

8. VISCERA

Fruits and Vegetables help reduce pancreatic CA

Fruit and vegetable intake and pancreatic cancer risk in a population-based cohort study in Japan

International Journal of Cancer — Yamagiwa Y, et al. |
October 02, 2018

Researchers examined the association of fruit and vegetable intake with pancreatic cancer risk (as part of the Japan Public Health Center-based Prospective Study) by analyzing data obtained from 90,185 study participants who responded to a medical and lifestyle questionnaire from 1995 to 1998 in this population-based cohort study.

Findings revealed that pancreatic cancer risk was inversely related to total fruit intake and positively correlated with the total vegetable intake. The investigators noted that the inverse association with pancreatic cancer risk was more apparent in never-smokers for total fruit intake whereas the positive correlation was statistically significant in ever-smokers and statistically non-significant in never-smokers for total vegetable intake.

Chocolate consumption and reduced CV risk

Cardiac risk factors and prevention

Original research article

Chocolate consumption and risk of cardiovascular diseases: a meta-analysis of prospective studiesYongcheng Ren¹,**Abstract**

Objective Studies investigating the impact of chocolate consumption on cardiovascular disease (CVD) have reached inconsistent conclusions. As such, a quantitative assessment of the dose–response association between chocolate consumption and incident CVD has not been reported. We performed a systematic review and meta-analysis of studies assessing the risk of CVD with chocolate consumption.

Methods PubMed and EMBASE databases were searched for articles published up to 6 June 2018. Restricted cubic splines were used to model the dose–response association.

Results Fourteen publications (23 studies including 405 304 participants and 35 093 cases of CVD) were included in the meta-analysis. The summary of relative risk (RR) per 20 g/week increase in chocolate consumption was 0.982 (95% CI 0.972 to 0.992, $I^2=50.4%$, $n=18$) for CVD (heart failure: 0.995 (0.981 to 1.010, $I^2=36.3%$, $n=5$); total stroke: 0.956 (0.932 to 0.980, $I^2=25.5%$, $n=7$); cerebral infarction: 0.952 (0.917 to 0.988, $I^2=0.0%$, $n=4$); haemorrhagic stroke: 0.931 (0.871 to 0.994, $I^2=0.0%$, $n=4$); myocardial infarction: 0.981 (0.964 to 0.997, $I^2=0.0%$, $n=3$); coronary heart disease: 0.986 (0.973 to 0.999, $n=1$)). A non-linear dose–response ($p_{\text{non-linearity}}=0.001$) indicated that the most appropriate dose of chocolate consumption for reducing risk of CVD was 45 g/week (RR 0.890;95%CI 0.849 to 0.932).

Conclusions Chocolate consumption may be associated with reduced risk of CVD at <100 g/week consumption. Higher levels may negate the health benefits and induce adverse effects associated with high sugar consumption.

<http://dx.doi.org/10.1136/heartjnl-2018-313131>

Aspirin and bleeding and no help for the heart

Effect of Aspirin on Cardiovascular Events and Bleeding in the Healthy Elderly

- John J. McNeil, M.B., B.S., Ph.D.,

BACKGROUND

Aspirin is a well-established therapy for the secondary prevention of cardiovascular events. However, its role in the primary prevention of cardiovascular disease is unclear, especially in older persons, who have an increased risk.

METHODS

From 2010 through 2014, we enrolled community-dwelling men and women in Australia and the United States who were 70 years of age or older (or ≥ 65 years of age among blacks and Hispanics in the United States) and did not have cardiovascular disease, dementia, or disability. Participants were randomly assigned to receive 100 mg of enteric-coated aspirin or placebo. The primary end point was a composite of death, dementia, or persistent physical disability; results for this end point are reported in another article in the *Journal*. Secondary end points included major hemorrhage and cardiovascular disease (defined as fatal coronary heart disease, nonfatal myocardial infarction, fatal or nonfatal stroke, or hospitalization for heart failure).

RESULTS

Of the 19,114 persons who were enrolled in the trial, 9525 were assigned to receive aspirin and 9589 to receive placebo. After a median of 4.7 years of follow-up, the rate of cardiovascular disease was 10.7 events per 1000 person-years in the aspirin group and 11.3 events per 1000 person-years in the placebo group (hazard ratio, 0.95; 95% confidence interval [CI], 0.83 to 1.08). The rate of major hemorrhage was 8.6 events per 1000 person-years and 6.2 events per 1000 person-years, respectively (hazard ratio, 1.38; 95% CI, 1.18 to 1.62; $P < 0.001$).

CONCLUSIONS

The use of low-dose aspirin as a primary prevention strategy in older adults resulted in a significantly higher risk of major hemorrhage and did not result in a significantly lower risk of cardiovascular disease than placebo. (Funded by the National Institute on Aging and others; ASPREE ClinicalTrials.gov number, [NCT01038583](https://clinicaltrials.gov/ct2/show/study/NCT01038583).)

