading scales of lumbar degenerative disc disease (DDD) with postoperative pain intensity, functional impairment, and health-related quality of life (HRQoL).

METHODS:

Response to surgical treatment at 6 weeks (W6) on the visual analogue scale (VAS) for back and leg pain, Oswestry-Disability (ODI) and Roland-Morris Disability Index (RMDI), Timed Up and Go (TUG) test, EuroQol (EQ) 5D, and Short-Form Health-Survey (SF-12) physical component summary (PCS) was compared between patients with different Modic (MOD) and Pfirrmann (PFI) grades. Longitudinal outcomes at day 3 (D3), W6, 6 months (M6), and 1 year (Y1) were compared.

RESULTS:

The study included 338 patients (mean age, 58.6 years), of which n = 202 (59.8%) had MOD 1-3 and n = 217 (64.2%) PFI 4-5 changes. Patients with MOD 1-3 were as likely as patients without MOD changes to be treatment-responders at W6 in terms of VAS leg pain, ODI, RMDI, TUG, EQ5D, and SF-12 PCS. Similarly, patients with PFI 4-5 were as likely as patients with PFI 1-3 changes to be treatment-responders at W6. Longitudinal outcomes were similar at D3, W6, M6, and Y1 between patients with and without MOD changes. Patients with PFI 4-5 fared similar to those with PFI 1-3 except for inferior HRQoL on the SF-12 PCS metric at Y1.

CONCLUSIONS:

There was no distinct relationship between commonly used radiological grading scales of lumbar DDD with clinical outcome. Therefore, no prognosis should be made on the grounds of preoperative PFI and MOD classifications for patients undergoing spine surgery for lumbar DDD.

3. DISC

Expressions

ORIGINAL RESEARCH

Increased local expressions of CX3CL1 and CCL2 are related to clinical severity in lumbar disk herniation patients with sciatic pain

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DOI <https://doi.org/10.2147/JPR.S125914>

Background: Chemokines have been identified to be involved in the modulation of pain through both peripheral and central mechanisms. However, the role of chemokines in lumbar disk herniation (LDH) with sciatic pain remains unknown.

Objective: The current study was performed to explore the expression of two most commonly

studied chemokines CX3CL1 and CCL2 and assess their associations with clinical severity in LDH patients with sciatic pain.

Methods: The soft tissues around nerve root (STANR), annulus fibrosus (AF), and nucleus pulposus (NP) biopsies were obtained from 36 LDH patients with chronic sciatic pain and 10 scoliosis patients (painless controls). The serum and local expressions of CX3CL1 and CCL2 were determined using enzyme-linked immunosorbent assay and Western blot analysis, respectively. The visual analog scale (VAS) scores for low back pain and lower extremity pain and Japanese Orthopaedic Association (JOA) scores were recorded on the day of hospital admission to evaluate the clinical severity. LDH patients with sciatic pain were divided into severe pain (SP) group (VAS \geq 7; n=18) and mild-to-moderate pain (M-MP) group (VAS $<$ 7; n=18) for lower extremity pain.

Results: Local expressions instead of CX3CL1 and CCL2 in STANR, AF, and NP were significantly higher in the SP group than in M-MP compared with scoliosis painless group. Expressions of both CX3CL1 and CCL2 in STANR and AF were positively correlated with VAS scores for lower extremity and for low back pain, respectively. In addition, CX3CL1 and CCL2 expressions in STANR were negatively associated with JOA scores. There were no significant differences of serum CX3CL1 and CCL2 levels among SP group, M-MP group, and scoliosis painless group.

Conclusion: Both CX3CL1 and CCL2 may play important roles in maintaining pain in LDH patients. Local blockade of CX3CL1 and CCL2 in LDH patients with persistent pain deserves further intensive study.

7. PELVIC ORGANS/WOMAN'S HEALTH

Caffeine and fetus

Matern Child Health J. 2017 Jan 21. doi: 10.1007/s10995-016-2230-7.

Caffeine Intake During Pregnancy in Different Intrauterine Environments and its Association with Infant Anthropometric Measurements at 3 and 6 Months of Age.

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Author information

Objective To investigate the association between maternal caffeine intake during pregnancy and infant anthropometric measurements at age 3 and 6 months.

Methods Longitudinal observational study of mother-child pairs stratified into five groups: diabetic women (DM), hypertensive women (HYP), smoking mothers (SMO), mothers of infants small for gestational age (SGA), and controls (CTL). Pairs were recruited from three public hospitals in Porto Alegre, Brazil, from 2011 to 2015, using a convenience sampling strategy. The Food Frequency Questionnaire (FFQ) was administered on postpartum day 7 to evaluate maternal

caffeine intake during pregnancy. The anthropometric measurements of interest (weight, length, and skinfold thickness) were assessed at birth and at age 3 and 6 months. Linear regression was used to analyze the interaction between caffeine intake and skinfold thickness.

Results Overall, 272 mother-child pairs were investigated (41 DM, 26 HYP, 68 SMO, 25 SGA, and 112 CTL). There were no differences in anthropometric measurements between infants born to mothers who had and had not consumed caffeine during pregnancy ($P > 0.05$). Children of mothers in the DM group had the highest adjusted average skinfold thicknesses at 3 months. An interaction between maternal caffeine intake during pregnancy and the sum of skinfolds at age 3 months was found in the DM and CTL groups ($P < 0.05$). However, significant differences were not observed at 6 months.

Conclusions Maternal caffeine intake influenced infants skinfold thickness measurements at 3 months of age. This parameter was reduced in infants born to mothers with DM and increased in those born to healthy control mothers

Insomnia and childbirth

Insomnia before and after childbirth: The risk of developing postpartum pain—A longitudinal population-based study☆

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Malin Eberhard-Gran

DOI: <http://dx.doi.org/10.1016/j.ejogrb.2017.01.020>

Objective

To examine if insomnia before and after childbirth predicts the development of postpartum bodily pain.

Methods

This study is part of a longitudinal cohort study, the Akershus Birth Cohort Study, which targeted all women giving birth at Akershus University Hospital in Norway. The current sample is comprised of 1480 women who participated at all three time points, yielding a participation rate

of 32% of the 4662 women who originally consented to participate. The Bergen Insomnia Scale (BIS) was used to measure insomnia and a latent profile analysis (LPA) was used to identify subsets of women who shared a similar pattern of responses on the BIS-scale across the three time points. Pain was measured using the bodily pain scale, derived from the Primary Care Evaluation of Mental Disorders (PRIME-MD) and symptoms of depression were measured by the Edinburgh Postnatal Depression Scale (EPDS).

Results

Using a latent profile analysis a three class model showed the best fit and identified one major group (55.6%) with a low BIS scores across all three time points, one group with intermediate BIS scores (32.9%), and a smaller group (11.5%) with higher BIS scores across all three times. The chronic high insomnia group had a 2.8-fold increased risk of reporting high levels of bodily pain. The chronic intermediate group was associated with a 2.2-fold increased risk of bodily pain at two years postpartum. Adjusting for demographics and lifestyle behaviors did not reduce any of the associations, while adjusting for depression significantly attenuated the associations. Additional adjustment for pain at eight weeks postpartum further reduced the magnitude of the associations, but both chronic intermediate insomnia and chronic high insomnia remained strongly associated with the onset of bodily pain in the fully adjusted models (RR = 1.75, 95% CI: 1.37–2.23) and RR = 1.63, 95% CI: 1.15–2.32, respectively).

Conclusions

The high prevalence of insomnia among women during and after childbirth, in combination with the strong prospective association with impaired physical health, emphasizes the importance of adequately identifying, preventing and treating insomnia for this population.

Seafood and pre-terms

BMC Pregnancy Childbirth. 2017 Jan 19;17(1):41. doi: 10.1186/s12884-017-1225-8.

Maternal intake of seafood and supplementary long chain n-3 poly-unsaturated fatty acids and preterm delivery.

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Author information

Abstract

BACKGROUND:

Preterm delivery increases the risk of neonatal morbidity and mortality. Studies suggest that maternal diet may affect the prevalence of preterm delivery. The aim of this study was to assess whether maternal intakes of seafood and marine long chain n-3 polyunsaturated fatty acids (LCn-3PUFA) from supplements were associated with preterm delivery.

METHODS:

The study population included 67,007 women from the Norwegian Mother and Child Cohort Study. Maternal food and supplement intakes were assessed by a validated self-reported food

frequency questionnaire in mid-pregnancy. Information about gestational duration was obtained from the Medical Birth Registry of Norway. We used Cox regression to estimate hazard ratios (HR) with 95% confidence intervals (CI) for associations between total seafood, lean fish, fatty fish, and LCn-3PUFA intakes and preterm delivery. Preterm was defined as any onset of delivery before gestational week 37, and as spontaneous or iatrogenic deliveries and as preterm delivery at early, moderate, and late preterm gestations.

RESULTS:

Lean fish constituted 56%, fatty fish 34% and shellfish 10% of seafood intake. Any intake of seafood above no/rare intake (>5 g/d) was associated with lower prevalence of preterm delivery. Adjusted HRs were 0.76 (CI: 0.66, 0.88) for 1-2 servings/week (20-40 g/d), 0.72 (CI: 0.62, 0.83) for 2-3 servings/week (40-60 g/d), and 0.72 (CI: 0.61, 0.85) for ≥3 servings/week (>60 g/d), p-trend <0.001. The association was seen for lean fish (p-trend: 0.005) but not for fatty fish (p-trend: 0.411). The intake of supplementary LCn-3PUFA was associated only with lower prevalence of early preterm delivery (before 32 gestational weeks), while increasing intake of LCn-3PUFA from food was associated with lower prevalence of overall preterm delivery (p-trend: 0.002). Any seafood intake above no/rare was associated with lower prevalence of both spontaneous and iatrogenic preterm delivery, and with lower prevalence of late preterm delivery.

CONCLUSIONS:

Any intake of seafood above no/rare consumption was associated with lower prevalence of preterm delivery. The association was stronger for lean than for fatty fish. Intake of supplementary LCn-3PUFA was associated only with early preterm delivery. The findings corroborate the current advice to include fish and seafood as part of a balanced diet during pregnancy.

