

4. INJECTIONS

C radiculopathy helped with injections

The effectiveness of ultrasound-guided cervical transforaminal epidural steroid injections in cervical radiculopathy: a prospective pilot study

Authors Zhang X, Shi H, Zhou J, Xu Y, Pu S, Lv Y, Wu J, Cheng Y, Du D

Published 31 December 2018 Volume 2019:12 Pages 171—177

DOI <https://doi.org/10.2147/JPR.S181915>

Background: Cervical transforaminal epidural steroid injection (CTFESI) is used to provide pain relief and restore function in patients with cervical radiculopathy. Traditionally, it is performed under the guidance of fluoroscopy or computed tomography. Here, we introduce a novel technique – ultrasound-guided CTFESI – with which operators can easily distinguish the close soft tissue (nerve, vessels) around the cervical foramina to avoid intravascular injection during the procedure.

Objective: To present the immediate and long-term effectiveness of ultrasound-guided CTFESI in patients with cervical radiculopathy in an academic pain-management center with prospective clinic experiments.

Methods: Fifteen patients with cervical radiculopathy who were resistant to conservative therapies and ultrasound-guided selective cervical spinal nerve-root injections, were treated with ultrasound-guided CTFESI. During the injection procedures, the needle tips were reconfirmed by real-time fluoroscopy. Pain numeric rating-scale and neck-disability-index scores were assessed from onset to six months after the procedures.

Results: During the procedures, based on real-time fluoroscopic confirmation, the injection solution outlined the spinal nerve root and spread into the epidural space in most cases (14 of 15). All patients reported pain relief within 10 minutes after the injection. The majority of patients (eleven of 15) experienced pain relief and neck-disability index-score improvement throughout the 6-month study period. No patient experienced any complication.

Conclusion: We suggest that ultrasound-guided CTFESI is an effective, safe, and simple procedure free of radiation or magnetization and provides sustained pain relief in patients with cervical radiculopathy who have failed previous conservation therapies.

7. PELVIC ORGANS/WOMAN'S HEALTH

Previous c section with later vaginal birthd

Duration of vaginal birth after cesarean- Is stage of labor at previous cesarean a factor?

American Journal of Obstetrics and Gynecology — Rottenstreich M, et al. | January 02, 2019

In this retrospective longitudinal study performed at a single academic teaching hospital, during 2006-2014, researchers investigated if the stage of labor at which the cesarean was performed at first delivery is associated to the duration of spontaneous 2nd delivery. They included 58,028 parturients with spontaneous onset of labor that completed a vaginal delivery (VD). Parturients undergoing first VD displayed significantly prolonged duration of labor compared to those undergoing repeat VD, 364 vs 152 minutes, respectively. They noted shortening of the duration of subsequent delivery on reaching the second stage of labor. This study may further enhance the understanding of the difference between primiparity to multiparity in regards to duration of spontaneous labor.

Breast CA risk

Breast cancer risk after recent childbirth: A pooled analysis of 15 prospective studies

Annals of Internal Medicine —

Nichols HB, et al. | January 03, 2019

Researchers examined the association of breast cancer risk with recent childbirth and characterized this relation in this pooled analysis of data from 15 prospective cohort studies under the international Premenopausal Breast Cancer Collaborative Group.

Study participants included females aged < 55 years. A total of 18,826 incident cases of breast cancer were diagnosed during 9.6 million person-years of follow-up. Parous women had an HR for breast cancer that peaked about 5 years after birth before decreasing to 0.77 after 34 years vs nulliparous women. A shift from positive to negative was observed about 24 years after the birth. The investigators noted a more pronounced increase in breast cancer risk after childbirth among those with a family history of breast cancer; increased risk of breast cancer was also greater among those who were older at first birth or who had multiple births.

The risk patterns were not altered by breastfeeding. Overall, parous women were found to have an increased risk of breast cancer for > 20 years after childbirth vs nulliparous women.

The researchers advised practitioners to consider recent childbirth as a risk factor for breast cancer in younger parous women.

Complexities of low birth weight

Obesity (Silver Spring). 2018 Dec 19. doi: 10.1002/oby.22375.

Effect of Birth Weight and Early Pregnancy BMI on Risk for Pregnancy Complications.

Andraweera PH^{1,2}, Dekker G^{1,2,3}, Leemaqz S^{1,2}, McCowan L⁴, Myers J⁵, Kenny L⁶, Walker J⁷, Poston L⁸, Roberts CT^{1,2}; SCOPE Consortium.

OBJECTIVE:

This study investigated the influence of birth weight on the risk of pregnancy complications, including preeclampsia (PE), gestational hypertension (GH), small for gestational age (SGA) pregnancy, spontaneous preterm birth, and gestational diabetes mellitus (GDM), and assessed the effect of early pregnancy BMI on the this relationship.

METHODS:

A total of 5,336 nulliparous women from the SCreening fOr Pregnancy Endpoints (SCOPE) study were included. Women's birth weights were self-reported and confirmed via medical records when possible. A birth weight of 3,000 to 3,499 g was considered the reference.

RESULTS:

After adjusting for confounders, birth weight < 2,500 g was associated with increased risk of GH (adjusted odds ratio [aOR] = 2.2, 95% CI = 1.3-3.7), PE (aOR = 1.7, 95% CI = 1.0-2.9), small for gestational age (aOR = 1.9, 95% CI = 1.1-3.2), and GDM (aOR = 2.4, 95% CI = 1.0-5.8) compared with the referent. Women born with birth weight < 2,500 g and who subsequently developed overweight or were diagnosed with obesity were at increased risk of GH (aOR = 2.2, 95% CI = 1.1-4.5), PE (aOR = 2.3, 95% CI = 1.2-4.5), and GDM (aOR = 3.2, 95% CI = 1.1-9.5) compared with women who were born with birth weight ≥ 2,500 g and remained lean.

CONCLUSIONS:

Women who were born with a low birth weight are at increased risk of pregnancy complications. Those born small may have undergone "programming" in response to unfavorable intrauterine conditions. In such women, the physiological demands of pregnancy may act as a "second hit," leading to pregnancy complications.

Vit D and CAL

Calcium and vitamin D supplementation with 3-year denosumab treatment is beneficial to enhance bone mineral density in postmenopausal patients with osteoporosis and rheumatoid arthritis

Authors Suzuki T, Nakamura Y, Kato H

DOI <https://doi.org/10.2147/TCRM.S182858>

Background: This 3-year retrospective study compared the outcomes of bisphosphonate-pretreated denosumab therapy with or without vitamin D and calcium supplementation in postmenopausal osteoporosis (OP) patients with rheumatoid arthritis (RA).

Materials and methods: Fifty-eight patients under long-term denosumab treatment were divided into groups without (denosumab group; 31 cases) or with (combination group; 27 cases) vitamin D and calcium supplementation. The bone markers of BAP, TRACP-5b, and urinary NTX were measured at baseline and every year for 3 years. We also evaluated bone mineral density (BMD) of the lumbar 1–4 vertebrae (L-BMD) and bilateral total hips (H-BMD) at the same time points.

Results: There were no significant differences in the percent changes of serum albumin-corrected calcium between the groups. The percent change in TRACP-5b was significantly higher in the combination group at 2 years. Serum 25-hydroxyvitamin D status was persistently high during therapy in both groups, with significant percent increases over baseline at 2 and 6 months in both groups and at 24 months in the combination group. The percent increase from baseline of serum zinc was significantly higher at 3 years in the combination group over the denosumab group. L-BMD and H-BMD were significantly increased at every time point for 3 years vs pretreatment levels in both groups and were significantly higher in the combination group at all time points.

Conclusion: Compared with denosumab monotherapy, the combination group displayed significantly increased serum zinc, L-BMD, and H-BMD at 3 years in OP patients with RA. Thus, calcium and vitamin D supplementation may be beneficial to enhance BMD gains, but not necessarily 25-hydroxyvitamin D status, in patients with OP and RA under denosumab.

Impact of delivery Mode

JAMA. 2018 Dec 18;320(23):2438-2447. doi: 10.1001/jama.2018.18315.

