

2. LBP

Increased sway in LBP patients

Trunk sway response to consecutive slip perturbations between subjects with and without recurrent low back pain

Paul S. Sung Pamela Danial

DOI: <https://doi.org/10.1016/j.msksp.2017.12.005>

Highlights

- Trunk extension increased in the LBP group only at the level 1 slip perturbation.
- Trunk sway reaction time was not different between groups.
- The trunk sway velocity was not sensitive enough to demonstrate a group difference.
- The LBP group adjusted trunk sway angles with higher levels of perturbation.
- This perturbation reaction might be applied for rehabilitation strategies.

Abstract

Background

Trunk sway responses following perturbations are critical to develop adequate prevention strategies. It is unclear how postural responses with a handheld task can validly be transferred to treadmill-induced slip perturbations in subjects with recurrent low back pain (LBP).

Objective

To compare trunk sway angle, velocity, and reaction time following treadmill-induced perturbations while subjects with and without LBP held a tray.

Design

Cross-sectional study.

Methods

There were 30 subjects with LBP and 50 control subjects who participated in the study. Each participant stood on the treadmill while he/she held a tray to produce a functional task. Three levels of consecutive slips were introduced based on the specific duration, velocity, and displacement.

Results

The trunk extension angle was significantly different ($F = 4.22$, $p = 0.04$) and demonstrated a significant interaction with groups and levels of perturbation ($F = 6.83$, $p = 0.01$). However, the reaction time was not significantly different based on the levels of perturbation ($F = 0.43$, $p = 0.51$). The LBP group increased trunk extension only at level 1 slip perturbation ($t = 2.86$, $p = 0.005$).

Conclusion

The increased trunk extension following the first perturbation indicated a delay in adjusting trunk stability in the LBP group. However, there was no group difference with higher magnitudes of perturbations. These results indicated that the LBP group was able to minimize trunk sway with higher perturbations following the first perturbation.

Patients value MRI's

Investigations for radiculopathy: The patient perspective. A qualitative, interpretative inquiry

Clare Ryan Lisa C. Roberts

DOI: <https://doi.org/10.1016/j.msksp.2017.11.005>

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Highlights

- Patients highly valued the informative role of investigations (MRI).
- Access to investigations was reported to be difficult and protracted.
- Relevant findings enabled validation, empowerment and decisive decision-making.
- Non-concordant findings were difficult to understand, or move forward from.
- Important implications have been identified for policy and clinical practice.

Background

Clinical guidelines recommend that investigations, such as magnetic resonance imaging, are offered only when likely to change management. Meanwhile, the optimal process of diagnosing radiculopathy remains uncertain and, in clinical practice, differences of opinion can occur between patient and clinician regarding the perceived importance of investigations.

Objectives To explore peoples' experiences of investigations and the effect of concordance between clinical presentation and investigation findings.

Methods In this qualitative study, 14 participants who had recently undergone investigations for a clinical presentation of radiculopathy were purposively recruited from an NHS, Primary Care Service in the United Kingdom. Based on the principles of interpretative phenomenological analysis, individual, semi-structured interviews were recorded and transcribed verbatim. Data were managed using a framework approach and analysed thematically.

Findings

Although people reported wanting investigations to understand the cause of symptoms and inform management, access to them was reported to be difficult and protracted. When investigations revealed potentially relevant findings, people experienced relief, validation, empowerment and decisive decision-making. Disappointment emerged, however, regarding treatment options and waiting times, and long-term prognosis. When investigations failed to identify relevant findings, people were unable to make sense of their symptoms, relinquish their search to identify the cause, or to move forward in their management.

Conclusions

This study provides the first reported in-depth interpretation of peoples' experience of undergoing investigations specifically for radiculopathy. Important implications have been identified for: investigation referral criteria; shared-decision-making; information sharing and managing expectations and disappointment.

7. PELVIC ORGANS/WOMAN'S HEALTH

Previous C section vaginal birth

Arch Gynecol Obstet. 2018 Nov 1. doi: 10.1007/s00404-018-4956-5. [

Labor progression of women attempting vaginal birth after previous cesarean delivery with or without epidural analgesia.

Miller N^{1,2}, Pelleg M³, Hag-Yahia N^{4,3}, Daykan Y^{4,3}, Pasternak Y^{4,3}, Biron-Shental T^{4,3}.

PURPOSE:

Normal labor curves have not been assessed for women undergoing a trial of labor after cesarean delivery (TOLAC). This study examined labor patterns during TOLAC in relation to epidural analgesia use.