Marriage dissatisfaction and heart disease

Journal Summaries in Family Medicine

Marriage dissatisfaction and the risk of sudden cardiac death among men

The American Journal of Cardiology — Isiozor NM, et al. | September 28, 2018

Researchers used the Kuopio Ischemic Heart Disease study (an ongoing prospective population-based study in Finland) to evaluate the link between perceived level of marriage satisfaction and risk of sudden cardiac death (SCD) in 2,262 men. They used a well-structured self-administered questionnaire to evaluate perceived level of marriage satisfaction in study participants and multivariable adjusted cox regression models to estimate hazard ratios (95% CI) for SCD. During a median follow-up of 25.9 years, they recorded 239 cases of SCD. Among middle-aged Caucasian men, the researchers noted an increased risk of SCD in relation to dissatisfied marriage, which was independent of conventional cardiovascular risk factors.

Isometric exercise and BP**A Comparison Of Blood Pressure Reductions Following 12-Weeks Of Isometric Exercise Training Either In The Laboratory Or At Home**

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DOI: <https://doi.org/10.1016/j.jash.2018.09.003>

Purpose

Isometric exercise training (IET) induced reductions in resting blood pressure (RBP) have been achieved in laboratory environments, but data in support of IET outside the lab is scarce. The aim of this study was to compare 12-weeks of home-based (HOM) IET with laboratory-based, face-to-face (LAB) IET in hypertensive adults.

Methods

22 hypertensive participants (24-60 years) were randomized to three conditions; HOM, LAB or control (CON). IET involved isometric handgrip training (4 x 2-minutes at 30% maximum voluntary contraction, 3 days per week). RBP was measured every 6-weeks (0, 6 and 12 weeks) during training and 6-weeks post-training (18 weeks).

Results

Clinically meaningful, but not statistically significant reductions RBP were observed following 12 weeks of LAB IET (SBP -9.1 ± 4.1 ; DBP -2.8 ± 2.1 $P > 0.05$), which was sustained for 6 weeks of detraining (SBP -8.2 ± 2.9 ; DBP -4 ± 2.9 , $P > 0.05$). RBP was reduced in the HOM group after 12 weeks of training (SBP -9.7 ± 3.4 ; DBP -2.2 ± 2.0 $P > 0.05$) which was sustained for an additional 6 weeks of detraining (SBP -5.5 ± 3.4 ; DBP -4.6 ± 1.8 , $P > 0.05$).

Conclusions

Unsupervised home-based IET programs present an exciting opportunity for community-based strategies to combat hypertension but additional work is needed if IET is to be employed routinely outside the laboratory.

BP and aortic valve disease**Elevated blood pressure and risk of aortic valve disease: a cohort analysis of 5.4 million UK adults**

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European Heart Journal, ehy486, <https://doi.org/10.1093/eurheartj/ehy486>

Aims

To test two related hypotheses that elevated blood pressure (BP) is a risk factor for aortic valve stenosis (AS) or regurgitation (AR).

Methods and results

In this cohort study of 5.4 million UK patients with no known cardiovascular disease or aortic valve disease at baseline, we investigated the relationship between BP and risk of incident AS and AR using multivariable-adjusted Cox regression models. Over a median follow-up of 9.2 years, 20 680 patients (0.38%) were diagnosed with AS and 6440 (0.12%) patients with AR. Systolic BP (SBP) was continuously related to the risk of AS and AR with no evidence of a nadir down to 115 mmHg. Each 20 mmHg increment in SBP was associated with a 41% higher risk of AS (hazard ratio 1.41, 95% confidence interval 1.38–1.45) and a 38% higher risk of AR (1.38, 1.31–1.45). Associations were stronger in younger patients but with no strong evidence for interaction by gender or body mass index. Each 10 mmHg increment in diastolic BP was associated with a 24% higher risk of AS (1.24, 1.19–1.29) but not AR (1.04, 0.97–1.11). Each 15 mmHg increment in pulse pressure was associated with a 46% greater risk of AS (1.46, 1.42–1.50) and a 53% higher risk of AR (1.53, 1.45–1.62).

Conclusion

Long-term exposure to elevated BP across its whole spectrum was associated with increased risk of AS and AR. The possible causal nature of the observed associations warrants further investigation.

Parkinson's disease and iBS/Chron's

The risk of Parkinson's disease in inflammatory bowel disease: A systematic review and meta-analysisFeng zhu¹ Chuling Li¹

Jianfeng Gong Weiming Zhu Lili Gu

Ning Li

DOI: <https://doi.org/10.1016/j.dld.2018.09.017>**Background**

Several studies have reported an increased prevalence of Parkinson disease (PD) amongst patients with inflammatory bowel disease (IBD) with conflicting results. We aimed to evaluate the risk of PD in the IBD population by conducting a meta-analysis (MA).

Methods

A systematic review with MA of the existing literature was conducted. The main outcome of interest was the incidence of developing PD in patients previously diagnosed with IBD.

Results

Four studies were included in this MA. The overall risk of PD in IBD was significantly higher than controls (RR 1.41, 95% c.i. 1.19-1.66). Crohn's disease had a 28% increased risk of PD and ulcerative colitis had a 30% increased risk of PD compared to controls (CD: RR 1.28, 95% c.i. 1.08-1.52, UC: RR 1.30, 95% c.i. 1.15-1.47).