Sleep and preeclampsia

Obstet Gynecol. 2017 Jan;129(1):31-41. doi: 10.1097/AOG.0000000000001805.

Association Between Sleep-Disordered Breathing and Hypertensive Disorders of Pregnancy and Gestational Diabetes Mellitus.

Facco FL¹, Parker CB, Reddy UM, Silver RM, Koch MA, Louis JM, Basner RC, Chung JH, Nhan-Chang CL, Pien GW, Redline S, Grobman WA, Wing DA, Simhan HN, Haas DM, Mercer BM, Parry S, Mobley D, Hunter S, Saade GR, Schubert FP, Zee PC.

Author information

Abstract

OBJECTIVE:

To estimate whether sleep-disordered breathing during pregnancy is a risk factor for the development of hypertensive disorders of pregnancy and gestational diabetes mellitus (GDM).

METHODS:

In this prospective cohort study, nulliparous women underwent in-home sleep-disordered breathing assessments in early (6-15 weeks of gestation) and midpregnancy (22-31 weeks of gestation). Participants and health care providers were blinded to the sleep test results. An apnea-

hypopnea index of 5 or greater was used to define sleep-disordered breathing. Exposure-response relationships were examined, grouping participants into four apnea-hypopnea index groups: 0, greater than 0 to less than 5, 5 to less than 15, and 15 or greater. The study was powered to test the primary hypothesis that sleep-disordered breathing occurring in pregnancy is associated with an increased incidence of preeclampsia. Secondary outcomes were rates of hypertensive disorders of pregnancy, defined as preeclampsia and antepartum gestational hypertension, and GDM. Crude and adjusted odds ratios and 95% confidence intervals (CIs) were calculated from univariate and multivariate logistic regression models.

RESULTS:

Three thousand seven hundred five women were enrolled. Apnea-hypopnea index data were available for 3,132 (84.5%) and 2,474 (66.8%) women in early and midpregnancy, respectively. The corresponding prevalence of sleep-disordered breathing was 3.6% and 8.3%. The prevalence of preeclampsia was 6.0%, hypertensive disorders of pregnancy 13.1%, and GDM 4.1%. In early and midpregnancy the adjusted odds ratios for preeclampsia when sleep-disordered breathing was present were 1.94 (95% CI 1.07-3.51) and 1.95 (95% CI 1.18-3.23), respectively; hypertensive disorders of pregnancy 1.46 (95% CI 0.91-2.32) and 1.73 (95% CI 1.19-2.52); and GDM 3.47 (95% CI 1.95-6.19) and 2.79 (95% CI 1.63-4.77). Increasing exposure-response relationships were observed between apnea-hypopnea index and both hypertensive disorders and GDM.

CONCLUSION:

There is an independent association between sleep-disordered breathing and preeclampsia, hypertensive disorders of pregnancy, and GDM.

8. VISCERA

Seafood and CR CA

Gut. 2016 Jul 19. pii: gutjnl-2016-311990. doi: 10.1136/gutjnl-2016-311990

Marine ω -3 polyunsaturated fatty acid intake and survival after colorectal cancer diagnosis.

Song M¹, Zhang X², Meyerhardt JA³, Giovannucci EL⁴, Ogino S⁵, Fuchs CS⁶, Chan AT⁷.

Author information

OBJECTIVE:

Experimental evidence supports an antineoplastic activity of marine ω -3 polyunsaturated fatty acids (ω -3 PUFAs; including eicosapentaenoic acid, docosahexaenoic acid and docosapentaenoic acid). However, the influence of ω -3 PUFAs on colorectal cancer (CRC) survival is unknown.

DESIGN:

Within the Nurses' Health Study and Health Professionals Follow-up Study, we prospectively studied CRC-specific and overall mortality in a cohort of 1659 patients with CRC according to intake of marine ω -3 PUFAs and its change after diagnosis.

RESULTS:

Higher intake of marine ω -3 PUFAs after CRC diagnosis was associated with lower risk of CRC-specific mortality (p for trend=0.03). Compared with patients who consumed <0.10 g/day of marine ω -3 PUFAs, those consuming at least 0.30 g/day had an adjusted HR for CRC-specific mortality of 0.59 (95% CI 0.35 to 1.01). Patients who increased their marine ω -3 PUFA intake by at least 0.15 g/day after diagnosis had an HR of 0.30 (95% CI 0.14 to 0.64, p for trend <0.001) for CRC deaths, compared with those who did not change or changed their intake by <0.02 g/day. No association was found between postdiagnostic marine ω -3 PUFA intake and all-cause mortality (p for trend=0.47).

CONCLUSIONS:

High marine ω -3 PUFA intake after CRC diagnosis is associated with lower risk of CRC-specific mortality. Increasing consumption of marine ω -3 PUFAs after diagnosis may confer additional benefits to patients with CRC.

13. CRANIUM/TMJ

Maxillary expanders

Orthod Craniofac Res. 2017 Feb;20(1):21-29. doi: 10.1111/ocr.12136.

Phonetic analysis during treatment with rapid maxillary expander.

Biondi E¹, Bandini A^{2,3}, Lombardo L¹, Orlandi S², Siciliani G¹, Manfredi C².

Author information

Abstract

OBJECTIVES:

To investigate possible changes and/or device-related impairments in phonetic habits produced by rapid maxillary expansion (RME).

MATERIALS AND METHODS:

Thirty-five patients scheduled for RME were divided into two groups: Group A (banded two-arm Hyrax) and Group B (banded four-arm Hyrax). Speech samples were collected at six time points, before, during and after RME removal. Acoustical analysis was performed using PRAAT and

BioVoice analysis tools. Ten volunteers completed a questionnaire on the acceptability of patient's speech. Maxillary dimensions and palatal volume were measured on dental casts before and after expansion using a digital gauge.

RESULTS:

Voice analysis showed an increase in the peak frequency of fricative consonants (/s/,/ʃ/) after expansion, whereas there was no change of formant frequencies of palatal consonants (/ɲ/,/ʎ/). Vowel /i/ displayed a lowering of the first formant frequency, and an increase in the second and third formant frequencies. After bonding, Group B showed both a greater reduction in the peak frequency of fricatives and a greater increase in the formant frequencies of palatal consonants than Group A.

CONCLUSION:

Rapid maxillary expansion causes a slight phonetic change in the acoustical parameters of both consonants and vowels. The two-arm Hyrax caused less speech impairment than the four-arm Hyrax during the treatment.

Splint therapy for TMD

Evaluation of the role of splint therapy in the treatment of temporomandibular joint pain on the basis of MRI evidence of altered disc position

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DOI: <http://dx.doi.org/10.1016/j.jcms.2017.01.011>

Highlights

- Investigation of whether splint therapy facilitates improvement of condyle and disc motions.
- Splint-related anterior movement of the condyle was associated with TMJ pain.
- Splint therapy was not likely to be successful for any kind of TMJ abnormalities.

Summary

Objective

To clarify whether altering temporomandibular joint (TMJ) condyle and disc positions by occlusal splint (splint) therapy relieves TMJ pain and to determine whether splint therapy facilitates improvement of the ranges of condyle and articular disc motions.

Study Design

A total of 150 joints of 75 patients admitted with TMJ pain/discomfort were evaluated. A visual analog scale for TMJ pain was administered during visits following the start of splint treatment. At the start of splint treatment, MRI was performed with/without splint insertion, after which condyle/disc movements were evaluated. Disc position and function, disc configuration, joint effusion, osteoarthritis, and the bone marrow were evaluated. Pearson's correlation coefficients, linear regression, and multiple regression analyses were used for statistical analysis.

Results

Splint-related anterior movement of the condyle was related to TMJ pain. With a biconvex disc and/or bone marrow abnormality, splint treatment was ineffective for reducing TMJ pain.

Conclusion

Splint therapy was not likely to be successful for any kind of TMJ abnormalities, such as bone marrow abnormalities and/or a biconvex disc appearance on MRI.

Oral health

Int J Dent Hyg. 2017 Jan 23. doi: 10.1111/idh.12266

Oral health-related quality of life in patients with temporomandibular disorders: A case-control study considering psychological aspects.

Bayat M¹, Abbasi AJ², Noorbala AA³, Mohebbi SZ⁴, Moharrami M¹, Yekaninejad MS⁵.

Author information

Abstract

OBJECTIVES:

This case-control study aimed to compare patients with temporomandibular disorders (TMD) and healthy controls in terms of oral health-related quality of life (OHRQoL) considering Graded Chronic Pain Scale (GCPS) scores, pain duration, psychological impairment and demographic characteristics.

METHODS:

A total of 75 patients with TMD and 75 healthy controls were recruited. The short version of Oral Health Impact Profile (OHIP-14) was administered for evaluating the OHRQoL. Psychosocial impairments were assessed using the General Health Questionnaire-28 (GHQ-28). The Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD) axis I and II were also used for patient diagnosis and collecting GCPS scores, pain duration, age and gender. Independent-sample t tests, Pearson's chi-square tests and multiple logistic and linear regression models were applied for statistical analysis.

RESULTS:

The mean age of the patients was 34.3±12.4 years. A female-to-male ratio of 6:1 was seen in the TMD group. The prevalence and severity of the OHIP were significantly different between the TMD and control groups (66.7% vs 12.0% and 18.0 vs 9.2, respectively). According to multiple logistic regression for OHIP prevalence and multiple linear regression for OHIP severity in the TMD group, GCPS scores and pain duration, followed by psychological impairment, were the most important predictors of the OHRQoL.

CONCLUSION:

TMD negatively affected the OHRQoL, particularly in patients with psychological impairments. Meanwhile, age and gender did not seem to have a serious effect. Hence, promoting the quality of life of patients with TMD requires emphasis on chronic pain management and maintaining good mental health.

Dry needling helps

Acupunct Med. 2016 Oct 3. pii: acupmed-2016-011102. doi: 10.1136/acupmed-2016-011102.

Effects of myofascial trigger point dry needling in patients with sleep bruxism and temporomandibular disorders: a prospective case series.

Blasco-Bonora PM¹, Martín-Pintado-Zugasti A².