Association of Delivery Mode With Pelvic Floor Disorders After Childbirth.

Blomquist JL¹, Muñoz A², Carroll M², Handa VL³.

IMPORTANCE: Pelvic floor disorders (eg, urinary incontinence), which affect approximately 25% of women in the United States, are associated with childbirth. However, little is known about the course and progression of pelvic floor disorders over time.

OBJECTIVE: To describe the incidence of pelvic floor disorders after childbirth and identify maternal and obstetrical characteristics associated with patterns of incidence 1 to 2 decades after delivery.

DESIGN, SETTING, AND PARTICIPANTS: Women were recruited from a community hospital for this cohort study 5 to 10 years after their first delivery and followed up annually for up to 9 years. Recruitment was based on mode of delivery; delivery groups were matched for age and years since first delivery. Of 4072 eligible women, 1528 enrolled between October 2008 and December 2013. Annual follow-up continued through April 2017.

EXPOSURES: Participants were categorized into the following mode of delivery groups: cesarean birth (cesarean deliveries only), spontaneous vaginal birth (≥ 1 spontaneous vaginal delivery and no operative vaginal deliveries), or operative vaginal birth (≥ 1 operative vaginal delivery).

MAIN OUTCOMES AND MEASURES: Stress urinary incontinence (SUI), overactive bladder (OAB), and anal incontinence (AI), defined using validated threshold scores from the Epidemiology of Prolapse and Incontinence Questionnaire, and pelvic organ prolapse (POP), measured using the Pelvic Organ Prolapse Quantification Examination. Cumulative incidences, by delivery group, were estimated using parametric methods. Hazard ratios, by exposure, were estimated using semiparametric models.

RESULTS: Among 1528 women (778 in the cesarean birth group, 565 in the spontaneous vaginal birth group, and 185 in the operative vaginal birth group), the median age at first delivery was 30.6 years, 1092 women (72%) were multiparous at enrollment (2887 total deliveries), and the median age at enrollment was 38.3 years. During a median follow-up of 5.1 years (7804 person-visits), there were 138 cases of SUI, 117 cases of OAB, 168 cases of AI, and 153 cases of POP. For spontaneous vaginal delivery (reference), the 15-year cumulative incidences of pelvic floor disorders after first delivery were as follows: SUI, 34.3% (95% CI, 29.9%-38.6%); OAB, 21.8% (95% CI, 17.8%-25.7%); AI, 30.6% (95% CI, 26.4%-34.9%), and POP, 30.0% (95% CI, 25.1%-34.9%). Compared with spontaneous vaginal delivery, cesarean delivery was associated with significantly lower hazard of SUI (adjusted hazard ratio [aHR], 0.46 [95% CI, 0.32-0.67]), OAB (aHR, 0.51 [95% CI, 0.34-0.76]), and POP (aHR, 0.28 [95% CI, 0.19-0.42]), while operative vaginal delivery was associated with significantly higher hazard of AI (aHR, 1.75 [95% CI, 1.14-2.68]) and POP (aHR, 1.88 [95% CI, 1.28-2.78]). Stratifying by delivery mode, the hazard ratios for POP, relative to a genital hiatus size less than or equal to 2.5 cm, were 3.0 (95% CI, 1.7-5.3) for a genital hiatus size of 3 cm and 9.0 (95% CI, 5.5-14.8) for a genital hiatus size greater than or equal to 3.5 cm.

CONCLUSIONS AND RELEVANCE:

Compared with spontaneous vaginal delivery, cesarean delivery was associated with significantly lower hazard for stress urinary incontinence, overactive bladder, and pelvic organ prolapse, while operative vaginal delivery was associated with significantly higher hazard of anal incontinence and pelvic organ prolapse. A larger genital hiatus was associated with increased risk of pelvic organ prolapse independent of delivery mode.

8. VISCERA

Crohn's disease and mortality

J Gastroenterol. 2019 Jan;54(1):42-52. doi: 10.1007/s00535-018-1482-y. Epub 2018 Jun 9.

Crohn's disease-specific mortality: a 30-year cohort study at a tertiary referral center in Japan.

Yasukawa S¹, Matsui T², Yano Y¹, Sato Y¹, Takada Y¹, Kishi M¹, Ono Y¹, Takatsu N¹, Nagahama T¹, Hisabe T¹, Hirai F³, Yao K⁴, Ueki T¹, Higashi D⁵, Futami K⁵, Sou S⁶, Sakurai T⁷, Yao T⁸, Tanabe H⁹, Iwashita A⁹, Washio M¹⁰.

BACKGROUND:

In this study, survival and cause of death were investigated in patients with Crohn's disease (CD) at a tertiary referral center.

METHODS:

A database was created based on the medical records of 1108 CD patients who had a history of visiting our hospital to investigate background characteristics, cumulative survival rates from diagnosis, causes of death, and the standardized mortality ratio (SMR) for each cause of death. A follow-up questionnaire survey of patients followed up inadequately was also conducted. The cumulative survival rate from diagnosis was determined using the life table method and compared with that of a sex- and age-matched population model from the year 2000.

RESULTS:

The study included 1108 patients whose mean age at diagnosis was 25.6 ± 10.8 years. The mean duration of follow-up was 14.6 ± 9.4 years, and there were 52 deaths. The cumulative survival rate was significantly lower 25 years after the diagnosis of CD (91.7%) than in the standard population model (95.7%). SMRs for both all causes [3.5; 95% confidence interval (CI): 2.7-4.6] and CD-specific causes (36.7; 95% CI 26.1-51.6) were high. Among the CD-specific causes, SMRs were especially high for small intestine and colorectal cancers, gastrointestinal diseases including intestinal failure (IF), perioperative complications, and amyloidosis.

CONCLUSION:

The SMRs for both all causes and CD-specific causes were high in CD patients. CD-specific causes including intestinal cancer, IF, perioperative complications, and amyloidosis showed especially high SMRs.

Aspirins questionable value in cardiac problems**Efficacy and safety of aspirin for primary prevention of cardiovascular events: a meta-analysis and trial sequential analysis of randomized controlled trials**

Ahmed N Mahmoud Mohamed M Gad Akram Y Elgendy Islam Y Elgendy Anthony A Bavry
European Heart Journal, ehy813, <https://doi.org/10.1093/eurheartj/ehy813>

Aims

The role of aspirin in the primary prevention setting is continuously evolving. Recent randomized trials have challenged the role of aspirin in the primary prevention setting.

Methods and results

Electronic databases were searched for randomized trials that compared aspirin vs. placebo (or control) in subjects without established atherosclerotic disease. The primary efficacy outcome was all-cause mortality, while the primary safety outcome was major bleeding. Summary estimates were reported using a DerSimonian and Laird random effects model. A total of 11 trials with 157 248 subjects were included. At a mean follow-up of 6.6 years, aspirin was not associated with a lower incidence of all-cause mortality [risk ratio (RR) 0.98, 95% confidence interval (CI) 0.93–1.02; $P = 0.30$]; however, aspirin was associated with an increased incidence of major bleeding (RR 1.47, 95% CI 1.31–1.65; $P < 0.0001$) and intracranial haemorrhage (RR 1.33, 95% CI 1.13–1.58; $P = 0.001$). A similar effect on all-cause mortality and major bleeding was demonstrated in diabetic and high cardiovascular risk patients (i.e. 10-year risk $>7.5\%$). Aspirin was associated with a lower incidence of myocardial infarction (RR 0.82, 95% CI 0.71–0.94; $P = 0.006$); however, this outcome was characterized by considerable heterogeneity ($I^2 = 67\%$), and this effect was no longer evident upon limiting the analysis to the more recent trials. Trial sequential analysis confirmed the lack of benefit of aspirin for all-cause mortality up to a relative risk reduction of 5%.

Conclusion

Among adults without established cardiovascular disease, aspirin was not associated with a reduction in the incidence of all-cause mortality; however, it was associated with an increased incidence of major bleeding. The routine use of aspirin for primary prevention needs to be reconsidered.