Conclusion

The MA detected an increased risk of PD in the IBD population and CD/UC subgroup. These results merit further clinical validation in future studies.

Factors related to GERD in females**Gastroesophageal reflux disease and its related factors among women of reproductive age: Korea Nurses' Health Study**

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BMC Public Health 2018 **18**:1133

<https://doi.org/10.1186/s12889-018-6031-3>

Background

Recently, the number of patients diagnosed with gastroesophageal reflux disease (GERD) has increased in Korea. Risk factors of GERD include age, sex, medication use, lack of physical exercise, increased psychological stress, low or high body mass index (BMI), unhealthy eating habits, increased alcohol consumption, and cigarette smoking. However, few studies examined the major factors affecting GERD in women of childbearing age. Therefore, this study assessed the risk factors of GERD among 20,613 female nurses of reproductive age using data from the Korea Nurses' Health Study.

Methods

Participants were recruited from July 2013 to November 2014. They provided their history of GERD 1 year prior to data collection, along with information on their demographic characteristics, health-related behaviors, diet, medical history, and physical and psychological factors. Of the total sample, 1184 individuals with GERD diagnosed in the year prior to the study were identified. Propensity score matching was used for analysis.

Results

Cigarette smoking, increased alcohol consumption, low or high BMI, depression, and increased psychosocial stress were associated with the prevalence of GERD among Korean young women. Multivariate ordinal logistic regression analysis revealed significant positive relationships between GERD and being a former smoker; having a low ($< 18.5 \text{ kg/m}^2$) or high BMI ($> 23 \text{ kg/m}^2$); and having mild, moderate, moderately severe, and severe depression.

Conclusions

Smoking, BMI, and depression were associated with GERD. To reduce this risk among female nurses, intervention strategies are required to help nurses maintain a normal weight and manage their depression.

13 C. AIRWAYS/SWALLOWING/SPEECH

Sleep and cognitive decline

Journal Summaries in Internal Medicine

Sleep and subjective cognitive decline in cognitively healthy elderly: Results from two cohorts

Journal of Sleep Research — Tsapanou A, et al. | September 27, 2018

This cross-sectional design from two studies of older adults—the WHICAP (the United States) and the HELIAD (Greece)—explored the link between sleep and subjective cognitive decline in cognitively healthy elderly adults.

The study sample consisted of 1,576 WHICAP and 1,456 HELIAD members who did not have mild cognitive impairment, dementia, or severe depression/anxiety. Using the Sleep Scale from the Medical Outcomes Study, sleep problems were estimated. Except orientation for the WHICAP, sleep problems were related to complaints in all the cognitive subcategories. Findings revealed that sleep disturbance may be accompanied by subjective cognitive impairment at any given level of objective cognition.

The outcomes have implications for the correlates and potential etiology of subjective cognitive decline, which, the investigators recommended, should be considered in the assessment and treatment of older adults with cognitive complaints.

Circadian clocks and sleep

REVIEWSPECIAL ISSUE: TIME IN THE BRAIN| VOLUME 41, ISSUE 10, P677-688, OCTOBER 01, 2018

Circadian Clocks and Sleep: Impact of Rhythmic Metabolism and Waste Clearance on the brain

PlumX Metrics v [DOI:https://doi.org/10.1016/j.tins.2018.07.007](https://doi.org/10.1016/j.tins.2018.07.007)

The physiology and metabolism of organisms are organized in a temporal fashion using cellular circadian clocks for timing. These cellular clocks are synchronized at the tissue level and are in stable phase relationships to other tissues and organs, thereby establishing an organism-wide circadian system.

Temporal organization ensures efficient and highly coordinated metabolism, which is essential for adaptability and robustness of physiological functions under changing environmental conditions. Chronic disturbance of this coordination (e.g., rotating shift work, and chronic jet lag) leads to interference between anabolic and catabolic processes and an increase of metabolic and protein waste products coupled with inefficient clearance. As a consequence, metabolic and neurological diseases may develop.

The glymphatic system has emerged as a waste clearance system for the central nervous system. Its detailed function and temporal coordination for optimal waste clearance is subject of intense research.

The rotation of the Earth around its axis causes periodic exposure of half of its surface to sunlight. This daily recurring event has been internalized in most organisms in the form of cellular circadian clock mechanisms. These cellular clocks are synchronized with each other in various ways to establish circadian networks that build the circadian program in tissues and organs, coordinating physiology and behavior in the entire organism. In the mammalian brain, the suprachiasmatic nucleus (SCN) receives light information via the retina and synchronizes its own neuronal clocks to the light signal. Subsequently, the SCN transmits this information to the network of clocks in tissues and organs, thereby synchronizing body physiology and behavior. Disruption of cellular clocks and/or destruction of the synchronization between the clocks, as experienced for instance in jet lag and shift-work conditions, affects normal brain function and can lead to metabolic problems, sleep disturbance, and accelerated neurological decline. In this review, we highlight ways through which the circadian system can coordinate normal brain function, with a focus on metabolism and metabolic astrocyte–neuron communications. Recent developments, for example, on how waste clearance in the brain could be modulated by the circadian clock, will also be discussed. This synthesis provides insights into the impact of metabolism not only on the circadian clock, but also on sleep and how this connection may exacerbate neurological diseases.