Author information

Abstract

OBJECTIVES:

To investigate the effects of deep dry needling (DN) of myofascial trigger points (MTrPs) of the masseter and temporalis on pain, pressure pain threshold (PPT), pain-free maximal jaw opening and temporomandibular disorder (TMD)-related disability in patients with sleep bruxism (SB) and myofascial TMD.

METHODS:

Seventeen subjects (11 women, 6 men) aged 39±13 years (range 23-66) diagnosed with SB and myofascial TMD were invited to participate in this prospective case series study. Each subject received a deep DN intervention in the masseter and temporalis MTrPs. Pain intensity, PPT, pain-free maximal jaw opening and TMD-related disability were assessed before treatment, immediately after treatment and at 1-week follow-up. Jaw disability was assessed using the jaw disability checklist (JDC) at baseline and 1 week post-treatment only.

RESULTS:

One-way analyses of variance showed significant improvements in pain intensity, PPT and jaw opening ($p<0.001$). Post-hoc analysis revealed significant differences between baseline and post-intervention follow-up time points in pain (immediate: Cohen's $d=1.72$, $p<0.001$; 1 week: $d=3.24$, $p<0.001$), jaw opening (immediate: $d=0.77$, $p<0.001$; 1 week: $d=1.02$, $p<0.001$) and PPT in the masseter (immediate: $d=1.02$, $p<0.001$; 1 week: $d=1.64$, $p<0.001$) and temporalis (immediate: $d=0.91$, $p=0.006$; 1 week: $d=1.8$, $p<0.001$). A dependent t-test showed a significant improvement in jaw functioning, reflected by a large reduction in 1-week JDC scores relative to baseline ($d=3.15$, $p<0.001$).

CONCLUSIONS:

Deep DN of active MTrPs in the masseter and temporalis in patients with myofascial TMD and SB was associated with immediate and 1-week improvements in pain, sensitivity, jaw opening and TMD-related disability

IBD and oral health

J Clin Periodontol. 2017 Jan 24. doi: 10.1111/jcpe.12698.

Inflammatory bowel disease and oral health: systematic review and a meta-analysis.

Papageorgiou SN¹, Hagner M², Nogueira AV³, Franke A⁴, Jäger A⁵, Deschner J⁶.

Author information

Abstract

BACKGROUND:

The objective of this systematic review was to systematically investigate whether there is an association between inflammatory bowel disease (IBD) and oral health.

METHODS:

Literature searches for randomized and non-randomized studies were performed up to January 2017. Risk of bias within studies was assessed with the Downs and Black checklist. Across-

studies risk of bias was assessed with the GRADE framework. Quantitative synthesis was conducted with random-effects meta-analyses.

RESULTS:

A total of 9 cross-sectional studies including 1 297 patients were included. IBD was associated with increased risk of periodontitis (332 more patients per 1 000 patients; 95% confidence interval: 257 to 388 patients; $p < 0.001$) compared to non-IBD patients. Additionally, the Decayed-Missing-Filled-Teeth index of IBD patients was significantly worse than non-IBD patients (mean difference: 3.85; 95% CI: 2.36 to 5.34; $p = 0.005$). Patients with ulcerative colitis had considerably worse oral health for most of the assessed factors, while the quality of overall evidence ranged from high to low, due to observational nature of contributing studies.

CONCLUSIONS:

IBD was associated with significantly higher risk of periodontitis and worse oral health compared to non-IBD patients. However, longitudinal studies are needed in order to establish a causality link between IBD and periodontal disease. This article is protected by copyright. All rights reserved.

Sleep apnea and bone density

Osteoporos Int. 2017 Jan 18. doi: 10.1007/s00198-017-3912-8.

Association between sleep apnea and low bone mass in adults: a systematic review and meta-analysis.

Eimar H¹, Saltaji H², Ghorashi S³, Isfeld D², MacLean JE⁴, Gozal D⁵, Graf D², Flores-Mir C².
Author information

Abstract

We performed a systematic review of the literature to assess the association between sleep apnea and bone metabolism diseases including osteoporosis in adult population. Results from clinical trials suggest that the association between sleep apnea and low bone mass in adults is possible.

INTRODUCTION:

This study aimed to synthesize existing evidence on the potential association between sleep apnea and low bone mass in adults.

METHODS:

Electronic searches of five databases were performed. The inclusion criteria consisted of studies in humans that assessed potential associations between sleep apnea and bone metabolic diseases in an adult population. For diagnosis of sleep apnea overnight polysomnography, home polygraphy, or validated records from healthcare databases were considered. Reduced bone density, osteoporosis, serum/urinary levels for markers of bone formation and resorption, or risk of fractures caused without history of trauma were considered indicators of low bone mass. A random-effects model meta-analysis was applied when possible.

RESULTS:

Of the 963 relevant references, 12 studies met our inclusion criteria and were assessed to be of medium to low bias. Nine out of 12 studies reported an association between sleep apnea and low bone mass (increased bone resorption markers, reduced bone density, and higher risk of osteoporosis). Two studies did not report a significant association, whereas one study reported an increase of bone density in sleep apnea patients compared to non-sleep apnea patients. Meta-analysis of 2 studies (n = 112,258 patients) showed that sleep apnea was a significant risk factor for osteoporosis (odds ratio (OR), 1.92; 95% CI, 1.24 to 2.97; $I^2 = 66\%$); females only had an OR of 2.56 (95% CI, 1.96 to 3.34; $I^2 = 0\%$) while the OR in males was 2.03 (95% CI, 1.24 to 3.35; $I^2 = 38\%$).

CONCLUSIONS:

An association between sleep apnea and low bone mass in adults is plausible, but supporting evidence has a risk of bias and is inconsistent

14. HEADACHES**CBT and HA's**

J Pain. 2017 Jan 17. pii: S1526-5900(17)30016-0. doi: 10.1016/j.jpain.2017.01.002.

Trajectory of Improvement in Children and Adolescents with Chronic Migraine: Results from the Cognitive Behavioral Therapy and Amitriptyline Trial.

Kroner JW¹, Peugh J², Kashikar-Zuck SM², LeCates SL³, Allen JR⁴, Slater SK⁵, Zafar M¹, Kabbouche MA⁶, O'Brien HL⁶, Shenk CE², Kroon Van Diest AM¹, Hershey AD⁶, Powers SW⁷.

Author information

Abstract

We compared headache frequency trajectories between clinical trial participants who received cognitive behavioral therapy plus amitriptyline (CBT+A) or headache education plus amitriptyline (HE+A) to determine if there was differential time course of treatment response between the groups.

135 patients (age 10-17) diagnosed with chronic migraine participated, attending 8 one-hour one-on-one CBT or HE sessions with a trained psychologist for 8 weekly sessions, 2 sessions at weeks 12 and 16, and a post-treatment visit at week 20. Participants kept daily headache diaries and completed take-home assignments between visits. Data from daily headache diaries are presented for each day and by 28-day periods. Trajectories of improvement indicate initial decrease in headache days began during the first month of treatment, for both groups, and continued to decrease throughout treatment. The CBT+A group had greater daily improvement than the HE+A group.

A significantly higher proportion of the CBT+A group had a $\geq 50\%$ reduction in headache days each month, and a significantly higher proportion of the CBT+A group had ≤ 4 headache days per month in months 3 through 5. Results indicate the trajectory of decrease in headache days is significantly better for patients receiving CBT+A versus HE+A.

PERSPECTIVE:

This article presents daily information about headache frequency over a 20-week clinical trial. Youth with chronic migraine who received cognitive behavioral therapy and amitriptyline improved faster than those in the control group. Findings provide clinicians with evidence-based expectations for treatment response over time and ways of monitoring treatment success.

20 A. ROTATOR CUFF

Supraspinatus

J Shoulder Elbow Surg. 2017 Jan 10. pii: S1058-2746(16)30481-5. doi: 10.1016/j.jse.2016.09.041.

Tendon vascularity in overhead athletes with subacromial pain syndrome and its correlation with the resting subacromial space.

Tsui SS¹, Leong HT¹, Leung VY², Fu SN³.

Author information

Abstract

BACKGROUND:

Supraspinatus tendinopathy is one of the common causes of subacromial pain syndrome (SAPS) in overhead athletes. Changes in tendon vascularity have been reported in painful tendons; however, the prevalence and distribution have not been investigated in young overhead athletes.

METHODS:

We conducted a cross-sectional study of 47 overhead athletes (male, 31; female, 16) aged 18 to 36 years with SAPS for >3 months. A sonographer graded the severity of the tendinopathy and area of vascularization. Ultrasound imaging was used to measure supraspinatus tendon thickness, vascularity, and resting subacromial space. A self-written program was used to semiquantify the intensity of vascularity, expressed as the vascular index.

RESULTS:

The majority (87.2%) of the participants had signs of tendinopathy in the supraspinatus tendon, and 40 (85.1%) of the tendinopathic tendons had vascularity. The majority (66.0%) of the vascularized subjects presented with minimal increase in vascularity, and 19.1% had moderate to severe vascularization. Most (79.2%) of the vascularization was observed in the pericortical region. The vascular index was negatively correlated with the resting subacromial space in male athletes with a reduced subacromial space ($\rho = -0.63$; $P = .038$).

CONCLUSION:

Of overhead athletes with SAPS, 87.2% had supraspinatus tendinopathy with minimal to moderate vascularization, with the majority of vascularization occurring in the pericortical region. In male athletes with a reduced subacromial space, greater vascularity in the supraspinatus tendon was associated with a smaller resting subacromial space.

Subscapularis repair

Arthroscopy. 2017 Jan 9. pii: S0749-8063(16)30892-1. doi: 10.1016/j.arthro.2016.10.020.

Arthroscopic Repair of Isolated Subscapularis Tears: A Systematic Review of Technique-Specific Outcomes.

Saltzman BM¹, Collins MJ¹, Leroux T¹, Arns TA¹, Griffin JW¹, Romeo AA¹, Verma NN¹, Forsythe B².