9. THORACIC SPINE

Management of t spine pain

Musculoskeletal Science and Practice
Volume 39, February 2019, Pages 58-66

Management of thoracic spine pain and dysfunction: A survey of clinical practice in the UK

panel Nicola R. Heneghan^a S. Gormley^b C. Hallam^c Alison Rushton^a

<https://doi.org/10.1016/j.msksp.2018.11.006> Get rights and content

Highlights

- Each week 4 patients are seen with TSPD compared to 12 lumbar and 8 cervical.
- Thoracic spine examination is included in neck, low back and shoulder complaints.
- Exercise is widely used for TSPD despite a paucity of supporting evidence.
- Passive hands on interventions are used more in private practice and sport settings.
- Use of electrotherapy and manipulation varied across levels of expertise.

Background The thoracic spine (TS) is relatively under-researched compared to the neck and low back. As the challenge of managing spinal pain persists, understanding current physiotherapy clinical practice for TS pain and dysfunction is necessary to inform future research in this area.

Objective To investigate physiotherapy practice for managing thoracic spine pain and dysfunction (TSPD) in the UK, with a secondary focus on examining differences across settings and expertise.

Design and method A cross sectional e-survey informed by existing evidence was designed. Comprising closed and open questions, the survey is reported in line with Checklist for Reporting Results of Internet E-Surveys. Eligible participants were UK-trained physiotherapists managing patients with TSPD, recruited for 9 weeks up to 8/2/16. Data analysis included descriptive analyses (closed questions) and thematic analysis (open questions).

Results From the 485 respondents, fulfilling the required sample size, key findings included. Examination: Active motion testing, palpation and postural assessment was 'always' undertaken by >89% of respondents. Management: Active (exercises) and passive (e.g. mobilisations) techniques were used by >85% of respondents, with ~50% using manipulation, taping and acupuncture. Practice settings: Although broadly similar passive techniques were used more in private practice and sport. Expertise: Broadly similar patterns were seen for use of exercise across levels of expertise, although differences observed for electrotherapy and manipulation.

Conclusion

Despite limited research exercise is widely used in all areas of practice and across all level of expertise. Further research is required to investigate exercise prescription for TSPD and implementation of evidence-based practice.

10 A. CERVICAL SPINE

C spine pain and altered responses

Original article

Altered trunk head co-ordination in those with persistent neck pain

A panel Julia Treleaven^a Hiro Takasaki^a Helena Grip^b

Show more

<https://doi.org/10.1016/j.msksp.2018.11.010> Get rights and content

Highlights

- Neck pain subjects have difficulty moving their trunk independently of their head.
- They also perform the tasks more slowly.
- This might be related to altered reflex activity of the cervico-colic reflex.

Background

Decreased neck motion and sensorimotor deficits have been identified in those with neck pain. It is thought that these might be related to altered reflex mechanisms between the neck, eyes and the vestibular system. Trunk, head co-ordination might also be altered in neck pain.

Objectives

This study investigated trunk head co-ordination ability in subjects with neck pain compared to asymptomatic controls.

Method

Twenty-four subjects with persistent neck pain and twenty-six age and gender matched healthy controls performed 3 trials of 3 trunk movements whilst trying to keep the head still - (1) alternate trunk movement to the left and right (2) trunk movement to the left (3) trunk movement to the right. Wireless motion sensors positioned over the sternum and the forehead measured trunk and head range and velocity of motion.

Analysis

ANOVA was used to compare trunk and head range and velocity of motion during the 3 tasks.

Results

Neck pain subjects had significantly less trunk movement ($p < 0.05$) and velocity ($p < 0.02$) as well as significantly increased head movement ($p < 0.03$) during most tasks compared to control subjects.

Discussion

The results of the study suggest that neck pain subjects have difficulty moving their trunk independently of their head. They are less able to keep the head still while moving the trunk and perform the tasks more slowly. These findings might be related to altered reflex activity of the cervico-colic reflex and sensorimotor control. Further research is required.

11. UPPER C SPINE

Red flag testing

Musculoskeletal Science and Practice Volume 39, February 2019, Pages 123-129

Australian musculoskeletal physiotherapist's perceptions, attitudes and opinions towards pre-manipulative screening of the cervical spine prior to manual therapy: Report from the focus groups

Author links open overlay panel Lucy Thomas^a Michelle Allen^b Debra Shirley^c Darren Rivett^d

<https://doi.org/10.1016/j.msksp.2018.12.005> Get rights and content

Highlights

- Guidelines represent an important professional standard and medico legal safeguard.
- Broader scope is needed to increase relevance to all cervical spine management.
- Revised guidelines should help improve the recognition of serious pathology.
- Should provide clear guidance on real risk and informed consent requirements, and.
- Be succinct, easy to read and accessible to all, within and outside the profession.

Background The Australian Physiotherapy Association 2006 VBI Guidelines are used by many of the member organisations of IFOMPT. These Guidelines are due for revision incorporating recent research findings, international guides, and member's recommendations.

Purpose To identify and consider Australian musculoskeletal physiotherapists' recommendations to inform revision of the 2006 VBI Guidelines.

Methods Focus groups were conducted in the five larger Australian state capitals by an independent qualitative researcher and a subject expert. Qualitative data were collected from 41 musculoskeletal physiotherapists who were purposefully recruited for their broad range of experience and qualifications. The five stage Framework Analysis approach was used to analyse and interpret data.

Results Participants recommended that the revised Guidelines have a new title reflecting a broader risk assessment and management approach, encompassing both musculoskeletal and relevant cardio-vascular risks and informed by contemporary research evidence and clinical experience. Participants requested a positively worded stepwise guide to clinical reasoning for all cervical spine manual treatment scenarios including the process of gaining and recording consent. Participants advised on individual components of the Guidelines needing to be revised or removed. The revised Guidelines, once approved, need to be disseminated in written and electronic formats to all clinicians. Training and education are required to ensure appropriate uptake within and beyond the profession.

Conclusions and implications

To ensure their clinical acceptance and utility, the Revised Guidelines need to reflect the current use and recommendations of musculoskeletal physiotherapists. Sound knowledge translation processes are then needed to ensure that the Guidelines are incorporated into practice.

12 A. WHIPLASH

CPR not valid

Musculoskeletal Science and Practice

Volume 39, February 2019, Pages 73-79

Agreement is very low between a clinical prediction rule and physiotherapist assessment for classifying the risk of poor recovery of individuals with acute whiplash injuryIJoanKelly^aCarrieRitchie^bMicheleSterling^{ab}<https://doi.org/10.1016/j.msksp.2018.11.003>Get rights and content**Highlights**

- Agreement between physiotherapist- and whiplash CPR-determined prognostic risk classification was very low.
- Physiotherapists were overly optimistic regarding patient outcomes.
- The whiplash CPR may aid physiotherapist prognostic judgements.
- Strategies to enhance use of the whiplash CPR and prognostic indicators are needed.

Background A prognostic clinical prediction rule (whiplash CPR) has been validated for use in individuals with acute whiplash associated disorders (WAD). The clinical utility of this tool is unknown.

Objectives To investigate: 1) the level of agreement between physiotherapist- and whiplash CPR-determined prognostic risk classification of people with acute WAD; 2) which clinical findings are used by physiotherapists to classify prognostic risk; and 3) whether physiotherapists plan to differ the number of treatment sessions provided based on prognostic risk classification.

Design Pragmatic, observational.

Method 38 adults with acute WAD were classified as low, medium, or high risk of poor recovery by their treating physiotherapist (n = 24) at the conclusion of the initial consultation. A weighted Cohen's kappa examined the agreement between physiotherapist estimated risk classification and the whiplash CPR. Physiotherapists' reasons for classification were provided and summarised descriptively. Kruskal-Wallis and post-hoc Dunn's tests compared projected number of treatment sessions between risk subgroups.

Results Physiotherapist agreement with the whiplash CPR occurred in 29% of cases (n = 11/38), which was less than what is expected by chance (K = -0.03; 95%CI -0.17 to 0.12). Physiotherapists most frequently considered range of movement (n = 23/38, 61%), a premorbid pain condition (n = 14/38, 37%), response to initial physiotherapy treatment (n = 12/38, 32%), and pain intensity (n = 12/38, 32%) when classifying prognostic risk. The projected number of treatment sessions was not different between risk groups using classifications provided by the physiotherapists ($\chi^2(2) = 2.69$, p = 0.26).