METHODS:

Retrospective cohort study of deliveries of women undergoing TOLAC at a single, academic, tertiary medical center. Length of first, second and third stages of labor was compared between 424 women undergoing TOLAC in the current labor with no previous vaginal delivery (VD) and 357 women with at least one previous VD and current TOLAC.

RESULTS:

Women in the TOLAC only group had significantly longer labors compared to women in the previous VD and TOLAC group. In both groups, women who underwent epidural analgesia had longer first and second stages of labor. In the TOLAC only group, more women who had epidural analgesia tended to deliver vaginally as compared to those who did not ($P = 0.09$). For women who delivered vaginally, the 95th percentile for the second stage duration with epidural was 3.40 h in the TOLAC only group and 2.3 h in the previous VD and TOLAC group. The 95th percentile for the second stage duration without epidural was 1.4 h in the TOLAC only group and 0.9 h in the previous VD and TOLAC group.

CONCLUSIONS:

Operative intervention (instrumental delivery/cesarean delivery (CD)) might be considered for women attempting TOLAC after a 2-h duration of second stage without epidural and 3-h duration with epidural, with an hour less for women who also had previous VD.

Impact of levonorgestrel on infants

The effect of immediate postpartum levonorgestrel contraceptive implant use on breastfeeding and infant growth: A randomized controlled trial

Contraception — Averbach S, et al. | November 07, 2018

Researchers investigated the effect of immediate postpartum insertion of levonorgestrel contraceptive implants vs delayed insertion at six to eight weeks postpartum on infant growth from birth to six months, the onset of lactogenesis, or breastfeeding continuation at three and six months postpartum. In this randomized trial of women in Uganda who wanted contraceptive implants postpartum, they randomly assigned participants to receive either immediate (within five days of delivery) or delayed (six to eight weeks postpartum) insertion of a two-rod levonorgestrel contraceptive implant system.

As per findings, the timing of postpartum initiation of levonorgestrel contraceptive implants is not associated with the change in infant growth from birth to six months, the onset of lactogenesis, or breastfeeding continuation at three or six months postpartum.

Types of removals for cervical CA

Minimally invasive vs abdominal radical hysterectomy for cervical cancer

New England Journal of Medicine — Ramirez PT, et al. | November 02, 2018

In this trial, the Laparoscopic Approach to Cervical Cancer (LACC) Trial, researchers tested their premise that inferior results were not seen with minimally invasive radical hysterectomy vs open abdominal radical hysterectomy, in terms of disease-free survival rate. For this purpose, they prospectively allocated patients to either minimally invasive (conventional laparoscopic or robotic) or open abdominal radical hysterectomy and then assessed the disease-free survival rate, the rate of recurrence, and the overall survival rate between the two groups. Researchers concluded that lower rates of disease-free survival and overall survival were evident in relation to minimally invasive radical hysterectomy vs open abdominal radical hysterectomy, in women with early-stage cervical cancer.

Methods

- In this trial, researchers randomized patients with stage IA1 (lymphovascular invasion), IA2, or IB1 cervical cancer and a histologic subtype of squamous-cell carcinoma, adenocarcinoma, or adenosquamous carcinoma to undergo minimally invasive surgery or open surgery.
- The rate of disease-free survival at 4.5 years was assessed as the primary outcome; noninferiority was claimed if the lower boundary of the two-sided 95% confidence interval of the between-group difference (minimally invasive surgery minus open surgery) was greater than -7.2 percentage points (i.e., closer to zero).

Results

- Researchers assigned 319 patients to minimally invasive surgery and 312 to open surgery; the patients' mean age was 46.0 years and stage IB1 disease was identified in most patients (91.9%).
- Among patients who were assigned to and underwent minimally invasive surgery, laparoscopy was performed on 84.4% and robot-assisted surgery on 15.6%.
- Regarding the histologic subtypes, the rate of lymphovascular invasion, rates of parametrial and lymph-node involvement, tumor size, tumor grade, and the rate of use of adjuvant therapy, the two groups were similar.
- With minimally invasive surgery and with open surgery, the rate of disease-free survival at 4.5 years was 86.0% and 96.5%, respectively, a difference of -10.6 percentage points (95% confidence interval [CI], -16.4 to -4.7).
- A lower rate of disease-free survival was noted in association with minimally invasive surgery vs open surgery (3-year rate, 91.2% vs 97.1%; hazard ratio for disease recurrence or death from cervical cancer, 3.74; 95% CI, 1.63 to 8.58), a difference that was sustained after adjustment for age, body-mass index, stage of disease, lymphovascular invasion, and lymph-node involvement; minimally invasive surgery was also associated with a lower rate of overall survival (3-year rate, 93.8% vs 99.0%; hazard ratio for death from any cause, 6.00; 95% CI, 1.77 to 20.30).