OSA and dysphagia

Dysphagia pp 1–8|

A Pilot Study on the Efficacy of Continuous Positive Airway Pressure on the Manifestations of Dysphagia in Patients with Obstructive Sleep Apnea

- Fabio Azevedo Caparroz Milena de Almeida Torres Campanholo Danilo Anunciatio Sguillar Leonardo Haddad Sung Woo Park Lia Bittencourt
- Sergio Tufik Fernanda Louise Martinho Haddad

There is evidence in the literature demonstrating that patients with obstructive sleep apnea (OSA) may present with dysphagia, but few studies have evaluated whether this complaint can be reversed with treatment of OSA.

To assess whether findings of dysphagia in patients with OSA can be reversed with the use of continuous positive airway pressure (CPAP) devices. Seventy adult patients (age 18–70 years) with moderate or severe OSA were included in the study. All patients underwent fiberoptic endoscopic evaluation of swallowing (FEES) and completed the SWAL-QOL questionnaire on quality of life in dysphagia. Patients with visible abnormalities on FEES were treated with CPAP and reassessed after 3 months. The prevalence of dysphagia was 27.3% (18 patients). Premature spillage was the main finding. On comparison of groups with and without dysphagia, the SWAL-QOL score was significantly worse in the dysphagia group in domain 2 (eating duration and eating desire, $p = 0.015$), with no impact on overall score ($p = 0.107$). Of the 18 patients with dysphagia, 12 were started on CPAP; 11 exhibited satisfactory adherence and remained in the study. Abnormal FEES findings resolved in 81% ($n = 9/11$) of patients who started CPAP ($p = 0.004$), and dysphagia-specific quality of life also improved significantly (overall SWAL-QOL score, $p = 0.028$).

In this sample of patients with OSA, the overall prevalence of dysphagia (as demonstrated by premature spillage on FEES) was 27.3%. Treatment of OSA with CPAP was able to reverse the endoscopic findings of swallowing dysfunction and to improve quality of life as measured by the SWAL-QOL.

OSA impacts vestibular function

J Clin Sleep Med. 2015 Oct 15;11(10):1101-7. doi: 10.5664/jcsm.5080.

A Pilot Study on the Efficacy of Continuous Positive Airway Pressure on the Manifestations of Ménière's Disease in Patients with Concomitant Obstructive Sleep Apnea Syndrome.

Nakayama M^{1,2}, Masuda A¹, Ando KB¹, Arima S¹, Kabaya K², Inagaki A², Nakamura Y², Suzuki M², Brodie H³, Diaz RC³, Murakami S².

OBJECTIVES:

To evaluate the effect of continuous positive airway pressure (CPAP) therapy on Ménière's disease patients with concomitant obstructive sleep apnea syndrome (OSAS), since recent reports suggest OSAS may cause dysfunction of the vestibular system.

STUDY DESIGN:

Prospective study using CPAP administered to patients diagnosed with "Definite Ménière's disease" according to the guidelines of the American Academy of Otolaryngology--Head and Neck Surgery and combined with OSAS.

SETTING:

University hospital.

METHODS:

Twenty consecutive patients, 14 male and 6 female with active, unilateral, cochleovestibular Ménière's disease refractory to medical management who also had concurrent OSAS as defined by International Classification of Sleep Disorders, Second Edition were selected to undergo solitary CPAP therapy. Audiometric testing, caloric testing, and DHI survey were conducted before and after CPAP therapy and compared to assess effectiveness of CPAP therapy as utilized for treatment of Ménière's disease.

RESULTS:

Although caloric testing did not show significant difference, audiometric testing and results of dizziness handicap inventory were significantly improved ($p < 0.05$) after CPAP therapy only, without standard treatment for Ménière's disease.

CONCLUSION:

Recent reports have suggested that OSAS may cause dysfunction of the vestibular system. We investigated whether standard therapy for OSAS would be of benefit in the management of vertigo and hearing loss in Ménière's disease patients. Our study cohort demonstrated significant improvement in both DHI and audiometric testing following solitary CPAP therapy for OSAS. Solitary CPAP therapy may become a new effective treatment strategy for Ménière's disease patients with OSAS, not just only for control of dizziness and vertigo but also for potential benefit of hearing.

31. KNEE**Pain in elderly****Differentiating knee pain phenotypes in older adults: a prospective cohort study**

Feng Pan Jing Tian Flavia Cicuttini Graeme Jones Dawn Aitken

Rheumatology, key299, <https://doi.org/10.1093/rheumatology/key299>**Objective**

To identify and validate knee pain phenotypes in an older population across different pain-related domains over 10.7 years.

Methods

A total of 963 participants (mean age 63 years) from a population-based older adult cohort study were studied at baseline and followed up at 2.6 ($n = 875$), 5.1 ($n = 768$) and 10.7 years ($n = 563$). Baseline demographic, psychological, lifestyle and comorbidities data were obtained and MRI was performed to measure knee structural pathology. WOMAC pain and pain at multiple sites were assessed by questionnaires at each time-point. Latent class analysis was used to identify knee pain phenotypes, considering sex, BMI, emotional problems, education level, comorbidities, number of painful sites and knee structural pathology.