Conclusions

Physiotherapists should consider incorporating the whiplash CPR into current assessment processes to enhance accuracy in prognostic decision-making.

13 B. TMJ/ORAL**Oral trauma and malocclusion**

Dent Traumatol. 2018 Nov 30. doi: 10.1111/edt.12457.

Association of occlusal characteristics with the occurrence of dental trauma in preschool children: a case control study.

Primo-Miranda E¹, Homem MA², Souto DS¹, Stetler AD¹, Ramos-Jorge J², Ramos-Jorge ML¹, Marques LS¹.

BACKGROUND/AIMS:

Occlusal features may increase the risk of dental trauma. The aim of the present study was to evaluate the association of occlusal characteristics on the occurrence of dental trauma in preschool children.

MATERIALS AND METHODS:

A population-based case-control study was conducted with a representative sample of 200 children three to five years of age enrolled at private and public preschools in the city of Diamantina, Brazil. The case and control groups were matched for gender, age and type of preschool (public or private) at a ratio of 1:1 (100 cases and 100 controls). Independent variables of interest to the study (occlusal characteristics) and potential confounders (sociodemographic characteristics, sucking habits and lip coverage) were investigated. Intra-examiner and inter-examiner Kappa values were higher than 0.80 for all oral conditions evaluated. The SPSS 22.0 program was used to analyze the data. Descriptive and univariate analyses as well as simple and multiple logistic regression analyses were performed.

RESULTS:

The occlusal feature most strongly associated with trauma was anterior open bite (OR = 3.80; 95% CI: 1.42-10.16). Maxillary anterior crowding (OR = 2.14, 95% CI: 1.00-4.63) and overjet (OR = 1.12, 95% CI: 0.58-2.17) were associated with the occurrence of trauma independently of the confounding variables (sociodemographic characteristics, sucking habits and lip coverage), but these variables lost their significance when adjusted for other types of malocclusion. Anterior open bite remained strongly associated with dental trauma, regardless of confounding variables and other types of malocclusion.

CONCLUSION:

Anterior open bite was the main variable associated with dental trauma in the preschool children analyzed independently of the confounding variables and the presence of other malocclusions. This article is protected by copyright. All rights reserved.

Oral care reduces CV disease**Improved oral hygiene care attenuates the cardiovascular risk of oral health disease: a population-based study from Korea**

Shin-Young Park Sun-Hwa Kim Si-Hyuck Kang Chang-Hwan YoonHyo-Jung Lee Pil-Young Yun Tae-Jin Youn In-Ho Chae

European Heart Journal, ehy836, <https://doi.org/10.1093/eurheartj/ehy836>

Aims

Oral health problems such as periodontal disease, dental caries, and tooth loss have been suggested to have associations with cardiovascular disease. This study aimed to evaluate whether oral hygiene behaviour can alleviate cardiovascular risk associated with oral health status using a nationwide population-based cohort.

Methods and results

The data of 247 696 healthy adults aged 40 years or older who underwent an oral health screening programme and had no history of major cardiovascular events were extracted from the National Health Insurance System-National Health Screening Cohort. After a median follow-up of 9.5 years, 14 893 major cardiovascular events occurred including cardiac death, myocardial infarction, stroke, and heart failure. The risk of cardiovascular events was higher when a subject had periodontal disease, a higher number of dental caries, or more tooth loss. Performing one more tooth brushing a day was associated with a 9% significantly lower risk of cardiovascular events after multivariable adjustment. Regular dental visits (once a year or more) for professional cleaning were also shown to reduce cardiovascular risk by 14%. Improved oral hygiene behaviours were shown to attenuate the cardiovascular risk originating from periodontal disease, dental caries, and tooth loss.

Conclusion

Oral hygiene care such as frequent tooth brushing and regular dental visits for professional cleaning reduced the risk of future cardiovascular events in healthy adults. This study also suggests that improved oral hygiene behaviour may modify the association between oral health and cardiovascular diseases.

13 C. AIRWAYS/SWALLOWING/SPEECH**CV disease and sleep duration****Sleep duration and mortality in patients with coronary artery disease**

American Journal of Cardiology — Kim JH, et al. | December 20, 2018

Whether both short and long sleep duration are associated with higher mortality in coronary artery disease (CAD), was determined in 2,846 patients enrolled in the Emory Cardiovascular Biobank (mean age 64 years, 38% female, 23% Black, and 82% with obstructive CAD, defined by positive coronary angiography).

These subjects were examined with respect to sleep durations, all-cause and cardiovascular mortality, using multivariate Cox proportional hazard models. For 39%, 26% and 35% of the cohort, sleep durations of <6.5 hours (short), ≥ 6.5 to <7.5 hours (normal), and ≥ 7.5 hours (long), respectively, were reported, with mortality rates being 15%, 11%, and 17%, respectively, as observed during follow-up (median 2.8 years). This is the first investigation to extend the observations of sleep duration and mortality from population-based studies to patients with documented cardiac disease.

The independent association of both short and long sleep duration with higher all-cause mortality, and independent association of short sleep with higher cardiovascular mortality, was observed in patients with frank CAD.

OSA and Cardiac problems

Heart Rhythm. 2018 Dec 18. pii: S1547-5271(18)31283-9. doi: 10.1016/j.hrthm.2018.12.017.

Obstructive sleep apnea is associated with non-sustained ventricular tachycardia in patients with hypertrophic obstructive cardiomyopathy.

Wang S¹, Cui H², Song C³, Zhu C¹, Wu R¹, Meng L¹, Yu Q¹, Huang X³, Wang S⁴.

BACKGROUND:

Hypertrophic cardiomyopathy (HCM) is associated with arrhythmias and cardiovascular death. Obstructive sleep apnea (OSA) is highly prevalent and independently associated with atrial fibrillation among patients with HCM.

OBJECTIVE:

To determine the relationship between non-sustained ventricular tachycardia (NSVT) and OSA in hypertrophic obstructive cardiomyopathy (HOCM).

METHODS:

One hundred thirty consecutive patients with a confirmed diagnosis of HOCM in Fuwai Hospital between September 2017 and May 2018 were included. Polysomnography and Holter electrocardiography were performed in all patients.

RESULTS:

Of 130 patients, 72 (55.4%) were diagnosed with OSA, including 38 with mild, 21 with moderate, and 13 with severe OSA, and 27 (20.8%) patients had NSVT. The prevalence of NSVT increased with the severity of OSA (none, mild, moderate, and severe: 12.1%, 15.8%, 33.3%, and 53.8%, respectively; p for trend < 0.001). Compared to patients without NSVT, the apnea-hypopnea index (AHI) was significantly higher in patients with NSVT among the different OSA groups (mild, moderate, and severe: 11.9 [10.9-13.4] versus [vs.] 6.7 [5.8-8.0], $p=0.001$; 24.3 [22.2-28.4] vs. 18.5 [16.7-22.12], $p=0.01$; 54.3 [41.4-61.9] vs. 33.9 [31.0-39.2], $p=0.008$). In multivariate logistic analysis, family history of HCM or sudden cardiac death (SCD) (odds ratio [OR]=6.11, 95% confidence interval [CI]=1.72-21.73, $p=0.005$) and AHI (OR=1.07, 95% CI=1.02-1.12, $p=0.001$) were the only factors associated with NSVT after adjustment for age, sex, and body mass index.

CONCLUSION:

The presence and severity of OSA in patients with HOCM is independently associated with NSVT, which is a risk factor for SCD and cardiovascular death in this population.

Youth bruxism and OSA

Sleep Breath. 2018 Dec 19. doi: 10.1007/s11325-018-1771-y. [Epub ahead of print]

Poor sleep quality and prevalence of probable sleep bruxism in primary and mixed dentitions: a cross-sectional study.