Statins reduce ovarian CA

Int J Cancer. 2018 Jul 14. doi: 10.1002/ijc.31758.

Statin therapy and association with ovarian cancer risk in the New England Case Control (NEC) study.

Akinwunmi B^{1,2}, Vitonis AF¹, Titus L³, Terry KL^{1,4,5}, Cramer DW^{1,4,5}.

Statins are widely used to lower blood cholesterol and reduce risk for cardiovascular diseases, but attention has recently focused on a role in cancer prevention or therapy.

Here we present data from a large case-control study addressing whether statin use can lower the risk for epithelial ovarian cancer (EOC). Between 1992 and 2008, data including medications used for at least 6 months were collected from 2,040 cases with EOC and 2,100 frequency-matched controls without the disease who participated in the New England Case Control study. We used unconditional logistic regression controlling for matching factors and potential confounders to examine the association between statin use and the risk for EOC. Overall, women who used statins had 32% lower risk of ovarian cancer compared to non-users (Odds ratio (OR) 0.68, 95% Confidence Interval (CI): 0.54-0.85), adjusting for the matching factors and other covariates. The reduced risk was most apparent in women taking a lipophilic statin who began use after age 49, and who had used them 2-4.9 years.

Statin use was associated with lower risks for both serous and non-serous histologic subtypes with the strongest effect seen for mucinous and mixed epithelial subtypes. The association became apparent about a decade after the introduction of statins and did not appear to be confounded by indications for use of statins or medications used concomitantly. In this case-control study, statins were found to lower the risk for both serous and non-serous EOC and especially mucinous EOC.

Breast CA and low fat diet

JAMA Oncol. 2018 Oct 1;4(10):e181212. doi: 10.1001/jamaoncol.2018.1212. Epub 2018 Oct 11.

Association of Low-Fat Dietary Pattern With Breast Cancer Overall Survival: A Secondary Analysis of the Women's Health Initiative Randomized Clinical Trial.

Chlebowski RT¹, Aragaki AK², Anderson GL², Simon MS³, Manson JE⁴, Neuhaus ML², Pan K⁵, Stefanic ML⁶, Rohan TE⁷, Lane D⁸, Qi L⁹, Snetselaar L¹⁰, Prentice RL².

IMPORTANCE:

In a randomized clinical trial, a low-fat eating pattern was associated with lower risk of death after breast cancer. However, the extent to which results were driven by dietary influence on survival after breast cancer diagnosis was unknown.

OBJECTIVE:

To determine the association of a low-fat dietary pattern with breast cancer overall survival (breast cancer followed by death from any cause measured from cancer diagnosis).

DESIGN, SETTING, AND PARTICIPANTS:

This is a secondary analysis of the Women's Health Initiative randomized clinical trial that was conducted at 40 US clinical centers enrolling participants from 1993 through 1998. Participants were 48 835 postmenopausal women with no previous breast cancer and dietary fat intake of greater than 32% by food frequency questionnaire.

INTERVENTIONS:

Participants were randomized to a dietary intervention group (40%; n = 19 541) with goals to reduce fat intake to 20% of energy and increase fruit, vegetable, and grain intake or a usual-diet comparison group (60%; n = 29 294). Dietary group participants with incident breast cancers continued to participate in subsequent dietary intervention activities.

MAIN OUTCOMES AND MEASURES:

Breast cancer overall survival for incident breast cancers diagnosed during the 8.5-year (median) dietary intervention, examined in post hoc analyses after 11.5 years (median) postdiagnosis follow-up.

RESULTS:

Of 1764 women diagnosed with breast cancer during the dietary intervention period, mean (SD) age at screening was 62.7 (6.7) years and age at diagnosis was 67.6 (6.9) years. With 516 total deaths, breast cancer overall survival was significantly greater for women in the dietary intervention group than in the usual-diet comparison group (10-year survival of 82% and 78%, respectively; hazard ratio [HR], 0.78; 95% CI, 0.65-0.94; P = .01). In the dietary group there were fewer deaths from breast cancer (68 vs 120; HR, 0.86; 95% CI, 0.64-1.17), other cancers (36 vs 65; HR, 0.76; 95% CI, 0.50-1.17), and cardiovascular disease (27 vs 64; HR, 0.62; 95% CI, 0.39-0.99).

CONCLUSIONS AND RELEVANCE:

In women who received a diagnosis of breast cancer during the dietary intervention period, those in the dietary group had increased overall survival. The increase is due, in part, to better survival from several causes of death.