Author information

Abstract

PURPOSE:

To systematically review the literature to identify all studies reporting outcomes of arthroscopically repaired isolated subscapularis tears, to (1) report outcomes across all repair techniques, (2) compare outcomes by arthroscopic technique, and (3) highlight the frequency and management of associated long head of biceps pathology, and the influence of these concomitant procedures on outcomes following arthroscopic subscapularis repair.

METHODS:

A systematic literature review was conducted using the MEDLINE, Embase, and Scopus databases with the following term: ("isolated repair" AND "arthroscopic subscapularis tear"). Only studies evaluating the techniques and outcomes of isolated subscapularis repair were included. Data were extracted, including patient characteristics, surgical technique, and outcomes. Descriptive analysis was provided for the available literature.

RESULTS:

Eight studies were included in this review. Uniformly, improvements in patient-reported outcome scores were substantial after arthroscopic subscapularis repair. Constant Total scores improved in each individual study from preoperative to postoperative (range, Δ 18.8- Δ 49.8 points), as did Strength (range, Δ 1.3- Δ 13.7 points), Pain (range, Δ 7.6- Δ 8.9 points), Range of Motion (range, Δ 7.3- Δ 13.3 points), and Activities of Daily Living (range, Δ 8.7- Δ 10.2 points) subscores. Significant improvements were seen in most individual studies for belly-press (Δ 21.6 N or Δ 1.9 out of 5) and lift-off strength (Δ 24.3 N or Δ 1.7- Δ 1.9 out of 5), range of motion in forward flexion (29.1° - 37.0°), external rotation (10.3° - 16.0°), and internal rotation. Complications were relatively infrequent overall, with 5 studies reporting no complications, and the remaining 3 studies with rerupture rates between 4.8% and 11.8%. Studies that used only double-row repair reported fewer complications (0% vs 5%-10%) and better outcome scores than single-row repair, similar to those studies that uniformly performed biceps tenodesis compared with no biceps intervention.

CONCLUSIONS:

This descriptive study highlights that arthroscopic subscapularis repair appears to be a reasonable option for the treatment of isolated tears of the subscapularis to obtain successful functional and patient-reported clinical outcomes. Its findings also pose the question of whether future prospective, comparative studies will find double-row surgical fixation and concomitant biceps tenodesis surgery to be superior to single-row fixation and leaving the biceps alone.

22 A. IMPINGMENT**Radiographic evidence**

Arthroscopy. 2017 Jan 4. pii: S0749-8063(16)30890-8. doi: 10.1016/j.arthro.2016.10.018.

Comparison of Radiographs and Computed Tomography for the Screening of Anterior Inferior Iliac Spine Impingement.

Schindler BR¹, Venderley MB¹, Mikula JD¹, Chahla J¹, Dornan GJ¹, Turnbull TL¹, LaPrade RF², Philippon MJ³.

Author information

Abstract

PURPOSE:

To compare radiographic and 3-dimensional (3D) computed tomography (CT) imaging modalities for the screening of anterior inferior iliac spine (AIIS) impingement by establishing imaging measurement related to the AIIS.

METHODS:

Anteroposterior and false-profile radiographs and 3D CT scans were obtained on 10 human cadaveric pelvises. On the anteroposterior view for each methodology, 2 measurements were calculated: distance to the most lateral AIIS from the 12 o'clock position on the acetabular rim, and the angle between the lateral AIIS and the sagittal plane. On the false-profile view for each methodology, 2 measurements were calculated: distance to the anterior AIIS from the 12 o'clock position on the acetabular rim, and the angle between the anterior AIIS and the sagittal plane. Inter-rater and intrarater reliability analyses were performed for both methods in addition to an intermethod analysis.

RESULTS:

The radiographic false-profile view was the most repeatable orientation, with intraclass correlation coefficients showing excellent reproducibility in both inter-rater (angle: 0.980, distance: 0.883) and intrarater (angle: 0.995, distance: 0.995) analyses. The mean distance from the 12 o'clock position of the acetabular rim to the most anterior/lateral aspect of the AIIS was 41.4 mm and 16.0 mm on the radiographic false-profile and anteroposterior views, respectively. Intermethod analysis showed a systematic, quantitative bias between modalities (anteroposterior view: -4.1 mm, 6.7°; false-profile view: -0.1 mm, 8.3°), which will remain relatively consistent as evidenced by the strong individual reproducibility of each measurement.

CONCLUSIONS:

AIIS morphology in relation to the acetabular rim 12 o'clock position and its angle relative to the sagittal plane can be quantitatively determined using either radiographic or 3D CT imaging modalities.

CLINICAL RELEVANCE:

Radiographic evaluation may be a valuable tool in the screening of AIIS impingement.

30 A. IMPINGEMENT

Temporal summation increases post-surgical pain

Pain. 2017 Feb;158(2):323-332. doi: 10.1097/j.pain.0000000000000764.

Facilitated temporal summation of pain correlates with clinical pain intensity after hip arthroplasty.

Izumi M¹, Petersen KK, Laursen MB, Arendt-Nielsen L, Graven-Nielsen T.

Author information

Abstract

Widespread hyperalgesia has been found in patients with painful hip osteoarthritis (OA) which can be normalized after total hip arthroplasty (THA) if patients have no residual postoperative pain.

This study characterized the preoperative somatosensory profiles and provided possible interpretation of underlying pain mechanisms that might influence the development of postoperative pain. Forty hip OA patients with unilateral pain were assessed before and 6 weeks

post-THA and compared with 40 asymptomatic control subjects. Hip pain intensity at rest and while walking was assessed on a visual analogue scale (VAS). Bilateral cuff algometry from the thighs was used to assess the cuff pressure pain thresholds, pressure values at VAS scores equal with 6 cm (PVAS6), cuff pressure tolerance, and temporal summation of pain (TSP) quantified by an increase in VAS scores to repeated phasic cuff stimulations. Correlations between hip pain VAS post-THA and preoperative quantitative sensory testing results were analyzed. Post-THA hip pain VAS scores decreased ($P < 0.05$) compared with pre-THA. The cuff pressure pain threshold, PVAS6, and cuff pressure tolerance were significantly lower bilaterally in both patients with pre-THA and post-THA compared with controls ($P < 0.05$).

Temporal summation of pain was facilitated bilaterally in patients with pre-THA compared with controls and normalized after THA in postoperative pain-free patients ($P < 0.05$). Postoperative hip pain VAS scores correlated with preoperative ipsilateral TSP ($r = 0.44$, $P < 0.05$). Bilateral pressure pain hypersensitivity and facilitated TSP were demonstrated in patients with preoperative hip OA. Although persistent postoperative pain is known as multifactorial, greater preoperative TSP was associated with greater pain and less reduction in pain after THA.

Poor surgical reports

Br J Sports Med. 2016 Nov 14. pii: bjsports-2016-096618. doi: 10.1136/bjsports-2016-096618.

Pain, activities of daily living and sport function at different time points after hip arthroscopy in patients with femoroacetabular impingement: a systematic review with meta-analysis.

Kierkegaard S¹, Langeskov-Christensen M², Lund B¹, Naal FD³, Mechlenburg I^{4,5}, Dalgas U², Casartelli NC⁶.

Author information

Abstract

AIM:

To investigate pain, activities of daily living (ADL) function, sport function, quality of life and satisfaction at different time points after hip arthroscopy in patients with femoroacetabular impingement (FAI).

DESIGN:

Systematic review with meta-analysis. Weighted mean differences between preoperative and postoperative outcomes were calculated and used for meta-analysis.

DATA SOURCES:

EMBASE, MEDLINE, SportsDiscus, CINAHL, Cochrane Library, and PEDro.

ELIGIBILITY CRITERIA FOR SELECTING STUDIES:

Studies that evaluated hip pain, ADL function, sport function and quality of life before and after hip arthroscopy and postoperative satisfaction in patients with symptomatic FAI.

RESULTS:

Twenty-six studies (22 case series, 3 cohort studies, 1 randomised controlled trial (RCT)) were included in the systematic review and 19 in the meta-analysis. Clinically relevant pain and ADL function improvements were first reported between 3 and 6 months, and sport function improvements between 6 months and 1 year after surgery. It is not clear when quality of life improvements were first achieved. On average, residual mild pain and ADL and sport function scores lower than their healthy counterparts were reported by patients following surgery. Postoperative patient satisfaction ranged from 68% to 100%.

CONCLUSIONS:

On average, patients reported earlier pain and ADL function improvements, and slower sport function improvements after hip arthroscopy for FAI. However, average scores from patients indicate residual mild hip pain and/or hip function lower than their healthy counterparts after surgery. Owing to the current low level of evidence, future RCTs and cohort studies should investigate the effectiveness of hip arthroscopy in patients with FAI.

35. KNEE/TOTAL

Inflammation factors

BMC Musculoskelet Disord. 2017 Jan 14;18(1):17. doi: 10.1186/s12891-016-1375-2.

Cytokine and neuropeptide levels are associated with pain relief in patients with chronically painful total knee arthroplasty: a pilot study.

Singh JA^{1,2,3,4}, Noorbaloochi S^{5,6}, Knutson KL⁷.

Author information

Abstract

BACKGROUND:

There are few studies with an assessment of the levels of cytokines or neuropeptides as correlates of pain and pain relief in patients with painful joint diseases. Our objective was to assess whether improvements from baseline to 2-months in serum cytokine, chemokine and substance P levels were associated with clinically meaningful pain relief at 2-months post-injection in patients with painful total knee arthroplasty (TKA).

METHODS:

Using data from randomized trial of 60 TKAs, we assessed the association of change in cytokine/chemokine/Substance P levels with primary study outcome, clinically important improvement in Western Ontario McMaster Osteoarthritis Index (WOMAC) pain subscale at 2-months post-injection using Student's t-tests and Spearman's correlation coefficient (non-parametric). Patients were categorized as pain responders (20-point reduction or more on 0-100 WOMAC pain) vs. pain non-responders. Sensitivity analysis used 0-10 daytime pain numeric rating scale (NRS) instead of WOMAC pain subscale.