Massignan C1,2, de Alencar NA3, Soares JP3, Santana CM3, Serra-Negra J4, Bolan M3, Cardoso M3.

PURPOSE:

To investigate the prevalence of probable sleep bruxism (SB) in the primary and mixed dentitions using non-instrumental approach and evaluate whether sleep quality is associate with probable SB in different age ranges.

METHODS:

School-based cross-sectional study with children aged 2-5 (primary dentition, n = 372) and 8-10 years old (mixed dentition, n = 563) enrolled in public schools at Florianopolis and their parents. The sleep characteristics, socioeconomic status, and presence of probable SB were assessed using questionnaires. Seven trained examiners ($Kappa > 0.7$) assessed tooth wear. Children were selected following a stratified sample (2-5); and a system of the proportionality, first the schools of the sanitary districts and after the classrooms (8-10). Unadjusted and adjusted Poisson regression was performed with probable SB as a dependent variable. Independent variables were as follows: family income, parent schooling, drooling, tooth wear, and sleep quality. The independent variables presenting p value ≤ 0.20 were included in the adjusted model.

RESULTS:

The prevalence of probable SB was 22.3% in primary and 32.7% in mixed dentition. Probable SB was significantly associated with poor sleep quality ($p < 0.001$) in mixed dentition (PR 1.80; 95% CI 1.34-2.44) adjusting for age and drooling. In the primary dentition, the adjusted regression did not show association between analyzed characteristic and probable SB. Sex, socioeconomic, head of the household educational status, drooling, and tooth wear were not associated with probable SB in both dentitions.

CONCLUSION:

Prevalence of probable SB is higher in mixed than in primary dentition and poor sleep quality is associated with probable SB in children aged 8-10 years.

Oral Hygiene

Improved oral hygiene care attenuates the cardiovascular risk of oral health disease: a population-based study from Korea

Shin-Young Park Sun-Hwa Kim Si-Hyuck Kang Chang-Hwan YoonHyo-Jung Lee Pil-Young Yun Tae-Jin Youn In-Ho Chae

European Heart Journal, ehy836, <https://doi.org/10.1093/eurheartj/ehy836>

Aims

Oral health problems such as periodontal disease, dental caries, and tooth loss have been suggested to have associations with cardiovascular disease. This study aimed to evaluate whether oral hygiene behaviour can alleviate cardiovascular risk associated with oral health status using a nationwide population-based cohort.

Methods and results

The data of 247 696 healthy adults aged 40 years or older who underwent an oral health screening programme and had no history of major cardiovascular events were extracted from the National Health Insurance System-National Health Screening Cohort. After a median follow-up of 9.5 years, 14 893 major cardiovascular events occurred including cardiac death, myocardial infarction, stroke, and heart failure. The risk of cardiovascular events was higher when a subject had periodontal disease, a higher number of dental caries, or more tooth loss. Performing one more tooth brushing a day was associated with a 9% significantly lower risk of cardiovascular events after multivariable adjustment. Regular dental visits (once a year or more) for professional cleaning were also shown to reduce cardiovascular risk by 14%. Improved oral hygiene behaviours were shown to attenuate the cardiovascular risk originating from periodontal disease, dental caries, and tooth loss.

Conclusion

Oral hygiene care such as frequent tooth brushing and regular dental visits for professional cleaning reduced the risk of future cardiovascular events in healthy adults. This study also suggests that improved oral hygiene behaviour may modify the association between oral health and cardiovascular diseases.

14. HEADACHES

Alcohol HA's

Alcoholic beverages as trigger factor and the effect on alcohol consumption behavior in patients with migraine

G. L. J. Onderwater W. P. J. van Oosterhout G. G. Schoonman M. D. Ferrari G. M. Terwindt

<https://doi.org/10.1111/ene.13861>

Background and purpose

Alcoholic beverages are frequently reported migraine triggers. We aimed to assess self-reported alcohol consumption as a migraine attack trigger and to investigate the effect on alcohol consumption behavior in a large migraine cohort.

Methods

We conducted a cross-sectional, web-based, questionnaire study among 2197 patients with migraine from the well-defined Leiden University MIgraine Neuro-Analysis (LUMINA) study population. We assessed alcoholic beverage consumption and self-reported trigger potential, reasons behind alcohol abstinence and time between alcohol consumption and migraine attack onset.

Results

Alcoholic beverages were reported as a trigger by 35.6% of participants with migraine. In addition, over 25% of patients with migraine who had stopped consuming or never consumed alcoholic beverages did so because of presumed trigger effects. Wine, especially red wine (77.8% of participants), was recognized as the most common trigger among the alcoholic beverages. However, red wine consistently led to an attack in only 8.8% of participants. Time of onset was rapid (<3 h) in one-third of patients and almost 90% had an onset <10 h independent of beverage type.

Conclusions

Alcoholic beverages, especially red wine, are recognized as a migraine trigger factor by patients with migraine and have a substantial effect on alcohol consumption behavior. Rapid onset of provoked migraine attacks in contrast to what is known about hangover headache might point to a different mechanism. The low consistency of provocation suggests that alcoholic beverages acting as a singular trigger is insufficient and may depend on a fluctuating trigger threshold.

16. CONCUSSIONS

VO changes in rugby players

Musculoskeletal Science and Practice Volume 39, February 2019, Pages 144-149

Vestibulo-ocular dysfunction in adolescent rugby union players with and without a history of concussion

Author links open overlay panel Felix T. Leung^a Ann Rahmann^b M. Dilani Mendis^{ac} Melinda M. Franettovich Smith^d Christine Searay^b Nancy Low Choy^b Julie A. Hides^{ae}

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<https://doi.org/10.1016/j.msksp.2018.12.007> Get rights and content

Highlights

- Abnormal vestibular and oculomotor function is common in adolescent rugby players.
- 33% prevalence of vestibulo-ocular dysfunction in adolescent rugby players.
- Deficits in vestibulo-ocular function present irrespective of history of concussion.
- Pre-injury function needs to be established to interpret post-concussion findings.

Objectives Sport-related concussions are common in adolescent contact sports. Vestibulo-ocular dysfunction has been reported in athletes post-concussion. There is a lack of research on vestibulo-ocular function in sporting adolescents, and the influence of previous concussions on the vestibular system in this population. The aim of this study was to investigate vestibulo-ocular function in a cohort of adolescent rugby players with and without a history of concussion during pre-season assessment.

Design Cross-sectional cohort.

Methods 213 male adolescent (13–18 years old) rugby players were recruited from six schools in Queensland, Australia. Vestibulo-ocular assessments were conducted during the preseason and included clinical assessment of oculomotor function and the vestibulo-ocular reflex (VOR) using the clinical and video-Head Impulse Test (HIT). Players were allocated into two groups: no history of concussion in the last 12 months ($n = 165$); and concussion in the last 12 months ($n = 48$).

Results There were no between group differences in vestibulo-ocular function for players with and without a history of concussion ($p = 0.65$). However, vestibulo-ocular dysfunction was reported in 69 (32.7%) of the players tested, who had either abnormal oculomotor control or VOR function.

Conclusions The high prevalence of vestibulo-ocular dysfunction in adolescent rugby players suggests that positive clinical findings post-concussion need to be interpreted carefully in the absence of baseline or pre-concussion assessments.

Effect of sub concussion impacts on the eyes

JAMA Ophthalmol. 2018 Dec 20. doi: 10.1001/jamaophthalmol.2018.6193.

Oculomotor Response to Cumulative Subconcussive Head Impacts in US High School Football Players: A Pilot Longitudinal Study.

Zonner SW¹, Ejima K², Fulgar CC³, Charleston CN⁴, Huibregtse ME⁵, Bevilacqua ZW⁵, Kawata K^{5,6}.

IMPORTANCE:

Repetitive subconcussive head impacts in sports have emerged as a complex public health issue. Most of these head impacts remain asymptomatic yet have the potential to cause insidious neurological deficit if sustained repetitively. Near point of convergence (NPC) values have shown to reflect subclinical neuronal damage; however, the longitudinal pattern of NPC changes in association with subconcussive head impacts remains unclear.