Breast CA

Association of body mass index and age with subsequent breast cancer risk in premenopausal women- The Premenopausal Breast Cancer Collaborative Group

JAMA — Schoemaker MJ, et al. | November 09, 2018

Researchers examined the link between body mass index (BMI) and premenopausal breast cancer risk, taking into account age at BMI, attained age, risk factors for breast cancer, and tumor features. An attenuated risk of premenopausal breast cancer was observed in relation to higher adiposity at a greater degree than shown before and across the entire distribution of BMI. For BMI, strongest associations of risk were observed in early adulthood. Possible important preventive potential of understanding the biological mechanisms underlying these associations was acknowledged.

Methods

- Pooled individual-level data from 758,592 premenopausal women from 19 prospective cohorts was used in this multicenter analysis.
- Researchers used Cox proportional hazards regression analysis to estimate hazard ratios (HRs) of premenopausal breast cancer in association with BMI from ages 18 through 54 years.
- They performed median follow-up of 9.3 years (interquartile range, 4.9-13.5 years) per participant, with 13,082 incident cases of breast cancer.
- Recruitment of participants was carried out from January 1, 1963 through December 31, 2013, and data analysis was performed from September 1, 2013, through December 31, 2017.
- They assessed body mass index at ages 18 to 24, 25 to 34, 35 to 44, and 45 to 54 years.
- Main outcomes and measures included invasive or in situ premenopausal breast cancer

Results

- This study included a total of 758,592 premenopausal women (median age, 40.6 years; interquartile range, 35.2-45.5 years).
- Findings revealed inverse linear associations of BMI with breast cancer risk; these associations were stronger for BMI at ages 18 to 24 years (HR per 5 kg/m² [5.0-U] difference, 0.77; 95% CI, 0.73-0.80) than for BMI at ages 45 to 54 years (HR per 5.0-U difference, 0.88; 95% CI, 0.86-0.91); even among nonoverweight women, inverse associations were seen.
- At ages 18 to 24 years, a 4.2-fold risk gradient was noted between the highest and lowest BMI categories (BMI \geq 35.0 vs <17.0) (HR, 0.24; 95% CI, 0.14-0.40).
- No appreciable variations were seen in the hazard ratios by attained age or between strata of other breast cancer risk factors.
- For BMI at every age group, they observed stronger associations for estrogen receptor–positive and/or progesterone receptor–positive vs for hormone receptor–negative breast cancer (eg, for BMI at age 18 to 24 years: HR per 5.0-U difference for estrogen receptor–positive and progesterone receptor–positive tumors, 0.76 [95% CI, 0.70-0.81] vs hormone receptor–negative tumors, 0.85 [95% CI: 0.76-0.95]); there was no consistent association of BMI at ages 25 to 54 years with triple-negative or hormone receptor–negative breast cancer overall.

8. VISCERA

Co Q 10 Helps

Effects of Coenzyme Q10 on Statin-Induced Myopathy: An Updated Meta-Analysis of Randomized Controlled Trials

Hua Qu Ming Guo Hua Chai Wen-ting Wang Zhu-ye Gao Da-zhuo Shi

Originally published 25 Sep 2018 *Journal of the American Heart Association*. 2018;7:e009835

Background

Previous studies have demonstrated a possible association between the induction of coenzyme Q10 (CoQ10) after statin treatment and statin-induced myopathy. However, whether CoQ10 supplementation ameliorates statin-induced myopathy remains unclear.

Methods and Results

PubMed, EMBASE, and Cochrane Library were searched to identify randomized controlled trials investigating the effect of CoQ10 on statin-induced myopathy. We calculated the pooled weighted mean difference (WMD) using a fixed-effect model and a random-effect model to assess the effects of CoQ10 supplementation on statin-associated muscle symptoms and plasma creatine kinase. The methodological quality of the studies was determined, according to the *Cochrane Handbook*. Publication bias was evaluated by a funnel plot, Egger regression test, and the Begg-Mazumdar correlation test. Twelve randomized controlled trials with a total of 575 patients were enrolled; of them, 294 patients were in the CoQ10 supplementation group and 281 were in the placebo group. Compared with placebo, CoQ10 supplementation ameliorated statin-associated muscle symptoms, such as muscle pain (WMD, -1.60 ; 95% confidence interval [CI], -1.75 to -1.44 ; $P < 0.001$), muscle weakness (WMD, -2.28 ; 95% CI, -2.79 to -1.77 ; $P = 0.006$), muscle cramp (WMD, -1.78 ; 95% CI, -2.31 to -1.24 ; $P < 0.001$), and muscle tiredness (WMD, -1.75 ; 95% CI, -2.31 to -1.19 ; $P < 0.001$), whereas no reduction in the plasma creatine kinase level was observed after CoQ10 supplementation (WMD, 0.09 ; 95% CI, -0.06 to 0.24 ; $P = 0.23$).