RESULTS:

In a pilot study, compared to non-responders (n = 23) on WOMAC pain scale at 2-months, pain responders (n = 12) had significantly greater increase in serum levels of IL-7, IL-10, IL-12, eotaxin, interferon gamma and TNF- α from baseline to 2-months post-injection ($p < 0.05$ for all). Change in several cytokine/chemokine and substance P levels from pre-injection to 2-month follow-up correlated significantly with change in WOMAC pain with correlation coefficients ranging -0.37 to -0.51: IL-2, IL-7, IL-8, IL-9, IL-16, IL-12p, GCSF, IFN gamma, IP-10, MCP, MIP1b, TNF- α and VEGF (n = 35). Sensitivity analysis showed that substance P decreased significantly more from baseline to 2-months in the pain responders (0.54 ± 0.53 ; n = 10) than in the pain non-responders (0.48 ± 1.18 ; n = 9; $p = 0.023$) and that this change in serum substance P correlated significantly with change in daytime NRS pain, correlation coefficient was 0.53 ($p = 0.021$; n = 19). Findings should be interpreted with caution, since cytokine analyses were performed for a sub-group of the entire trial population.

CONCLUSION:

Serum cytokine, chemokine and Substance P levels correlated with pain response in patients with painful TKA after an intra-articular injection in a randomized trial.

Arthroscopic surgery prior not helpful

Knee. 2017 Jan 9. pii: S0968-0160(16)30244-7. doi: 10.1016/j.knee.2016.12.003

The incidence and impact of arthroscopy in the year prior to total knee arthroplasty.

Barton SB¹, McLauchlan GJ², Canty SJ².

Author information

Abstract

BACKGROUND:

Prior knee surgery and arthroscopy is known to increase complications and re-operations in subsequent total knee arthroplasty (TKA). We set out to examine the time dependant effect of arthroscopy on Patient Reported Outcome Measures following subsequent TKA.

METHODS:

A retrospective review of theatre and clinical records identified 186 patients who underwent TKA within a year of arthroscopy (2009-2013). Oxford knee score (OKS) data was compared with a published cohort from the same department (1708 patients).

RESULTS:

One hundred and eighty six patients were identified who underwent TKA within a year of arthroscopy; 112 females, 74 males; mean age 64 (SD 10); mean BMI 31.4 (SD 4.6). There was no significant difference between groups with respect to sex, age, BMI, or pre-operative OKS. One hundred and three patients underwent TKA within six months of arthroscopy. This group had a significant reduction in OKS compared to the previously published cohort (32.8 vs 36.3, $p < 0.005$). There was no significant difference in OKS when TKA was performed more than six months after arthroscopy (35.3). The re-operation rate was 14% in the arthroscopy group, with a revision rate of 3.8% vs 1.6% in a previously published large cohort from the same institution.

CONCLUSIONS:

There appears to be a negative impact of arthroscopy in relation to subsequent TKA which seems to be time dependent. TKA should not routinely be performed within six months of arthroscopy. This should inform guidelines on the management knee osteoarthritis.

Flexion better

Arch Orthop Trauma Surg. 2017 Feb;137(2):257-265. doi: 10.1007/s00402-016-2613-7. Epub 2016 Dec 27.

Impact of flexion versus extension of knee position on outcomes after total knee arthroplasty: a meta-analysis.

Jiang C¹, Lou J², Qian W³, Ye C¹, Zhu S¹.

Author information

Abstract

INTRODUCTION:

Controversy still exists regarding positioning of the knee in flexion or in extension after total knee arthroplasty (TKA) impacts treatment outcomes. In this meta-analysis, we evaluated if a postoperative knee position regime could positively affect the rehabilitation.

METHODS:

A comprehensive search for randomized controlled trials (RCTs) assessing the effect of knee positioning after TKA was conducted. The outcomes of interest were blood loss and range of

motion (ROM); total calculated blood loss (CBL), drainage volume, hidden blood loss (HBL), decline of hemoglobin level and requirement for blood transfusion.

RESULTS:

Ten RCTs involving 962 knees were eligible for meta-analysis. Positioning the knee in flexion after TKA was significantly associated with lesser CBL ($P < 0.00001$), less HBL ($P < 0.00001$) and decreased requirement for blood transfusion ($P = 0.06$). On subgroup analyses, the flexion group was found to have significantly less decrease in hemoglobin level 48 h to 6 days after surgery ($P = 0.003$), while no significant difference was noted at 24 h after surgery ($P = 0.29$). Further, a superior ROM was observed in flexion group (5-7 days after surgery) ($P = 0.002$), while there was no significant difference at 6 weeks. No significant inter-group difference in wound drainage was observed at 24 h after surgery.

CONCLUSION:

Positioning the knee in flexion in the early postoperative stage was associated with significantly lesser CBL, lesser HBL, decreased requirement for blood transfusion and better ROM at least in the early postoperative period, which may contribute to early rehabilitation. However, no significant difference was found in ROM at 6 weeks.

Close kinetic chain

Pilot study: Post-operative rehabilitation pathway changes and implementation of functional closed kinetic chain exercise in total hip and total knee replacement patient

C. Abbas J. Daher

DOI: <http://dx.doi.org/10.1016/j.jbmt.2017.01.009>

Abstract

Objective

The aim of this study was to assess the feasibility of introducing a functional closed kinetic chain exercise program to an acute care setting to reduce length of hospital stay and assess tolerance to exercise immediately following total hip or total knee arthroplasty.

Methods

A protocol change implementing a functional closed kinetic chain based exercise program, post total hip (n = 535) and total knee (n = 695) arthroplasty, was performed at Windsor Regional Hospital Ouellette Campus in Windsor, Ontario Canada. A chart review was performed to

ABSTRACTS

compare the length of stay, post-surgery, of the new protocol to the length of stay of the previous range of motion and open kinetic chain based protocols of the previous two years.

Results

A significant (P-value <0.05) number of total hip and total knee arthroplasty patients reduced the length of hospital stay to less than 4 days using the closed kinetic chain program.

Conclusion

Evidence suggests that closed kinetic chain exercises are tolerated in the acute care setting and may be useful in reducing hospital length of stay post total hip and total knee arthroplasty.

Minimal outcomes

Knee Surg Sports Traumatol Arthrosc. 2016 Dec 29. doi: 10.1007/s00167-016-4404-7.

Ten-year patient-reported outcomes following total and minimally invasive unicompartmental knee arthroplasty: a propensity score-matched cohort analysis.

Burn E¹, Sanchez-Santos MT^{2,3}, Pandit HG^{2,4}, Hamilton TW², Liddle AD^{2,5}, Murray DW^{2,4}, Pinedo-Villanueva R^{2,6}.

Author information

Abstract

PURPOSE:

For patients with medial compartment arthritis who have failed non-operative treatment, either a total knee arthroplasty (TKA) or a unicompartmental knee arthroplasty (UKA) can be undertaken. This analysis considers how the choice between UKA and TKA affects long-term patient-reported outcome measures (PROMs).

METHODS:

The Knee Arthroplasty Trial (KAT) and a cohort of patients who received a minimally invasive UKA provided data. Propensity score matching was used to identify comparable patients. Oxford

Knee Score (OKS), its pain and function components, and the EuroQol 5 Domain (EQ-5D) index, estimated on the basis of OKS responses, were then compared over 10 years following surgery. Mixed-effects regressions for repeated measures were used to estimate the effect of patient characteristics and type of surgery on PROMs.

RESULTS:

Five-hundred and ninety UKAs were matched to the same number of TKAs. Receiving UKA rather than TKA was found to be associated with better scores for OKS, including both its pain and function components, and EQ-5D, with the differences expected to grow over time. UKA was also associated with an increased likelihood of patients achieving a successful outcome, with an increased chance of attaining minimally clinically important improvements in both OKS and EQ-5D, and an 'excellent' OKS. In addition, for both procedures, patients aged between 60 and 70 and better pre-operative scores were associated with better post-operative outcomes.

CONCLUSION:

Minimally invasive UKAs performed on patients with the appropriate indications led to better patient-reported pain and function scores than TKAs performed on comparable patients. UKA can lead to better long-term quality of life than TKA and this should be considered alongside risk of revision when choosing between the procedures.

37. OSTEOARTHRITIS/KNEE

PRP helps

J Orthop Surg Res. 2017 Jan 23;12(1):16. doi: 10.1186/s13018-017-0521-3.

The temporal effect of platelet-rich plasma on pain and physical function in the treatment of knee osteoarthritis: systematic review and meta-analysis of randomized controlled trials.

Shen L¹, Yuan T¹, Chen S², Xie X³, Zhang C¹.

Author information

Abstract

BACKGROUND:

Quite a few randomized controlled trials (RCTs) investigating the efficacy of platelet-rich plasma (PRP) for treatment of knee osteoarthritis (OA) have been recently published. Therefore, an updated systematic review was performed to evaluate the temporal effect of PRP on knee pain and physical function.

METHODS:

Pubmed, Embase, Cochrane library, and Scopus were searched for human RCTs comparing the efficacy and/or safety of PRP infiltration with other intra-articular injections. A descriptive

summary and quality assessment were performed for all the studies finally included for analysis. For studies reporting outcomes concerning Western Ontario and McMaster Universities Arthritis Index (WOMAC) or adverse events, a random-effects model was used for data synthesis.

RESULTS:

Fourteen RCTs comprising 1423 participants were included. The control included saline placebo, HA, ozone, and corticosteroids. The follow-up ranged from 12 weeks to 12 months. Risk of bias assessment showed that 4 studies were considered as moderate risk of bias and 10 as high risk of bias. Compared with control, PRP injections significantly reduced WOMAC pain subscores at 3, 6, and 12 months follow-up ($p = 0.02, 0.004, <0.001$, respectively); PRP significantly improved WOMAC physical function subscores at 3, 6, and 12 months ($p = 0.002, 0.01, <0.001$, respectively); PRP also significantly improved total WOMAC scores at 3, 6 and 12 months (all $p < 0.001$); nonetheless, PRP did not significantly increase the risk of post-injection adverse events (RR, 1.40 [95% CI, 0.80 to 2.45], $I^2 = 59\%$, $p = 0.24$).

CONCLUSIONS:

Intra-articular PRP injections probably are more efficacious in the treatment of knee OA in terms of pain relief and self-reported function improvement at 3, 6 and 12 months follow-up, compared with other injections, including saline placebo, HA, ozone, and corticosteroids.