OBJECTIVES:

To examine the NPC response to recurring subconcussive head impacts in a single high school football season through a series of repeated measurements.

DESIGN, SETTING, AND PARTICIPANTS:

This prospective case-series study of US varsity high school football players included baseline measurements of NPC, measurements at pregame and postgame points from 6 in-season games, and postseason follow-up measurements (a total of 14 points). An accelerometer-embedded mouthguard measured head impact frequency and magnitude from all practices and games. During the 6 games, players wore chest-strap heart rate monitors to record heart rate and estimate their excess postexercise oxygen consumption, accounting for possible physical exertion effects on NPC values.

EXPOSURES:

Players participated in practices and games with no restriction.

MAIN OUTCOMES AND MEASURES:

Near point of convergence.

RESULTS:

The 12 included players were all boys, with a mean (SD) age of 16.4 (0.5) years. A total of 8009 head impacts, 177 907 g of peak linear acceleration, and 16 123 371 rad/s² of peak rotational acceleration were recorded from the players in a single football season. There was a significant increase in NPC over time until the middle of the season (mean [SD] NPC: baseline, 5.25 [1.49] cm; pregame 3, 6.42 [1.93] cm; P = .01), which was significantly associated with subconcussive head impact frequency and magnitude (0.02 cm per 100 g of peak linear acceleration [SE, 0.0108; 95% CI, 0.0436-0.004]; P = .01; 0.023 cm per 10 000 rad/s² of peak rotational acceleration [SE, 0.009; 95% CI, 0.041-0.0105]; P = .02). However, NPC values began to normalize toward baseline level from midseason (mean [SD] NPC: baseline, 5.25 [1.49] cm; pregame 6, 5.75 [2.23] cm; P = .32), as supported by a significant quadratic trend (β [SE], -0.002 [0.001] cm/d; P = .003), while participants continued to incur subconcussive head impacts.

CONCLUSIONS AND RELEVANCE:

This longitudinal case series study suggests that NPC can be perturbed over the long term by subconcussive head impacts but may normalize over time. The oculomotor system may have an adaptational capacity to subclinical head impacts, yet the mechanism for such remains an open question and warrants further investigation.

19. GLENOHUMERAL/SHOULDER

Chronic shoulder pain and altered status

Musculoskeletal Science and Practice
Volume 39, February 2019, Pages 32-38
Original article

People with musculoskeletal shoulder pain demonstrate no signs of altered pain processing

Melina N.Haik^a KerrieEvans^{bc} AshleySmith^b LuisHenríquez^d LeanneBisset^b

<https://doi.org/10.1016/j.msksp.2018.11.008> Get rights and content

Highlights

- No impairment in sensory function in people with musculoskeletal shoulder pain.
- Central sensitisation may not characterise musculoskeletal shoulder pain.
- Psychological outcomes are not related to sensory function in this population.

Background Central sensitisation may contribute to persistent musculoskeletal shoulder pain. Few studies have provided a comprehensive sensory and psychosocial evaluation of this population.

Objective To comprehensively assess whether sensory function and psychosocial aspects are impaired in people with shoulder pain and whether age, gender and clinical outcomes are related to impaired sensory function.

Study design Observational case-control study.

Methods Twenty-three participants with musculoskeletal shoulder pain and 23 age- and gender-matched healthy participants were included. Static (pressure and thermal pain thresholds) and dynamic (temporal summation) quantitative sensory testing was performed bilaterally at the shoulder and remote tibialis anterior muscle. Conditioned pain modulation was measured at the affected/matched shoulder. Shoulder function (SPADI), depression, anxiety and stress (DASS-21) and health-related quality of life (EQ-5D-5L) were also measured. Comparisons were performed between body regions and groups. Age and gender were included as factors in analyses. Clinical outcomes were tested for correlation with sensory measures.

Results

Shoulder pain group had higher local pressure pain threshold (i.e., hypoalgesia; $p = 0.03$; $Z = 0-5.04$), higher SPADI score ($p < 0.01$; $Z = -5.76$) and higher EQ-5D-5L ($p < 0.01$; $Z = 5.23$) compared to the control group. There was no difference between groups for thermal pain sensitivity, dynamic sensory testing or psychological measures.

Conclusion

People with shoulder pain demonstrated mechanical hypoalgesia, increased upper limb disability and poorer quality of life compared with healthy controls. Central sensitisation seems not be a characteristic of musculoskeletal shoulder pain although it could be present in a subgroup of patients.

27. HIP**Testing to versions of the hip**

Musculoskeletal Science and Practice
Volume 39, February 2019, Pages 115-122

Original article

Clinical tests to determine femoral version category in people with chronic hip joint pain and asymptomatic control

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Highlights

- Hip rotation range of motion and Craig's test may be used to screen for femoral version abnormalities.
- Femoral retroversion is associated with limited hip internal rotation.
- Excessive femoral anteversion is associated with limited hip external rotation.
- 20° difference in hip internal and external rotation motion may suggest abnormal femoral version.

Study design Controlled laboratory cross-sectional.

Objectives To investigate the relationship between femoral version (FV), measured by MRI(FVMRI), Craig's test and hip rotation range of motion (ROM). To determine rotation ROM values associated with FVMRI categories: excessive anteversion, normal version and retroversion.

Background Abnormal FV values are associated with hip disorders, such as osteoarthritis, structural instability, acetabular labral tears and femoroacetabular impingement. Clinical assessment of FV may allow clinician to identify the effect of bony abnormalities on hip rotation ROM to guide clinical decisions.

Methods Thirty-eight participants with chronic hip joint pain (CHJP) and 38 matched controls participated. MRI was used to determine FVMRI. A digital inclinometer was used to assess Craig's test, hip internal rotation (IR) and external rotation (ER) with hip flexed to 90° (90°), and hip IR/ER with hip in neutral flexion/extension (0°). ROM differences (ROMdif) were determined by subtracting ER from IR. Pearson correlation coefficients were used to assess the relationship between FVMRI and clinical variables. One-way analysis of variance (ANOVA) was used to compare rotation ROM among FVMRI categories.

Results There were no differences between CHJP and control groups in demographics, FVMRI, Craig's test or ROM. ROMdif0° showed the highest correlation ($r = 0.63$) with FVMRI, then IR90° ($r = 0.61$) and Craig's test ($r = 0.61$). Differences were noted among FVMRI categories for rotation ROM except hip ER90°.

Conclusion Hip rotation ROM and Craig's test may be used for screening when imaging is not indicated. A 20° difference between hip IR and ER ROM would be suggestive of abnormal FV.

32 A. KNEE/ACL**Type of drilling**

January 2019 Volume 35, Issue 1, Pages 182–189

Anteromedial Portal Drilling Yielded Better Survivorship of Anterior Cruciate Ligament Reconstructions When Comparing Recent Versus Early Surgeries With This Technique

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DOI: <https://doi.org/10.1016/j.arthro.2018.08.030>

Purpose

To compare anteromedial (AM) and transtibial (TT) femoral drilling hole techniques in primary anterior cruciate ligament reconstruction, using the Danish Knee Ligament Reconstruction Register, comparing revision rates and clinical outcomes from 2 time periods, 2007 to 2010 and 2012 to 2015.

Methods

A total of 8,386 primary anterior cruciate ligament reconstructions were registered between January 2007 to December 2010 and 8,818 in the period January 2012 to December 2015. Revision ACL was the primary endpoint. Secondary endpoints were the objective and subjective clinical outcomes. Crude and adjusted relative risks (RRs) with 95% confidence interval (CIs) were calculated.

Results

The adjusted RR for revision surgery in the AM (2007-10) group compared with the TT (2007-10) group was 1.45 (95% CI, 1.17-1.78; $P < .05$), but when comparing the AM (2012-15) group with TT (2012-15) group, the RR was 0.99 (95% CI, 0.68-1.45; $P = .96$). One-year postoperative objective stability testing showed an RR = 1.38 (95% CI, 1.19-1.60; $P < .01$) for rotational stability and an RR = 1.37 (95% CI, 0.99-1.89; $P < .01$) for sagittal stability when comparing AM (2007-10) to TT (2007-10). No significant difference in objective stability was found in the more recent period. Lastly, comparing the subjective scores, the AM (2012-15) had a significantly higher Tegner score 1 year postoperatively compared with the TT-group (2012-15).