Conclusions

CoQ10 supplementation ameliorated statin-associated muscle symptoms, implying that CoQ10 supplementation may be a complementary approach to manage statin-induced myopathy.

Cardiac problems increase dementia**Research****Pre-eclampsia and risk of dementia later in life: nationwide cohort study**

BMJ 2018; 363 doi: <https://doi.org/10.1136/bmj.k4109> (Published 17 October 2018) Cite

Objective To explore associations between pre-eclampsia and later dementia, overall and by dementia subtype and timing of onset.

Design Nationwide register based cohort study.

Setting Denmark.

Population All women with at least one live birth or stillbirth between 1978 and 2015.

Main outcome measure Hazard ratios comparing dementia rates among women with and without a history of pre-eclampsia, estimated using Cox regression.

Results The cohort consisted of 1 178 005 women with 20 352 695 person years of follow-up. Women with a history of pre-eclampsia had more than three times the risk of vascular dementia (hazard ratio 3.46, 95% confidence interval 1.97 to 6.10) later in life, compared with women with no history of pre-eclampsia. The association with vascular dementia seemed to be stronger for late onset disease (hazard ratio 6.53, 2.82 to 15.1) than for early onset disease (2.32, 1.06 to 5.06) ($P=0.08$). Adjustment for diabetes, hypertension, and cardiovascular disease attenuated the hazard ratios only moderately; sensitivity analyses suggested that body mass index was unlikely to explain the association with vascular dementia. In contrast, only modest associations were observed for Alzheimer's disease (hazard ratio 1.45, 1.05 to 1.99) and other/unspecified dementia (1.40, 1.08 to 1.83).

Conclusions Pre-eclampsia was associated with an increased risk of dementia, particularly vascular dementia. Cardiovascular disease, hypertension, and diabetes were unlikely to mediate the associations substantially, suggesting that pre-eclampsia and vascular dementia may share underlying mechanisms or susceptibility pathways. Asking about a history of pre-eclampsia could help physicians to identify women who might benefit from screening for early signs of disease, allowing for early clinical intervention.

Colder weather promotes myocardial infarcts

Association of Weather With Day-to-Day Incidence of Myocardial Infarction A SWEDEHEART Nationwide Observational Study

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Key Points

Question Is the incidence of myocardial infarction affected by different weather conditions?

Findings In this nationwide population-based study, a higher incidence of myocardial infarction in Sweden was observed at days with low air temperature, low atmospheric air pressure, high wind velocity, and shorter sunshine duration.

Meaning This study adds to knowledge on the role of weather as potential trigger of myocardial infarction.

Importance Whether certain weather conditions modulate the onset of myocardial infarction (MI) is of great interest to clinicians because it could be used to prevent MIs as well as guide allocation of health care resources.

Objective To determine if weather is associated with day-to-day incidence of MI.

Design, Setting, and Participants In this prospective, population-based and nationwide setting, daily weather data from the Swedish Meteorological and Hydrological Institute were extracted for all MIs reported to the Swedish nationwide coronary care unit registry, Swedish Web-System for Enhancement and Development of Evidence-Based Care in Heart Disease Evaluated According to Recommended Therapies (SWEDEHEART), during 1998 to 2013 and then merged with each MI on date of symptom onset and coronary care unit. All patients admitted to any coronary care unit in Sweden owing to MI were included. A total of 280 873 patients were included, of whom 92 044 were diagnosed as having ST-elevation MI. Weather data were available for 274 029 patients (97.6%), which composed the final study population. Data were analyzed between February 2017 and April 2018.

Exposures The nationwide daily mean air temperature, minimum air temperature, maximum air temperature, wind velocity, sunshine duration, atmospheric air pressure, air humidity, snow precipitation, rain precipitation, and change in air temperature.

Main Outcomes and Measures The nationwide daily counts of MI as outcome.

Results In 274 029 patients, mean (SD) age was 71.7 (12) years. Incidence of MI increased with lower air temperature, lower atmospheric air pressure, higher wind velocity, and shorter sunshine duration. The most pronounced association was observed for air temperature, where a 1-SD increase in air temperature (7.4°C) was associated with a 2.8% reduction in risk of MI (unadjusted incidence ratio, 0.972; 95% CI, 0.967-0.977; $P < .001$). Results were consistent for non-ST-elevation MI as well as ST-elevation MI and across a large range of subgroups and health care regions.

Conclusions and Relevance In this large, nationwide study, low air temperature, low atmospheric air pressure, high wind velocity, and shorter sunshine duration were associated with risk of MI with the most evident association observed for air temperature.