Results

Three pain phenotypes were identified: Class 1: high prevalence of emotional problems and low prevalence of structural damage (25%); Class 2: high prevalence of structural damage and low prevalence of emotional problems (20%); Class 3: low prevalence of emotional problems and low prevalence of structural damage (55%). Participants within Class 1 and 2 had greater BMI, more comorbidities, a higher prevalence of radiographic knee OA and knee structural pathology compared with Class 3. Furthermore, compared with Class 2 and 3, WOMAC pain and number of painful sites were consistently greater at each time-point over 10.7 years in Class 1. Results were similar when the analyses were restricted to participants with radiographic knee OA.

Conclusion

Psychological and structural factors interact with each other to exacerbate pain perception, suggesting that tailored treatment approaches for older people with knee pain in clinical practice are needed.

33. MENISCUS

Risk of meniscectomy

Journal Summaries in Orthopedics

Adverse outcomes after arthroscopic partial meniscectomy: A study of 700,000 procedures in the national Hospital Episode Statistics database for England


The Lancet — Abram SGF, et al. | September 27, 2018

Since the published clinical trial evidence in the past 6 years has raised questions about the effectiveness of arthroscopic partial meniscectomy in some patient groups and there are concerns about potential overuse, researchers ascertained the true risk of serious complications after arthroscopic partial meniscectomy. They found a low risk associated with undergoing arthroscopic partial meniscectomy. However, the procedure was related to some rare but serious complications (including pulmonary embolism and infection), and no decline in the risks has been seen with time. The data provide a basis for decision making and consent. Methods

- Excluding simultaneous or staged (within 6 months) bilateral cases, researchers analysed national Hospital Episode Statistics data for all arthroscopic partial meniscectomies done in England between April 1, 1997, and March 31, 2017.
- They identified complications developing in the 90 days following the index procedure.
- The occurrence of at least one serious complication within 90 days (which was defined as either myocardial infarction, stroke, pulmonary embolism, infection requiring surgery, fasciotomy, neurovascular injury, or death) was the primary outcome.
- They determined factors associated with complications by using logistic regression modelling and, when possible, compared risk with general population data. Results
- For analysis, 699,965 were eligible of a total of 1,088,782 arthroscopic partial meniscectomies performed.
- They noted the occurrence of serious complications within 90 days in 2,218 (0.317% [95% CI 0.304–0.330]) cases, including 546 pulmonary embolisms (0.078% [95% CI 0.072–0.085]) and 944 infections necessitating further surgery (0.135% [95% CI 0.126–0.144]).
- They observed an increased risk of serious complications in relation to increasing age (adjusted odds ratio [OR] 1.247 per decade [95% CI 1.208–1.288] and modified Charlson comorbidity index (adjusted OR 1.860 per 10 units [95% CI 1.708–2.042]).
- Findings showed a reduced risk of serious complications in relation to female sex (adjusted OR 0.640 [95% CI 0.580–0.705]).
- An over time fall in the risk of mortality was also observed (adjusted OR 0.965 per year [95% CI 0.937–0.994]).
- A less frequent occurrence of mortality, myocardial infarction, and stroke was observed in the study cohort vs in the general population.
- No change was observed in the risks of infection and pulmonary embolism during the study, and these were found to be remarkably higher in the study cohort vs in the general population.
- They could prevent one pulmonary embolism for every 1,390 (95% CI 1,272–1,532) fewer knee arthroscopies done.
- Results showed that, for every 749 (95% CI 704–801) fewer procedures done, one native knee joint infection could be prevented.

35. KNEE/TOTAL**Age related decline****Age Related Functional Decline Following Total Knee Arthroplasty: Risk Adjustment is Mandatory**

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DOI: <https://doi.org/10.1016/j.arth.2018.09.046>

Background

Patient reported outcome measures (PROMs) are being used increasingly to determine the success of total knee arthroplasty (TKA). Our goal was to investigate whether advanced age is associated with lower PROMs scores.

Methods

We used our hospital's TKA registry to examine the relationship between age and PROMs in all patients 50-90 years of age who underwent unilateral or simultaneous bilateral primary TKA between 2007 and 2011 with a primary diagnosis of osteoarthritis. All five domains of the Knee Injury & Arthritis Outcomes Score (KOOS) and the Lower Extremity Activity Scale (LEAS) at baseline, 2 years, and 5 years were collected. The association between age and PROM score was assessed by piecewise linear regression using generalized estimating equations (GEE), adjusting for demographics, comorbidity, and baseline score.

Results

Significant non-linear relationships between age, KOOS subdomains, and LEAS were found. The placement of the age spline knot was at 70 years for KOOS symptom and 68 years for KOOS Pain, KOOS Activities of Daily Living (ADL), and LEAS. The KOOS symptom domain showed a significant worsening between 2 and 5-year follow-up ($p < 0.05$) as patients got older.