Conclusions

This study found an increased RR of revision anterior cruciate ligament and rotational and sagittal instability 1 year postoperatively for the AM technique in the period from 2007 to 2010. However, there was no significant difference in revision surgery and objective measures between the techniques from 2012 to 2015. Nevertheless, a higher activity level was found in the AM group. The results could indicate that the results found in the period 2007 to 2010 may have been caused by a learning curve when introducing a new and more complex procedure (AM).

Level of Evidence Level III, retrospective comparative trial.

37. OSTEOARTHRITIS/KNEE**PRP better than Hyaluronic Acid****January 2019** Volume 35, Issue 1, Pages 106–117**Intra-articular Injection of Platelet-Rich Plasma Is Superior to Hyaluronic Acid or Saline Solution in the Treatment of Mild to Moderate Knee Osteoarthritis: A Randomized, Double-Blind, Triple-Parallel, Placebo-Controlled Clinical Trial**

Kuan-Yu Lin, M.D. Chia-Chi Yang, Ph.D. Chien-Jen Hsu, M.D. Ming-Long Yeh, Ph.D.

Jenn-Huei Renn, M.D., Ph.D

DOI: <https://doi.org/10.1016/j.arthro.2018.06.035>**Purpose**

To prospectively compare the efficacy of intra-articular injections of platelet-rich plasma (PRP) and hyaluronic acid (HA) with a sham control group (normal saline solution [NS]) for knee osteoarthritis in a randomized, dose-controlled, placebo-controlled, double-blind, triple-parallel clinical trial.

Methods

A total of 87 osteoarthritic knees (53 patients) were randomly assigned to 1 of 3 groups receiving 3 weekly injections of either leukocyte-poor PRP (31 knees), HA (29 knees), or NS (27 knees). The Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) score and International Knee Documentation Committee (IKDC) subjective score were collected at baseline and at 1, 2, 6, and 12 months after treatment. Data were analyzed using generalized estimating equations.

Results

All 3 groups showed statistically significant improvements in both outcome measures at 1 month; however, only the PRP group sustained the significant improvement in both the WOMAC score (63.71 ± 20.67 , increased by 21%) and IKDC score (49.93 ± 17.74 , increased by 40%) at 12 months. For the intergroup comparison, except for the first month, there was a statistically significant difference between the PRP and NS groups in both scores throughout the study duration (regression coefficients of 8.72 [$P = .0015$], 7.94 [$P = .0155$], and 11.92 [$P = .0014$] at 2, 6, and 12 months, respectively, for WOMAC score, and 9.1 [$P = .0001$], 10.28 [$P = .0002$], and 13.97 [$P < .0001$], respectively, for IKDC score). There was no significant difference in both functional outcomes between the HA and NS groups at any time point. Only the PRP group reached the minimal clinically important difference in the WOMAC score at every evaluation (15%, 21%, 18%, and 21% at 1, 2, 6, and 12 months, respectively) and the minimal clinically important difference in the IKDC score at 6 months (improvement of 11.6).

Conclusions

Intra-articular injections of leukocyte-poor PRP can provide clinically significant functional improvement for at least 1 year in patients with mild to moderate osteoarthritis of the knee.

Level of Evidence

Level I, randomized controlled single-center trial.

52. EXERCISE**Physical activity reduces depression****Preventive Medicine**

Volume 118, January 2019, Pages 38-43

Prospective associations between physical activity and clinician diagnosed major depressive disorder in adults: A 13-year cohort studyAndreas Lundin^aDavy Vancampfort^{bc}Brendon Stubbs^{de}Felipe Schuch^{fg}Rino Bellocco^{hi}Ylva Trolle Lagerros^{jk}<https://doi.org/10.1016/j.ypmed.2018.10.009> Get rights and content**Highlights**

- An inverse association was seen between habitual PA (including walking) and depression.
- Exceeding the duration recommended for general health reduced the hazards of MDD by 29%.
- Neither age nor gender moderated these associations.

Abstract

Regular physical activity (PA) appears to protect against the emergence of depression, but prospective studies linked to clinician diagnoses of major depressive disorder (MDD) remain scarce. It is also unclear whether PA levels recommended for general health are prospectively related to depression onset. We explored these relationships in a cohort of adults followed over 13 years. In total, 43,863 Swedish adults were surveyed in 1997 and responses linked to clinician-diagnosed MDD obtained from specialist medical registers until 2010. Weekly durations of habitual moderate (including walking) and vigorous PA were self-reported. Relationships between total durations of PA, 0–149 (‘below’), 150–299 (‘achieve’), and ≥ 300 min (‘exceed’) with incident MDD were explored using survival analysis with Cox proportional hazards regression. Models were adjusted for relevant covariates. Those with indications of depression at baseline were removed from the primary analyses. Of 25,520 participants with complete data (mean age = 49 years, SD = 16, 65% female), 76% met the recommended weekly duration of PA (≥ 150 min), and 38% exceeded this duration (≥ 300 min). During 13-years follow-up 549 MDD cases (1.5%) were identified (incidence rate = 111 cases per 100,000 person-years). Compared to participants who were below, those who exceeded the recommended weekly duration (≥ 300 min/week) had 29% reduced risk of depression onset (HR 0.71, 95% CI = 0.53–0.96).

A non-significant inverse association was observed among those who achieved the minimum duration of 150-min/week (HR 0.86, 95% CI = 0.64–1.14). Habitual PA levels that exceed the duration recommended for general health may reduce the risk of clinician-diagnosed major depression in adults.

59. PAIN

Opioids not that much more helpful

Opioids for Chronic Noncancer Pain: A Systematic Review and Meta-analysis

Jason W. Busse, DC, PhD^{1,2,3,4}; Li Wang, PhD^{1,2,5}; Mostafa Kamaleldin, MB BCh⁶; et al Samantha Craigie, MSc³; John J. Riva, DC, MSc^{3,7}; Luis Montoya, DDS, MSc⁸;
JAMA. 2018;320(23):2448-2460. doi:10.1001/jama.2018.18472

Key Points

Question Is the use of opioids to treat chronic noncancer pain associated with greater benefits or harms compared with placebo and alternative analgesics? **Findings** In this meta-analysis that included 96 randomized clinical trials and 26 169 patients with chronic noncancer pain, the use of opioids compared with placebo was associated with significantly less pain (−0.69 cm on a 10-cm scale) and significantly improved physical functioning (2.04 of 100 points), but the magnitude of the association was small. Opioid use was significantly associated with increased risk of vomiting. **Meaning** Opioids may provide benefit for chronic noncancer pain, but the magnitude is likely to be small.

Importance Harms and benefits of opioids for chronic noncancer pain remain unclear.

Objective To systematically review randomized clinical trials (RCTs) of opioids for chronic noncancer pain.

Data Sources and Study Selection The databases of CENTRAL, CINAHL, EMBASE, MEDLINE, AMED, and PsycINFO were searched from inception to April 2018 for RCTs of opioids for chronic noncancer pain vs any nonopioid control.

Data Extraction and Synthesis Paired reviewers independently extracted data. The analyses used random-effects models and the Grading of Recommendations Assessment, Development and Evaluation to rate the quality of the evidence.

Main Outcomes and Measures The primary outcomes were pain intensity (score range, 0-10 cm on a visual analog scale for pain; lower is better and the minimally important difference [MID] is 1 cm), physical functioning (score range, 0-100 points on the 36-item Short Form physical component score [SF-36 PCS]; higher is better and the MID is 5 points), and incidence of vomiting.