Problems with proton pumps

Adverse outcomes of long-term use of proton pump inhibitors: A systematic review and meta-analysis

European Journal of Gastroenterology & Hepatology — Islam MM, et al. | November 08, 2018
The researchers carried out a systematic review and meta-analysis to explore the link between the long-term use of proton pump inhibitors (PPIs) and the risks of various diseases.

Studies were selected via a search of Medline (PubMed), Embase, and the Cochrane Library from inception using common keywords in July 2016. Observational studies that provided risk estimates on the long-term use of PPIs and their adverse effects were included. Compared with patients who did not use PPIs, odds of community-acquired pneumonia, hip fracture, and colorectal cancer were 67%, 42%, and 55% higher in patients with long-term PPIs use. Data reported that the use of PPIs gives short-term health benefits. Prolonged use of PPIs was related to minor and also potentially major adverse health outcomes.

They strongly advise that the prescription of PPIs should be done with care to improve the medication's effectiveness and patients' safety.

10 A. CERVICAL SPINE**Reduced tactile acuity in patient with neck pain****Tactile acuity is reduced in people with chronic neck pain**

Daniel S. Harvie Grace Edmond-Hank Ashley D. Smith

DOI: <https://doi.org/10.1016/j.msksp.2017.11.009>

Highlights

- People with chronic neck pain show reduced tactile acuity.
- Tactile acuity deficits are greatest at, but not localised to, the neck.
- Tactile acuity deficits correlate with pain intensity and duration.

Abstract**Background**

Tactile acuity deficits have been demonstrated in a range of persistent pain conditions and may reflect underlying cortical re-organisation.

Objective

This study aimed to determine whether tactile acuity is impaired in people with chronic neck pain relative to controls, and whether deficits relate to pain location, duration and intensity.

Methods

In this cross-sectional study, 20 people with chronic neck pain (5 idiopathic neck pain; 15 whiplash-associated disorder) and 20 pain-free controls underwent two-point discrimination (TPD) testing at the neck, back and arm, and point-to-point (PTP) and graphesthesia tests of tactile acuity at the neck and arm.

Results

Linear mixed effects models demonstrated a significant group*body region interaction for TPD, Graphesthesia and PTP tests ($P_s < 0.001$), with post hoc tests showing impaired TPD in people with neck pain relative to controls at the neck, low back, and arm ($P \leq 0.001$). Graphesthesia and PTP was also impaired at the neck ($P < 0.001$) but not the arm ($P \geq 0.48$). TPD correlated with intensity and duration of pain (Pearson's $r = 0.48$, $P < 0.05$; Pearson's $r = 0.77$, $P < 0.01$). There was no sig difference between the two neck pain groups for any tactile acuity measure (TPD: $P = 0.054$; Graphesthesia; $P = 0.67$; Point to Point: $P = 0.77$), however, low power limited confidence in this comparison.

Conclusion

People with chronic neck pain demonstrated tactile acuity deficits in painful and non-painful regions when measured using the TPD test, with the magnitude of deficits appearing greatest at the neck. The study also revealed a positive relationship between TPD and pain intensity/duration, further supporting the main study finding.

Factors leading to initial neck pain**February 2018** Volume 33, Pages 77–83**Identifying risk factors for first-episode neck pain: A systematic review**Rebecca Kim Colin Wiest Kelly Clark Chad Cook² Maggie Horn³DOI: <https://doi.org/10.1016/j.msksp.2017.11.007>

Neck pain affects 15.1% of the United States' general population every 3 months, and ranks fourth in global disability. Because of the tendency for neck pain to become a chronic issue, it is important to identify risk factors that could encourage prevention and early diagnosis.

The purpose of this systematic review was to identify risk factors for a first episode of neck pain. Three databases were searched with key words such as “neck pain” and “first incidence.” Risk factors from the resulting articles were reported as either a physical or psychosocial risk factor and ranked by the strength of their odds/risk/hazard ratio: <1.0 (protective factor), 1.0–1.5 (minor risk), 1.5–2.0 (moderate risk), or 2.0+ (major risk). Out of 878 total articles, 10 articles met our inclusion criteria. Of these studies, a global incidence rate for neck pain was calculated to be 16.2%. The strongest psychosocial risk factors were depressed mood, high role conflict, and perceived muscular tension. There were no major physical risk factors (2.0+), but the most commonly reported risk factor was work in awkward/sustained postures. Protective measures found included high perceived empowering leadership, high perceived social climate, leisure physical activity, and cervical extensor endurance.

Most risk factors found for neck pain were related to psychosocial characteristics, rather than physical characteristics. A number of these risk factors were mediating factors, suggesting that a prevention-based program may be useful in modifying the existence of the risk factors before the occurrence of neck pain.