45 B. MANUAL THERAPY CERVICAL

Cervical flexion rotation test

Reliability and minimal detectable change of a modified passive neck flexion test in patients with chronic nonspecific neck pain and asymptomatic subjects

Manual Therapy , 01/26/2017

Lópezde-Uralde-Villanueva I, et al.

This study suggested that the modified version passive neck flexion test is a reliable tool regardless of the examiner and the time factor. Patients with chronic nonspecific neck pain have a decrease range of motion and more pain than asymptomatic subjects in the modified version passive neck flexion test. This exceeds the minimal detectable changes for OS-mPNFT and VAS-mPNFT.

Methods

- They applied repeated measures concordance design for the main objective and cross-sectional design for the secondary objective.
- They enrolled a total of 30 asymptomatic subjects and 34 patients with CNSNP.
- They recorded the following measures: the range of motion at the onset of symptoms (OS-mPNFT), the range of motion at the submaximal pain (SP-mPNFT), and evoked pain intensity on the mPNFT (VAS-mPNFT).

Results

- They obtained good to excellent reliability for OS-mPNFT and SP-mPNFT in the asymptomatic group (intra-examiner reliability: 0.95–0.97; inter-examiner reliability: 0.86–0.90; intra-examiner test-retest reliability: 0.84–0.87).
- A good to excellent reliability was observed for the OS-mPNFT (intra-examiner reliability: 0.89–0.96; inter-examiner reliability: 0.83–0.86; intra-examiner test-retest reliability: 0.83–0.85) and the SP-mPNFT (intra-examiner reliability: 0.94–0.98; inter-examiner reliability: 0.80–0.82; intra-examiner test-retest reliability: 0.88–0.91), in the CNSNP group.
- Lastly, the CNSNP group indicated statistically significant differences in OS-mPNFT ($t = 4.92$; $P < 0.001$), SP-mPNFT ($t = 2.79$; $P = 0.007$) and in VAS-mPNFT ($t = -10.39$; $P < 0.001$) versus the asymptomatic group.

Adverse events

Adverse events associated with the use of cervical spine manipulation or mobilization and patient characteristics: A systematic review

H.A. Kranenburg M.A. Schmitt E.J. Puentedura G.J. Luijckx C.P. van der Schans

DOI: <http://dx.doi.org/10.1016/j.msmsp.2017.01.008>

Highlights

- Vertebral Artery Dissection (VAD) is the most frequent described Major Adverse Event (MAE).
- The most frequent inventoried treatment technique was a non-specified manipulative technique.
- Patient characteristics are poorly described in case reports.
- No pre-manipulative risk profile could be composed based on the published patient characteristics.

Abstract

Cervical spinal manipulation (CSM) and cervical mobilization are frequently used in patients with neck pain and headache. Pre-manipulative cervical instability and arterial integrity tests appear to be unreliable in identifying patients at risk for adverse events. It would be valuable if patients at risk could be identified by specific characteristics during the preliminary screening.

Objective was to identify characteristics of 1) patients, 2) practitioners, 3) treatment process and 4) adverse events (AE) occurring after CSM or cervical mobilization.

A systematic search was performed in PubMed, Embase, CINAHL, Web-of-science, AMED, and ICL (Index Chiropractic Literature) up to December 2014.

Of the initial 1043 studies, 144 studies were included, containing 227 cases. 117 cases described male patients with a mean age of 45 (SD 12) and a mean age of 39 (SD 11) for females. Most patients were treated by chiropractors (66%). Manipulation was reported in 95% of the cases, and neck pain was the most frequent indication. Cervical arterial dissection (CAD) was reported in 57% (P = 0.21) of the cases and 45.8% had immediate onset symptoms. The overall distribution of gender for CAD is 55% (n = 71) for female and therefore opposite of the total AE.

Patient characteristics were described poorly. No clear patient profile, related to the risk of AE after CSM, could be extracted. However, women seem more at risk for CAD. There seems to be under-reporting of cases. Further research should focus on a more uniform and complete registration of AE using standardized terminology.

47. STRETCHING/MUSCLES

Velocity of stretching

Influence of stretching velocity on musculotendinous stiffness of the hamstrings during passive straight-leg raise assessments

Ty B. Palmer Nathaniel D.M. Jenkins Brennan J. Thompson Joel T. Cramer

DOI: <http://dx.doi.org/10.1016/j.msksp.2016.12.018>

Highlights

- Neither passive stiffness nor EMG amplitude were influenced by stretching velocity.
- EMG amplitude remained unchanged across the range of motion.
- Modest variations in velocity likely do not elicit a detectible stretch reflex.

Abstract**Background**

Recently, passive musculotendinous stiffness (MTS) has been assessed manually in the field; however, when conducting these types of assessments, the stretching velocity must be controlled to avoid eliciting the stretch reflex, which can be observed by increased electromyographic (EMG) amplitude of the stretched muscles and greater resistive torque (indicating the assessment is no longer passive).

Objective

To examine the effects of slow, medium, and fast stretching velocities during manually-applied passive straight-leg raise (SLR) assessments on hamstrings MTS and EMG amplitude characteristics.

Study design

Crossover study.

Methods

Twenty-three healthy, young adults underwent passive, manually-applied SLR assessments performed by the primary investigator at slow, medium, and fast stretching velocities. During each SLR, MTS and EMG amplitude were determined at 4 common joint angles (θ) separated by 5° during the final common 15° of range of motion for each participant.

Results

The average stretching velocities were 7, 11, and $18^\circ \cdot s^{-1}$ for the slow, medium, and fast SLRs. There were no velocity-related differences for MTS ($P = 0.489$) or EMG amplitude ($P = 0.924$). MTS increased ($P < 0.001$) with joint angle ($\theta_1 < \theta_2 < \theta_3 < \theta_4$); however, EMG amplitude remained unchanged ($P = 0.885$) across the range of motion.

Conclusions

Although velocity discrepancies have been identified as a potential threat to the validity of passive MTS measurements obtained with manual SLR techniques, the present findings suggest that the SLR at any of the velocities tested in our study ($7-18^\circ \cdot s^{-1}$) did not elicit a detectible stretch reflex, and thereby may be appropriate for examining MTS.

52. EXERCISE**Bridging**

Physiother Res Int. 2017 Jan 6. doi: 10.1002/pri.1682.

Responsiveness of the bridge maneuvers in subjects with symptomatic lumbar spondylolisthesis: A prospective cohort study.

Vanti C¹, Ferrari S², Berjano P³, Villafañe JH⁴, Monticone M⁵.

Author information

Abstract

BACKGROUND AND PURPOSE:

To date no study was made on the responsiveness of Bridge tests (BTs) in subjects with low back pain and spondylolisthesis (SPL) submitted to a physical therapy program. The objective of this study is to examine the responsiveness of the BTs in subjects with symptomatic lumbar SPL.

METHODS:

One hundred twenty patients with symptomatic SPL received physical therapy treatments for a number of sessions depending on the individual patient's needs. Each session included supervised exercises and the teaching of home exercises aiming to improve the lumbar stability, for about 1 hr in total. At the beginning and immediately after the last session of treatment, participants completed the Oswestry Disability Index - Italian version and the Pain Numerical Rating Scale, and performed the supine bridging (SBT) and the prone bridging (PBT). The global perception of effectiveness was measured with a seven-point Likert scale Global Perceived Effect questionnaire.

RESULTS:

The mean post-treatment change score (95% confidence interval [CI]) was 18.2 s (14.5; 21.9) for the PBT and 43.9 s (35.1; 52.8) for the SBT, all $p < .001$. The area under the receiver operating characteristic curve for the PBT was 0.83 (95% CI 0.74-0.91) and for the SBT was 0.703 (95% CI 0.61-0.80). The optimal cutoff points were 19.5 s for the PBT and 62.5 s for the SBT. Logistic regression revealed that PBT (odds ratio = 0.952) was associated with the type of SPL. The final regression model explained 36.4% ($R^2 = 0.36$; $p = .001$) of the variability.

DISCUSSION:

Bridge maneuvers proved to be responsive, because their results were significantly related to pain and disability changes. BTs may be suggested to detect clinical changes after physical therapy treatment in symptomatic SPL. Copyright © 2017 John Wiley & Sons, Ltd.

57. GAIT**Varus thrust**

Osteoarthritis Cartilage. 2017 Jan 16. pii: S1063-4584(17)30025-0. doi: 10.1016/j.joca.2017.01.005

Varus Thrust during Walking and the Risk of Incident and Worsening Medial Tibiofemoral MRI Lesions: The Multicenter Osteoarthritis Study.

Wink AE¹, Gross KD², Brown CA³, Guermazi A⁴, Roemer F⁵, Niu J⁶, Torner J⁷, Lewis CE⁸, Nevitt MC⁹, Tolstykh I¹⁰, Sharma L¹¹, Felson DT¹².

Author information

Abstract

OBJECTIVE:

To determine the association of varus thrust during walking to incident and worsening medial tibiofemoral cartilage damage and bone marrow lesions (BMLs) over two years in older adults with or at risk for OA.

METHOD:

Subjects from the Multicenter Osteoarthritis Study were studied. Varus thrust was visually assessed from high-speed videos of forward walking trials. Baseline and two-year MRIs were acquired from one knee per subject and read for cartilage loss and BMLs. Logistic regression with generalized estimating equations was used to estimate the odds of incident and worsening cartilage loss and BMLs, adjusting for age, sex, race, body mass index, and clinic site. The analysis was repeated stratified by varus, neutral, and valgus alignment.

RESULTS:

1007 participants contributed one knee each. Varus thrust was observed in 29.9% of knees. Knees with thrust had 2.17 [95% CI: 1.51, 3.11] times the odds of incident medial BML, 2.51 [1.85, 3.40] times the odds of worsening medial BML, and 1.85 [1.35, 2.55] times the odds of worsening medial cartilage loss. When stratified by alignment, varus knees also had significantly increased odds of these outcomes.

CONCLUSION:

Varus thrust observed during walking is associated with increased odds of incident and worsening medial BMLs and worsening medial cartilage loss. Increased odds of these outcomes persist in varus-aligned knees.