Results Ninety-six RCTs including 26 169 participants (61% female; median age, 58 years [interquartile range, 51-61 years]) were included. Of the included studies, there were 25 trials of neuropathic pain, 32 trials of nociceptive pain, 33 trials of central sensitization (pain present in the absence of tissue damage), and 6 trials of mixed types of pain. Compared with placebo, opioid use was associated with reduced pain (weighted mean difference [WMD], −0.69 cm [95% CI, −0.82 to −0.56 cm] on a 10-cm visual analog scale for pain; modeled risk difference for achieving the MID, 11.9% [95% CI, 9.7% to 14.1%]), improved physical functioning (WMD, 2.04 points [95% CI, 1.41 to 2.68 points] on the 100-point SF-36 PCS; modeled risk difference for achieving the MID, 8.5% [95% CI, 5.9% to 11.2%]), and increased vomiting (5.9% with opioids vs 2.3% with placebo for trials that excluded patients with adverse events during a run-in period). Low- to moderate-quality evidence suggested similar associations of opioids with improvements in pain and physical functioning compared with nonsteroidal anti-inflammatory drugs (pain: WMD, −0.60 cm [95% CI, −1.54 to 0.34 cm]; physical functioning: WMD, −0.90 points [95% CI, −2.69 to 0.89 points]), tricyclic antidepressants (pain: WMD, −0.13 cm [95% CI, −0.99 to 0.74 cm]; physical functioning: WMD, −5.31 points [95% CI, −13.77 to 3.14 points]), and anticonvulsants (pain: WMD, −0.90 cm [95% CI, −1.65 to −0.14 cm]; physical functioning: WMD, 0.45 points [95% CI, −5.77 to 6.66 points]).

Conclusions and Relevance In this meta-analysis of RCTs of patients with chronic noncancer pain, evidence from high-quality studies showed that opioid use was associated with statistically significant but small improvements in pain and physical functioning, and increased risk of vomiting compared with placebo. Comparisons of opioids with nonopioid alternatives suggested that the benefit for pain and functioning may be similar, although the evidence was from studies of only low to moderate quality.

65. NEUROLOGICAL CONDITIONS**Young stroke survivors**

J Am Heart Assoc. 2019 Jan 8;8(1):e010370. doi: 10.1161/JAHA.118.010370.

Young Stroke Survivors With No Early Recurrence at High Long-Term Risk of Adverse Outcomes.

Edwards JD^{1,2,3}, Kapral MK^{3,4,5}, Lindsay MP⁶, Fang J³, Swartz RH^{7,8}.

Background Approximately 8% to 21% of strokes affect adults aged <45 years. Although early stroke recurrence conveys the largest risk, long-term risks for young survivors with no early complications are unclear.

Methods and Results Longitudinal matched case-control study (2003-2013). Consecutive patients with ischemic stroke or transient ischemic attack (young, ≤ 44 years) discharged from emergency or regional stroke centers in Ontario, Canada, with no death, recurrent stroke/transient ischemic attack, myocardial infarction, all-cause hospitalization, or admission to a long-term or continuing care facility (≤ 90 days) were matched 10:1 to general population controls on age (± 1 year), sex, income, geography, and case date (± 50 days). The primary outcome was a composite of death, stroke, myocardial infarction, and long-term or continuing care facility admission at 1, 3, and 5 years. Absolute event rates for young stroke/transient ischemic attack patients were lower than for older patients at 1 (2.2% versus 9.9%), 3 (4.7% versus 24.6%), and 5 (7.1% versus 37.2%) years. However, piecewise constant hazard modeling revealed that, even after adjustment for vascular comorbidities, young patients showed a 7-fold increased hazard of the composite outcome compared with young controls at 1 year (hazard ratio, 7.3; 95% CI, 4.0-13.6). Adjusted 5-year piecewise hazard also remained $>5\times$ that of young controls (hazard ratio, 5.2; 95% CI, 2.8-9.4), compared with a 30% increase at 5 years for older patients (hazard ratio, 1.3; 95% CI, 1.3-1.4).

Conclusions Young stable stroke/transient ischemic attack survivors show a higher long-term hazard of adverse outcomes compared with matched controls than older patients. Findings support the need for long-term follow-up and aggressive risk reduction in young survivors and suggest secondary prevention guidelines for these patients are required.

Risk of stroke

Global, regional, and country-specific lifetime risks of stroke, 1990 and 2016

New England Journal of Medicine | December 21, 2018

Researchers used the results of the Global Burden of Disease (GBD) Study 2016, which estimated major disease burden from 1990 through 2016, to determine the lifetime risk of stroke at the regional, country, and global level. Outcomes suggest that both men and women have approximately 25% global lifetime risk of stroke from the age of 25 years onward in 2016. The lifetime risk of stroke varied geographically, with the highest risks in East Asia, Central Europe, and Eastern Europe.

Methods

- Researchers calculated the cumulative lifetime risks of first stroke, ischemic stroke, or hemorrhagic stroke among adults 25 years of age or older using the Global Burden of Disease (GBD) Study 2016 estimates of stroke incidence and the competing risks of death from any cause other than stroke.
- Comparison of the estimates of the lifetime risks in the years 1990 and 2016 was done.
- Categorization of countries into quintiles of the sociodemographic index (SDI) used in the GBD Study was done, and the risks were compared across quintiles.
- Using point estimates and uncertainty intervals representing the 2.5th and 97.5th percentiles around the estimate, they performed comparisons.

Results

- From the age of 25 years onward, the estimated global lifetime risk of stroke was 24.9% (95% uncertainty interval, 23.5 to 26.2); men displayed the risk of 24.7% (95% uncertainty interval, 23.3 to 26.0), and women displayed the risk of 25.1% (95% uncertainty interval, 23.7 to 26.5).
- Researchers noted ischemic stroke risk of 18.3%, and the hemorrhagic stroke risk of 8.2%.
- The estimated lifetime risks of stroke in high-SDI, high-middle-SDI, and low-SDI countries were 23.5%, 31.1% (highest risk), and 13.2% (lowest risk), respectively; the 95% uncertainty intervals did not overlap between these categories.
- According to GBD region, the highest estimated lifetime risks of stroke were noted in East Asia (38.8%), Central Europe (31.7%), and Eastern Europe (31.6%), and the lowest risk was in eastern sub-Saharan Africa (11.8%).
- They noted an increase in the mean global lifetime risk of stroke from 22.8% in 1990 to 24.9% in 2016, a relative increase of 8.9% (95% uncertainty interval, 6.2 to 11.5); this calculation was done considering the competing risk of death from any cause other than stroke.

Food allergies and MS

Food allergies are associated with increased disease activity in multiple sclerosis

Rami Fakih, Camilo Diaz-Cruz, Alicia S Chua, Cindy Gonzalez, Brian C Healy, Neda Sattarnezhad, Bonnie I Glanz, Howard L Weiner, Tanuja Chitnis

Abstract

Objective The association between allergy and multiple sclerosis (MS) is still unclear. In our study, we assessed the association between a self-reported history of allergic conditions with MS clinical and MRI disease activity.

Methods A subset of 1349 patients enrolled in the Comprehensive Longitudinal Investigation of Multiple Sclerosis at the Brigham and Women's Hospital (CLIMB) study completed a self-administered questionnaire on environmental, food and drug allergies. Patients were distributed among four allergy groups: (1) environmental, (2) food, (3) drug, (4) no known allergies (NKA). Clinical (number of attacks, expanded disability status scale (EDSS), MS severity score (MSSS)) and radiological variables (presence of gadolinium-enhancing lesions and lesion count), and their associations with the different allergy groups or those with NKA, were assessed.

Results The food allergy group had a 1.38 times higher rate for cumulative number of attacks compared with the NKA group ($P=0.0062$); this difference remained significant in the adjusted analysis (relapse rate ratio 1.27, $P=0.0305$). The food allergy group showed more than twice the likelihood (OR 2.53, $P=0.0096$) of having gadolinium-enhancing lesions on MRI. The environmental and drug allergy groups did not show significant differences when compared with the NKA group. The EDSS and MSSS were not affected by any type of allergy.

Conclusions MS patients with food allergy had more relapses and a higher likelihood of gadolinium-enhancing lesions compared with patients with no known allergy. Future prospective studies are needed to confirm our findings and investigate underlying biological mechanisms, which may unveil new therapeutic and preventative strategies for MS.