12 A. WHIPLASH

Lateral meniscoid involvement

Lateral atlantoaxial joint meniscoid volume in individuals with whiplash associated disorder: A case-control study

Scott F. Farrell Subaat Khan Peter G. Osmotherly Michele Sterling Jon Cornwall Darren A. Rivett

DOI: <https://doi.org/10.1016/j.msksp.2017.11.004>

Highlights

- Atlantoaxial joint meniscoid volume was measured in whiplash and control groups.
- No between groups differences were observed.
- Larger dorsal meniscoids were associated with higher pain in people with whiplash.

Abstract

Background

Lateral atlantoaxial (LAA) joints are established sources of nociceptive input in chronic whiplash associated disorder (WAD). These joints contain intra-articular meniscoids that may be damaged in whiplash trauma. LAA joint meniscoid morphology has not been investigated comprehensively in a chronic WAD population, and it is unclear whether morphological differences exist compared to a pain-free population.

Objectives

This study examined LAA joint meniscoid volume in individuals with chronic WAD who report pain in a distribution consistent with LAA joint pain.

Design

Case-control study.

Method

Fourteen individuals with chronic WAD with pain in an LAA joint distribution (mean [SD] age 38.1 [10.8] years; six female) and 14 age- and sex-matched pain-free controls (38.0 [10.5] years) underwent cervical spine magnetic resonance imaging. LAA joint images were inspected for meniscoids; meniscoid volume was calculated in mm³ and as a percentage of articular cavity volume. Symptom duration, location and intensity were recorded. Data were analysed using paired t-tests, Wilcoxon signed-rank testing, Spearman's rank testing, linear and logistic regression ($\alpha < 0.05$).

Results

Ventral and dorsal meniscoids ($n = 112$) were found in each LAA joint. Greater dorsal meniscoid volume as a percentage of articular cavity volume was associated with higher pain intensity (odds ratio 1.48, $p = 0.03$; likelihood ratio test chi-square₂ = 6.64, $p = 0.04$), however no significant differences existed between meniscoid volumes of WAD and control participants.

Conclusions

Findings indicate a potential link between dorsal LAA joint meniscoid volume and pain, suggesting larger meniscoid size may have pathoanatomical significance in WAD.

13 B. TMJ/ORAL**Periodontal disease and liver disease**

Liver Int. 2018 Oct 9. doi: 10.1111/liv.13985.

Periodontitis is associated with incident chronic liver disease-A population-based cohort study.

Helenius-Hietala J¹, Suominen AL^{2,3,4}, Ruokonen H¹, Knuutila M⁵, Puukka P⁶, Jula A⁶, Meurman JH¹, Åberg F^{7,8}.

BACKGROUND & AIMS:

Chronic liver disease is a major health concern worldwide and the identification of novel modifiable risk factors may benefit subjects at risk. Few studies have analyzed periodontitis as a risk factor for liver complications. We studied whether periodontitis is associated with incident severe liver disease.

METHODS:

The study comprised 6165 individuals without baseline liver disease who participated in the Finnish population-based Health 2000 Survey (BRIF8901) during 2000-2001, a nationally representative cohort. Follow-up was until 2013 for liver-related admissions, liver cancer and mortality from National Hospital Discharge, Finnish Cancer Registry and Causes of Death Register, Statistics Finland. Mild to moderate periodontitis was defined as ≥ 1 tooth with periodontal pocket ≥ 4 mm deep, and advanced periodontitis as ≥ 5 teeth with such pockets. Multiple confounders were considered.

RESULTS:

A total of 79 subjects experienced a severe liver event during follow-up. When adjusted for age, sex and number of teeth, hazards ratios by Cox regression regarding incident severe liver disease were, for mild to moderate periodontitis, 2.12 (95% CI 0.98-4.58), and, for advanced periodontitis, 3.69 (95% CI 1.79-7.60). These risk estimates remained stable after additionally adjusting for alcohol use, smoking, metabolic risk, serum gamma-glutamyltransferase, dental-care habits, lifestyle and socioeconomic status. Periodontal disease-associated liver risk was accentuated among subjects with non-alcoholic fatty liver disease or heavy alcohol use at baseline.

CONCLUSIONS:

Periodontitis was associated with incident liver disease in the general population independently of various confounders. As a preventable disease, periodontal disease might present a modifiable risk factor for chronic liver disease.