Conclusion

We found an age-related decline in KOOS Pain, KOOS Symptom, KOOS ADL, and LEAS scores. The best fitting spline knots were at 68 (KOOS Pain, KOOS ADL, and LEAS) and 70 years (KOOS Symptoms) respectively. This demonstrates that there is a critical age at which functional decline begins regardless of the quality of the TKA surgery. Our findings will help surgeons accurately guide patient expectations after TKA based on age.

37. OSTEOARTHRITIS/KNEE**Dairy and OA**

European Journal of Nutrition pp 1–12| Cite as

Consumption of dairy products in relation to the presence of clinical knee osteoarthritis: The Maastricht Study

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Purpose

Observational studies showed inverse associations between milk consumption and knee osteoarthritis (knee OA). There is lack of information on the role of specific dairy product categories. We explored the association between dairy consumption and the presence of knee osteoarthritis in 3010 individuals aged 40–75 years participating in The Maastricht Study.

Methods

The presence of knee OA was defined according to a slightly modified version of the American College of Rheumatology (ACR) clinical classification criteria. Data on dairy consumption were appraised by a 253-item FFQ covering 47 dairy products with categorization on fat content, fermentation or dairy type. Multivariable logistic regression analyses were performed to estimate odd ratios (ORs) and 95% confidence intervals (95%CI), while correcting for relevant factors.

Results

427 (14%) participants were classified as having knee OA. Significant inverse associations were observed between the presence of knee OA and intake of full-fat dairy and Dutch, primarily semi-hard, cheese, with OR for the highest compared to the lowest tertile of intake of 0.68 (95%CI 0.50–0.92) for full-fat dairy, and 0.75 (95%CI 0.56–0.99) for Dutch cheese. No significant associations were found for other dairy product categories.

Conclusion

In this Dutch population, higher intake of full-fat dairy and Dutch cheese, but not milk, was cross-sectionally associated with the lower presence of knee OA. Prospective studies need to assess the relationship between dairy consumption, and in particular semi-hard cheeses, with incident knee OA.

45 A. MANUAL THERAPY LUMBAR & GENERAL

Directional preference

Centralization and directional preference: An updated systematic review with synthesis of previous evidence

Stephen May Nils Runge Alessandro Aina

DOI: <https://doi.org/10.1016/j.msksp.2018.09.006>

Highlights

- Centralization and Directional Preference are important clinical findings.
- This systematic review summarises 43 additional articles since 2012.
- They are important prognostic indicators found in 60–70% of patients.
- They should be routinely monitored in all spinal assessments.
- Reliability was poor, and evidence they were treatment effect modifiers was absent.

Abstract

Background

Centralization and directional preference are common management and prognostic factors in spinal symptoms.

Objective

To update the previous systematic review.

Design

Systematic review to synthesis multiple aspects of centralization and directional preference.

Method

Contemporary search was made of multiple databases using relevant search terms. Abstracts and titles were filtered by two authors; relevant articles were independently reviewed by two authors for content, data extraction, and quality.

Results

Forty-three additional relevant articles were found. The quality of the studies, using PEDro for randomized controlled trials, was moderate or high in six out of ten RCTs; moderate or high in six out of 12 cohort studies. Prevalence of centralization was 40%, the same as the previous review. Directional preference prevalence was only 26%, much lower than the previous review; but neither clinical response was recorded in about a third of patients. Centralization and directional preference were confirmed as key positive prognostic factors, certainly in patients with low back pain, but limited evidence for patients with neck pain. There was no evidence that these might be important treatment effect modifiers. One study evaluated reliability, and found generally poor levels, despite training.

Conclusions

Centralization and directional preference are worthwhile indicators of prognosis, and should be routinely examined for even in patients with chronic low back pain. But they do not occur in all patients with spinal problems, and there was no evidence that they were treatment effect modifiers.

48 A. STM**Tendon enlarging with stretching – a new finding**

Proc Natl Acad Sci U S A. 2018 Apr 3;115(14):E3097-E3105. doi: 10.1073/pnas.1712697115. Epub 2018 Mar 19.

Muscle-tendon length and force affect human tibialis anterior central aponeurosis stiffness in vivo.

Raiteri BJ^{1,2}, Cresswell AG³, Lichtwark GA³.

The factors that drive variable aponeurosis behaviors in active versus passive muscle may alter the longitudinal stiffness of the aponeurosis during contraction, which may change the fascicle strains for a given muscle force.

However, it remains unknown whether these factors can drive variable aponeurosis behaviors across different muscle-tendon unit (MTU) lengths and influence the subsequent fascicle strains during contraction. Here, we used ultrasound and elastography techniques to examine in vivo muscle fascicle behavior and central aponeurosis deformations of human tibialis anterior (TA) during force-matched voluntary isometric dorsiflexion contractions at three MTU lengths.

We found that increases in TA MTU length increased both the length and apparent longitudinal stiffness of the central aponeurosis at low and moderate muscle forces ($P < 0.01$). We also found that increased aponeurosis stiffness was directly related to reduced magnitudes of TA muscle fascicle shortening for the same change in force ($P < 0.01$). The increase in slope and shift to longer overall lengths of the active aponeurosis force-length relationship as MTU length increased was likely due to a combination of parallel lengthening of aponeurosis and greater transverse aponeurosis strains.