59. PAIN**Pain sensitivity and ethnicity**

Pain. 2017 Feb;158(2):194-211. doi: 10.1097/j.pain.0000000000000731.

Racial and ethnic differences in experimental pain sensitivity: systematic review and meta-analysis.

Kim HJ¹, Yang GS, Greenspan JD, Downton KD, Griffith KA, Renn CL, Johantgen M, Dorsey SG.

Author information

Abstract

Our objective was to describe the racial and ethnic differences in experimental pain sensitivity.

Four databases (PubMed, EMBASE, the Cochrane Central Register of Controlled Trials, and PsycINFO) were searched for studies examining racial/ethnic differences in experimental pain sensitivity. Thermal-heat, cold-pressor, pressure, ischemic, mechanical cutaneous, electrical, and chemical experimental pain modalities were assessed. Risk of bias was assessed using the Agency for Healthcare Research and Quality guideline. Meta-analysis was used to calculate standardized mean differences (SMDs) by pain sensitivity measures. Studies comparing African Americans (AAs) and non-Hispanic whites (NHWs) were included for meta-analyses because of high heterogeneity in other racial/ethnic group comparisons. Statistical heterogeneity was assessed by subgroup analyses by sex, sample size, sample characteristics, and pain modalities. A total of 41 studies met the review criteria. Overall, AAs, Asians, and Hispanics had higher pain sensitivity compared with NHWs, particularly lower pain tolerance, higher pain ratings, and greater temporal summation of pain. Meta-analyses revealed that AAs had lower pain tolerance (SMD: -0.90, 95% confidence intervals [CIs]: -1.10 to -0.70) and higher pain ratings (SMD: 0.50, 95% CI: 0.30-0.69) but no significant differences in pain threshold (SMD: -0.06, 95% CI: -0.23 to 0.10) compared with NHWs. Estimates did not vary by pain modalities, nor by other demographic factors; however, SMDs were significantly different based on the sample size.

Racial/ethnic differences in experimental pain sensitivity were more pronounced with suprathreshold than with threshold stimuli, which is important in clinical pain treatment. Additional studies examining mechanisms to explain such differences in pain tolerance and pain ratings are needed.

Weather no impact**The weather's not to blame for your aches and pains**

New research from The George Institute for Global Health has revealed the weather plays no part in the symptoms associated with either back pain or osteoarthritis.

It's long been thought episodes of both back pain and arthritis can be triggered by changes in the weather, including temperature, humidity, air pressure, wind direction and precipitation.

ABSTRACTS

Professor Chris Maher, of The George Institute for Global Health, said: “The belief that pain and inclement weather are linked dates back to Roman times. But our research suggests this belief may be based on the fact that people recall events that confirm their pre-existing views.

“Human beings are very susceptible so it’s easy to see why we might only take note of pain on the days when it’s cold and rainy outside, but discount the days when they have symptoms but the weather is mild and sunny.”

Almost 1000 people with lower back pain, and around 350 with knee osteoarthritis were recruited for the Australian-based studies. Weather data from the Australian Bureau of Meteorology were sourced for the duration of the study period. Researchers compared the weather at the time patients first noticed pain with weather conditions one week and one month before the onset of pain as a control measure.

Results showed no association between back pain and temperature, humidity, air pressure, wind direction or precipitation. However, higher temperatures did slightly increase the chances of lower back pain, but the amount of the increase was not clinically important.

The findings reinforce earlier research on back pain and inclement weather from The George Institute which received widespread criticism from the public on social media.

Professor Maher, who led the back pain study, added: “People were adamant that adverse weather conditions worsened their symptoms so we decided to go ahead with a new study based on data from new patients with both lower back pain and osteoarthritis. The results though were almost exactly the same – there is absolutely no link between pain and the weather in these conditions.”

Back pain affects up to a third of the world’s population at any one time, whilst almost 10 percent of men and 18 percent of women over the age of 60 have osteoarthritis.

Associate Professor Manuela Ferreira, who led the osteoarthritis research at The George Institute, said: “People who suffer from either of these conditions should not focus on the weather as it does not have an important influence on your symptoms and it is outside your control.” “What’s more important is to focus on things you can control in regards to managing pain and prevention.”

62 A. NUTRITION/VITAMINS

Tea consumption reduces heart problems

Heart. 2017 Jan 11. pii: heartjnl-2016-310462. doi: 10.1136/heartjnl-2016-310462.

Tea consumption and risk of ischaemic heart disease.

Li X¹, Yu C¹, Guo Y², Bian Z², Si J¹, Yang L³, Chen Y³, Ren X⁴, Jiang G⁵, Chen J⁶, Chen Z³, Lv J^{1,7}, Li L^{1,2}; China Kadoorie Biobank Collaborative Group.

Author information

Abstract

OBJECTIVE:

To prospectively examine the association between tea consumption and the risk of ischaemic heart disease (IHD).

METHODS:

Prospective study using the China Kadoorie Biobank; participants from 10 areas across China were enrolled during 2004-2008 and followed up until 31 December 2013. After excluding participants with cancer, heart disease and stroke at baseline, the present study included 199 293 men and 288 082 women aged 30-79 years at baseline. Information on IHD incidence was collected through disease registries and the new national health insurance databases.

RESULTS:

During a median follow-up of 7.2 years, we documented 24 665 (7.19 cases/1000 person-years) incident IHD cases and 3959 (1.13 cases/1000 person-years) major coronary events (MCEs). Tea consumption was associated with reduced risk of IHD and MCE. In the whole cohort, compared with participants who never consumed tea during the past 12 months, the multivariable-adjusted HRs and 95% CIs for less than daily and daily tea consumers were 0.97 (0.94 to 1.00) and 0.92 (0.88 to 0.95) for IHD, 0.92 (0.85 to 1.00) and 0.90 (0.82 to 0.99) for MCE. No linear trends in the HRs across the amount of tea were observed in daily consumers for IHD and MCE ($P_{\text{Linear}} > 0.05$). The inverse association between tea consumption and IHD was stronger in rural ($P_{\text{Interaction}} 0.006$ for IHD, < 0.001 for MCE), non-obese ($P_{\text{Interaction}} 0.012$ for MCE) and non-diabetes participants ($P_{\text{Interaction}} 0.004$ for IHD).

CONCLUSIONS:

In this large prospective study, daily tea consumption was associated with a reduced risk of IHD.

Tomato intake decreases heart disease

Tomato and lycopene supplementation and cardiovascular risk factors: A systematic review and meta-analysis

Atherosclerosis, 01/19/2017

 Cheng HM, et al.

ABSTRACTS

This study suggests a positive influence of tomato products and lycopene supplementation on blood lipids, blood pressure and endothelial function. These outcomes support the development of promising individualised nutritional strategies involving tomatoes to tackle cardiovascular diseases (CVD).

Methods

- Researchers searched 3 databases including Medline, Web of science, and Scopus from inception to August 2016.
- Inclusion criteria were: intervention randomised controlled trials reporting effects of tomato products and lycopene supplementation on CV risk factors among adult subjects >18 years of age.
- The outcomes of interest included blood lipids (total-, HDL-, LDL-cholesterol, triglycerides, oxidised-LDL), endothelial function (flow-mediated dilation (FMD), pulse wave velocity (PWV)) and blood pressure (BP) inflammatory factors (CRP, IL-6) and adhesion molecules (ICAM-1).
- They used random-effects models to determine the pooled effect sizes.

Results

- Data showed that out of 1189 publications identified, 21 fulfilled inclusion criteria and were meta-analysed.
- Overall, findings demonstrated that interventions supplementing tomato were associated with significant reductions in LDL-cholesterol (-0.22 mmol/L; $p = 0.006$), IL-6 (standardised mean difference -0.25; $p = 0.03$), and improvements in FMD (2.53%; $p = 0.01$); while lycopene supplementation reduced Systolic-BP (-5.66 mmHg; $p = 0.002$).
- Additionally, it was noted that no other outcome was significantly affected by these interventions.

Soft drink intake increases risk of metabolic syndrome

Int J Clin Pract. 2017 Jan 10. doi: 10.1111/ijcp.12927.

Soft drink intake and the risk of metabolic syndrome: A systematic review and meta-analysis.

Narain A^{1,2}, Kwok CS^{1,2}, Mamas MA^{1,2}.

Author information

Abstract

BACKGROUND:

It is unclear whether consumption of sugar- or artificially sweetened beverages is independently associated with the development of metabolic syndrome. A systematic review and meta-analysis was performed to evaluate whether soft drink consumption is associated with the development of metabolic syndrome.

METHODS:

Medline and EMBASE were searched in November 2015 for studies which considered soft drink (sugar-sweetened beverage [SSB] and artificially sweetened beverage [ASB]) intake and risk of metabolic syndrome. Pooled risk ratios for adverse outcomes were calculated using inverse variance with a random effects model, and heterogeneity was assessed using the I^2 statistic.

RESULTS:

A total of 12 studies (eight cross-sectional, four prospective cohort studies) with 56 244 participants (age range 6-98 years) were included in the review. Our pooled analysis found that soft drink intake is associated with metabolic syndrome. This relationship is shown in cross-sectional studies of SSB consumption (RR 1.46, 95% CI 1.18-1.91) and both cross-sectional and prospective studies of ASB consumption (RR 2.45; 95% CI 1.15-5.14; RR 1.32, 95% CI 1.21-1.44, respectively). However, pooled results of prospective cohort studies of SSB consumption found no association between intake and risk of developing metabolic syndrome.

CONCLUSIONS:

Sugar-sweetened beverage and ASB intake are both associated with metabolic syndrome. This association may be driven by the fact that soft drink intake serves as a surrogate for an unhealthy lifestyle, or an adverse cardiovascular risk factor profile

Vit D and depression

Acta Psychiatr Scand. 2017 Jan 25. doi: 10.1111/acps.12689.

Vitamin D serum levels are cross-sectionally but not prospectively associated with late-life depression.

Jovanova O¹, Aarts N^{1,2}, Noord R^{1,2}, Carola-Zillikens M², Hofman A¹, Tiemeier H^{1,3,4}.