This study provides in vivo evidence that human aponeurosis stiffness is increased from low to moderate forces and that the fascicle strains for a given muscle force are MTU length dependent. Further testing is warranted to determine whether MTU length-dependent stiffness is a fundamental property of the aponeurosis in pennate muscles and evaluate whether this property can enhance muscle performance.

Fascia

Brief Communication

Quantification of hyaluronan in human fasciae: variations with function and anatomical site

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Recently, alterations in fascial gliding-like movement have been invoked as critical in the etiology of myofascial pain.

Various methods have been attempted for the relief of this major and debilitating clinical problem. Paramount have been attempts to restore correct gliding between fascial layers and the movement over bone, joint, and muscular structures.

One of the key elements that underlies such fascial movement is hyaluronan. However, until now, the precise content of hyaluronan within fasciae has been unknown. This study quantifies for the first time the hyaluronan content of human fascial samples obtained from a variety of anatomic sites. Here, we demonstrate that the average amount varies according to anatomic site, and according to the different kinds of sliding properties of the particular fascia. For example, the fascia lata has 35 μg of hyaluronan per gram of tissue, similar to that of the rectus sheath (29 $\mu\text{g g}^{-1}$). However, the types of fascia adherent to muscle contain far less hyaluronan: 6 $\mu\text{g g}^{-1}$ in the fascia overlying the trapezius and deltoid muscles.

In the fascia that surrounds joints, the hyaluronan increases to 90 $\mu\text{g g}^{-1}$, such as in the retinacula of the ankle, where greater degrees of movement occur. Surprisingly, no significant differences were detected at any site as a function of age or sex (P -value > 0.05 , t -test) with the sole exception of the plantar fascia.

This work can provide a better understanding of the role of hyaluronan in fascia. It will facilitate a better comprehension of the modulation of the hyaluronan-rich layer that occurs in relation to the various conditions that affect fascia, and the diverse factors that underlie the attendant pathologies.

59. PAIN**Cannabis and pain****Cannabis and cannabinoids for the treatment of people with chronic noncancer pain conditions: a systematic review and meta-analysis of controlled and observational studies**

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This review examines evidence for the effectiveness of cannabinoids in chronic noncancer pain (CNCP) and addresses gaps in the literature by: considering differences in outcomes based on cannabinoid type and specific CNCP condition; including all study designs; and following IMMPACT guidelines.

MEDLINE, Embase, PsycINFO, CENTRAL, and clinicaltrials.gov were searched in July 2017. Analyses were conducted using Revman 5.3 and Stata 15.0. A total of 91 publications containing 104 studies were eligible (n = 9958 participants), including 47 randomised controlled trials (RCTs) and 57 observational studies. Forty-eight studies examined neuropathic pain, 7 studies examined fibromyalgia, 1 rheumatoid arthritis, and 48 other CNCP (13 multiple sclerosis-related pain, 6 visceral pain, and 29 samples with mixed or undefined CNCP). Across RCTs, pooled event rates (PERs) for 30% reduction in pain were 29.0% (cannabinoids) vs 25.9% (placebo); significant effect for cannabinoids was found; number needed to treat to benefit was 24 (95% confidence interval [CI] 15-61); for 50% reduction in pain, PERs were 18.2% vs 14.4%; no significant difference was observed. Pooled change in pain intensity (standardised mean difference: -0.14, 95% CI -0.20 to -0.08) was equivalent to a 3 mm reduction on a 100 mm visual analogue scale greater than placebo groups. In RCTs, PERs for all-cause adverse events were 81.2% vs 66.2%; number needed to treat to harm: 6 (95% CI 5-8). There were no significant impacts on physical or emotional functioning, and low-quality evidence of improved sleep and patient global impression of change. Evidence for effectiveness of cannabinoids in CNCP is limited.

Effects suggest that number needed to treat to benefit is high, and number needed to treat to harm is low, with limited impact on other domains. It seems unlikely that cannabinoids are highly effective medicines for CNCP.

Morphine's results like OxyContin**Comparison of analgesic effect of oxycodone and morphine on patients with moderate and advanced cancer pain: a meta-analysis**

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Background

Morphine and oxycodone are considered as wide-spreadly used opioids for moderate/severe cancer pain. However, debate exists about the evidence regarding their relative tolerability and underlying results.

Methods

A systematic search of online electronic databases, including PubMed, Embase, Cochrane library updated on October 2017 were conducted. The meta-analysis was performed including the studies that were designed as randomized controlled trials.

Results

In total, seven randomized clinical trials met our inclusion criteria. No statistical differences in analgesic effect between oxycodone and morphine were observed. Both the pooled analysis of API (MD = 0.01, 95% CI -0.22 – 0.23; $p = 0.96$) and WPI (MD = -0.05, 95% CI -0.21 – 0.30; $p = 0.72$) demonstrated clinical non-inferiority of the efficacy of morphine compared with oxycodone, respectively. Additionally, no significant difference in PRR response was observed in either oxycodone or morphine that were used in patients (MD = 0.99, 95% CI -0.88 – 1.11; $p = 0.87$). With the pooled result of AEs indicating the comparable safety profiles between the 2 treatment groups, the meta-analysis on the nausea (OR = 1.20, 95% CI 0.90–1.59; $p = 0.22$), vomiting (OR = 1.33, 95% CI 0.75–2.38; $p = 0.33$), somnolence (OR = 1.35, 95% CI 0.95–1.93; $p = 0.10$), diarrhea (OR = 1.01, 95% CI 0.60–1.67; $p = 0.98$), and constipation (OR = 1.04, 95% CI 0.77–1.41; $p = 0.79$) was conducted, respectively.

Conclusions

In the current study, no remarkable difference was identified either in analgesic efficacy or in tolerability of oxycodone and morphine as the first-line therapy for patients with moderate to severe cancer pain. Thus, no sufficient clinical evidence on the superior effects of oxycodone to morphine was provided in this experimental hypothesis.

62 A. NUTRITION/VITAMINS**Dietary fats****Changes in Types of Dietary Fats Influence Long-term Weight Change in US Women and Men**

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Background

The relation between dietary fat intake and body weight remains controversial. Few studies have examined long-term changes in types of dietary fat and weight change in longitudinal studies.

Objective

The objective of this study was to examine associations between intake of different types of fat and long-term weight change in US women and men.

Methods

The association between changes in consumption of varying types of fat and weight change was examined every 4 y through the use of multivariate models adjusted for age, baseline body mass index, and change in percentage energy from protein, intake of cereal fiber, fruits, and vegetables, alcohol use, and other lifestyle covariates in 3 prospective US cohorts, including 121,335 men and women free of diabetes, cardiovascular disease, cancer, or obesity over a 20- to 24-y follow-up. Dietary intakes and body weight were assessed via validated questionnaires. Cohort-specific results were pooled with the use of a random-effect meta-analysis.

Results

Compared with equivalent changes in carbohydrate intake, a 5% increase in energy from saturated fatty acid (SFA) and a 1% increase in energy from *trans*-fat were associated with 0.61 kg (95% CI: 0.54, 0.68 kg) and 0.69 kg (95% CI: 0.56, 0.84 kg) greater weight gain per 4-y period, respectively. A 5% increase in energy from polyunsaturated fatty acid (PUFA) was associated with less weight gain (−0.55 kg; 95% CI: −0.81, −0.29 kg). Increased intake of monounsaturated fatty acid (MUFA) from animal sources by 1% was associated with weight gain of 0.29 kg (95% CI: 0.25, 0.33 kg), whereas MUFA from plant sources was not associated with weight gain.

Conclusions

Different dietary fats have divergent associations with long-term weight change in US men and women. Replacing saturated and *trans*-fats with unsaturated fats, especially PUFAs, contributes to the prevention of age-related weight gain.

These trials were registered at clinicaltrials.gov as NCT00005152 and NCT00005182.

High CA and mortality

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High calcium intake in men not women is associated with all-cause mortality risk: Melbourne Collaborative Cohort Study

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Summary

The risk of mortality associated with high dietary calcium is uncertain. Unlike a highly publicised study in Swedish women, high dietary calcium intake in men—not women—was associated with increased all-cause mortality.

Purpose

The association of dietary calcium with mortality is controversial. A study of women from the Swedish Mammography Cohort (SMC) suggested higher calcium was associated with higher mortality risk, whilst a study of Australian adults from the Melbourne Collaborative Cohort Study (MCCS) suggested higher intakes were associated with lower mortality risk. Thus, we aimed to perform a sex-specific re-analysis of the MCCS to evaluate the association of dietary calcium with mortality outcomes and directly compare hazard estimates (95% confidence intervals) in women with those from the SMC.

Methods

A prospective cohort study of community-dwelling Australian adults was conducted, in which 34,627 individuals (women 20,834 (60.2%); mean \pm SD, age = 54 \pm 8 years) were included at baseline after excluding those with prevalent cardiovascular (CV) disease, cancer or incomplete data. Energy-adjusted dietary calcium was categorised into the following levels of consumption (mg/day): < 600, 600–999, 1000–1399 and \geq 1400. Mortality from all-causes, any cardiovascular disease and myocardial infarction was determined. Mortality hazards relative to intakes were estimated to be of 600–999 mg/day.

Results

In women, hazard estimates for calcium intake of \geq 1400 mg/day did not reach significance for all-cause (HR = 0.85; 0.66, 1.10) or CV (HR = 1.10; 0.69, 1.81) mortality in adjusted models. In men, intakes of \geq 1400 mg/day were associated with a 42% increased all-cause mortality risk (HR = 1.42; 1.02, 1.99). There was a trend toward increased CV mortality (HR = 1.83; 0.94, 3.55).

Conclusion

Contrary to findings from a similar study conducted in Swedish women, Australian women, after adjustment for cofounders showed no increase in mortality risk with high calcium intakes possibly reflecting differences in calcium handling dynamics, diet or lifestyle factors between the two countries. We identified an increased risk for men.