Author information

Abstract

OBJECTIVE:

The evidence for a prospective association of vitamin D deficiency with the occurrence of late-life depression is limited. We aimed to study the long-term association between vitamin D serum levels and depression in a large population-based study of older adults.

METHOD:

We included 3251 participants from the Rotterdam Study, aged 55 and older with 32 400 person-years follow-up for depression. Baseline 25-hydroxyvitamin D (25(OH)D) serum levels were analyzed continuously and categorically. Repeated depressive symptoms' questionnaire assessments were used to assess the change of depressive symptoms. Semistructured psychiatric interviews, and GP records were used to assess incident major depressive disorder according to DSM-IV criteria.

RESULTS:

Low serum vitamin D levels were cross-sectionally associated with more depressive symptoms. However, low 25(OH)D serum levels were not prospectively associated with change of depressive symptoms (unstandardized beta = 0.02, 95% CI = -0.23; 0.26) or incident MDD (hazard ratio = 0.95, 95% CI = 0.86; 1.05).

CONCLUSION:

We observed a cross-sectional but no prospective association between serum vitamin D levels and depression. A cross-sectional association in the absence of the longitudinal association can mostly be attributed to reverse causality or residual confounding. Probably, vitamin D deficiency is not an independent risk factor for depression but co-occurs with late-life depression.

Flavonoids

Am J Clin Nutr. 2017 Jan 18. pii: ajcn144394. doi: 10.3945/ajcn.116.144394.

Higher dietary flavonoid intakes are associated with lower objectively measured body composition in women: evidence from discordant monozygotic twins.

Jennings A¹, MacGregor A¹, Spector T², Cassidy A³.

Author information

Abstract

BACKGROUND:

Although dietary flavonoid intake has been associated with less weight gain, there are limited data on its impact on fat mass, and to our knowledge, the contribution of genetic factors to this relation has not previously been assessed.

OBJECTIVE:

We examined the associations between flavonoid intakes and fat mass.

DESIGN:

In a study of 2734 healthy, female twins aged 18-83 y from the TwinsUK registry, intakes of total flavonoids and 7 subclasses (flavanones, anthocyanins, flavan-3-ols, flavonols, flavones, polymers, and proanthocyanidins) were calculated with the use of food-frequency questionnaires. Measures of dual-energy X-ray absorptiometry-derived fat mass included the limb-to-trunk fat mass ratio (FMR), fat mass index, and central fat mass index.

RESULTS:

In cross-sectional multivariable analyses, higher intake of anthocyanins, flavonols, and proanthocyanidins were associated with a lower FMR with mean \pm SE differences between extreme quintiles of -0.03 ± 0.02 (P-trend = 0.02), -0.03 ± 0.02 (P-trend = 0.03), and -0.05 ± 0.02 (P-trend < 0.01), respectively. These associations were not markedly changed after further adjustment for fiber and total fruit and vegetable intakes. In monozygotic, intake-discordant twin pairs, twins with higher intakes of flavan-3-ols (n = 154, P = 0.03), flavonols (n = 173, P = 0.03), and proanthocyanidins (n = 172, P < 0.01) had a significantly lower FMR than that of their co-twins with within-pair differences of 3-4%. Furthermore, in confirmatory food-based analyses, twins with higher intakes of flavonol-rich foods (onions, tea, and pears; P = 0.01) and proanthocyanidin-rich foods (apples and cocoa drinks; P = 0.04) and, in younger participants (aged <50 y) only, of anthocyanin-rich foods (berries, pears, grapes, and wine; P = 0.01) had a 3-9% lower FMR than that of their co-twins.

CONCLUSIONS:

These data suggest that higher habitual intake of a number of flavonoids, including anthocyanins, flavan-3-ols, flavonols, and proanthocyanidins, are associated with lower fat mass independent of shared genetic and common environmental factors. Intervention trials are needed to further examine the effect of flavonoid-rich foods on body composition.

Vit. D decreases dementia

BMC Geriatr. 2017 Jan 13;17(1):16. doi: 10.1186/s12877-016-0405-0.

Vitamin D deficiency as a risk factor for dementia: a systematic review and meta-analysis.

Sommer I¹, Griebler U^{2,3}, Kien C^{2,3}, Auer S^{4,5}, Klerings I^{2,3}, Hammer R⁶, Holzer P⁶, Gartlehner G^{2,3,7}.

Author information

Abstract

BACKGROUND:

Sunlight exposure and high vitamin D status have been hypothesised to reduce the risk of developing dementia. The objective of our research was to determine whether lack of sunlight and hypovitaminosis D over time are associated with dementia.

METHODS:

We systematically searched MEDLINE (via PubMed), Cochrane Library, EMBASE, SCOPUS, Web of Science, ICONDA, and reference lists of pertinent review articles from 1990 to October 2015. We conducted random effects meta-analyses of published and unpublished data to evaluate the influence of sunlight exposure or vitamin D as a surrogate marker on dementia risk.

RESULTS:

We could not identify a single study investigating the association between sunlight exposure and dementia risk. Six cohort studies provided data on the effect of serum vitamin D concentration on dementia risk. A meta-analysis of five studies showed a higher risk for persons with serious vitamin D deficiency (<25 nmol/L or 7-28 nmol/L) compared to persons with sufficient vitamin D supply (≥ 50 nmol/L or 54-159 nmol/L) (point estimate 1.54; 95% CI 1.19-1.99, $I^2 = 20\%$). The strength of evidence that serious vitamin D deficiency increases the risk of developing dementia, however, is very low due to the observational nature of included studies and their lack of adjustment for residual or important confounders (e.g. ApoE $\epsilon 4$ genotype), as well as the indirect relationship between Vitamin D concentrations as a surrogate for sunlight exposure and dementia risk.

CONCLUSIONS:

The results of this systematic review show that low vitamin D levels might contribute to the development of dementia. Further research examining the direct and indirect relationship between sunlight exposure and dementia risk is needed. Such research should involve large-scale cohort studies with homogeneous and repeated assessment of vitamin D concentrations or sunlight exposure and dementia outcomes.

Fish intake decreases risk of brain cancer

Nutr J. 2017 Jan 11;16(1):1. doi: 10.1186/s12937-016-0223-4.

Fish intake and the risk of brain tumor: a meta-analysis with systematic review.

Lian W¹, Wang R², Xing B², Yao Y².

Author information

Abstract

BACKGROUND:

Fish, rich in ω -3 polyunsaturated fatty acids, has been found to be associated with lower risk of several types of cancer risk, and beneficial for brain development. However, the association between fish intake and brain tumor risk is still inconsistent. Therefore, we conducted a meta-analysis to clarify the association.

METHODS:

Relevant studies were identified from PubMed and EMBASE databases. The pooled relative risks were obtained by the fixed-effects model when no substantial heterogeneity was observed. Otherwise, the random-effects model was employed. Subgroup and publication bias analyses were also performed.

RESULTS:

Nine observational studies were included in the meta-analysis. The pooled relative risk of brain cancer for the highest vs. lowest category of fish intake was 0.83 (95% confidence interval [CI]: 0.70-0.99). No significant heterogeneity was detected. Dose-response analysis showed that the RR per 100 g/day increase in fish intake was 0.95 (95% CI: 0.91-0.98). The results remained unchanged in subgroup and sensitivity analyses.

CONCLUSIONS:

The results of our meta-analysis suggest that fish intake might be associated with lower risk of brain cancer risk. The finding should be further confirmed by future cohort studies with validated questionnaires and strict control of confounders.

63. PHARMACOLOGY

NSAID'S use increase risk of CA

Long-term anti-inflammatory drug use may increase cancer-related deaths for certain patients

The OSUCCC–James, 01/24/2017

Regular use of over-the-counter non-steroidal anti-inflammatory drugs (NSAIDs) such as aspirin and ibuprofen is associated with an increased risk of dying in patients diagnosed with Type 1 endometrial cancers, according to a new population-based study led by The Ohio State University Comprehensive Cancer Center – Arthur G. James Cancer Hospital and Richard J. Solove Research Institute (OSUCCC – James).

In this observational study, a multi-institutional team of cancer researchers sought to understand the association of regular NSAID use and the risk of dying from endometrial cancer among a cohort of more than 4,000 patients.

They found that regular NSAID use was associated with a 66 percent increased risk of dying from endometrial cancer among women with Type 1 endometrial cancers, a typically less-aggressive form of the disease. The association was statistically significant among patients who reported past or current NSAID use at the time of diagnosis, but it was strongest among patients who had used NSAIDs for more than 10 years in the past but had ceased use prior to diagnosis. Use of NSAIDs was not associated with mortality from typically more aggressive, Type 2 cancers.

“There is an increasing evidence that chronic inflammation is involved in endometrial cancer and progression and recent data suggests that inhibition of inflammation through NSAID use plays a role,” says Theodore Brasky, PhD, co-lead author of the study and a cancer epidemiologist with the OSUCCC – James. “This study identifies a clear association that merits additional research to help us fully understand the biologic mechanisms behind this phenomenon. Our finding was surprising because it goes against previous studies that suggest NSAIDs can be used to reduce inflammation and reduce the risk of developing or dying from certain cancers, like colorectal cancer.” Researchers point out that information about specific dosages and NSAID use after surgery was not available in the current study, which represents a significant limitation.

“We are continuing to analyze the biologic mechanisms by which inflammation is related to cancer progression in this specific cohort of patients,” adds Ashley Felix, PhD, co-lead author of the study and cancer epidemiologist with the OSUCCC – James and College of Public Health.

They reported their findings in the Dec. 16, 2016, issue of the *Journal of the National Cancer Institute*. “These results are intriguing and worthy of further investigation,” says David Cohn, MD, gynecologic oncology division director at the OSUCCC – James and co-author of the study. “It is important to remember that endometrial cancer patients are far more likely to die of cardiovascular disease than their cancer so women who take NSAIDs to reduce their risk of heart attack – under the guidance of their physicians – should continue doing so. While these data are interesting, there is not yet enough data to make a public recommendation for or against taking NSAIDs to reduce the risk of cancer-related death.”

Cohn says any woman concerned about the risks of long-term NSAID use should consult with her physician.