Relationship between periodontal disease and liver

Periodontitis is associated with incident chronic liver disease—A population-based cohort study

Liver International — Helenius-Hietala J, et al. | November 08, 2018

Researchers investigated whether there was an association between periodontitis and incident severe liver disease. Study participants were 6165 people without baseline liver disease who partook in the Finnish population-based Health 2000 Survey (BRIF8901) during 2000-2001, a nationally representative cohort. Among subjects with non-alcoholic fatty liver disease or heavy alcohol use at baseline, periodontal disease-associated liver risk was accentuated.

Findings suggested an association of periodontitis with the incident liver disease in the general population independently of various confounders. Periodontal disease might present a modifiable risk factor for chronic liver disease as a preventable disease.

14. HEADACHES

Migraines allodynia

Clinical observation of the effect of prophylaxis on allodynia in patients with migraine

Journal of Pain Research — Zhang N, et al. | November 08, 2018

Researchers aimed to determine the risk factors of cutaneous allodynia in migraine by comparing clinical characteristics of migraine with and without allodynia.

Based on the change in pain threshold after therapy, they assessed the effects of prophylactic therapy on allodynia in patients with migraine. They analyzed 71 patients with migraine admitted to the Department of Neurology of Shandong Provincial Hospital and identified allodynia especially in females who experienced frequent migraine attacks for a prolonged period. Major predictors of allodynia comprised gender, duration of illness, and number of migraine attacks per month.

Effective improvement in pain threshold and central sensitization of patients with migraine, and effective relief in allodynia could be achieved by administering topiramate and flunarizine orally for a short duration

19. GLENOHUMERAL/SHOULDER**McKenzie agreement with standard orthopedic tests**

February 2018 Volume 33, Pages 11–17

Consistency of commonly used orthopedic special tests of the shoulder when used with the McKenzie system of mechanical diagnosis and therapy

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DOI: <https://doi.org/10.1016/j.msksp.2017.10.001>

Highlights

- Orthopedic Special Tests (OSTs) are commonly used to evaluate shoulder problems.
- McKenzie Mechanical Diagnosis and Therapy (MDT) can classify shoulder problems.
- MDT shoulder classification affects the consistency of specific OSTs.
- The Derangement classification compromises the reliability of specific OSTs.
- An initial screening for Derangement may enhance diagnostic utility of OSTs.

Abstract**Background**

Shoulder Orthopedic Special Tests (OSTs) are used to assist with diagnosis in shoulder disorders. Issues with reliability and validity exist, making their interpretation challenging. Exploring OST results on repeated testing within Mechanical Diagnosis and Therapy (MDT) shoulder classifications may offer insight into the poor performance of these tests.

Objectives

To investigate in patients with shoulder complaints, whether MDT classifications affect the agreement of OST results over the course of treatment.

Methods

An international group of MDT clinicians recruited 105 patients with shoulder problems. Three commonly used OSTs (Empty Can, Hawkins-Kennedy, and Speed's tests) were utilized. Results of the OSTs were collected at sessions 1, 3, 5 and 8, or at discharge from an MDT classification-based treatment. The *Kappa* statistic was utilized to determine the agreement of the OST results over time for each of the MDT classifications.

Results

The overall *Kappa* values for Empty Can, Hawkins-Kennedy and Speed's tests were 0.28 (SE = 0.07), 0.28 (SE = 0.07) and 0.29 (SE = 0.07), respectively. The highest level of agreement was for Articular Dysfunction for the Empty Can test (0.84, SE = 0.19). For shoulder Derangements, there was no agreement for any of the OSTs (*P* values > 0.05).

Conclusion

The lack of agreement when the OSTs were consecutively tested in the presence of the MDT Derangement classification contrasted with the other MDT classifications. The presence of Derangement was responsible for reducing the overall agreement of commonly used OSTs and may explain the poor consistency for OSTs.

22 A. IMPINGEMENT

Value of diagnosis

Subacromial impingement syndrome – What does this mean to and for the patient? A qualitative study

Andrew Cuff Chris Littlewood

DOI: <https://doi.org/10.1016/j.msksp.2017.10.008>

Highlights

- •Diagnosis of shoulder pain remains grounded in a biomedical model.
- •Biomedical diagnoses, including SIS, appear to be acceptable to patients.
- •Understanding of the diagnosis influences patient expectations of appropriate treatment.
- •A diagnosis of SIS can impact negatively on expectations of positive outcome with physiotherapy.

Abstract

Background

Structured exercise has been reported as the current treatment of choice for patients diagnosed with subacromial impingement syndrome (SIS). However, it has been suggested that this diagnostic term and the language used to explain this condition might negatively influence patient expectations and serve as a barrier to engagement with exercise, hence compromising clinical outcomes.

Aim To explore how patients rationalise their shoulder pain following a diagnosis of SIS and how this understanding might impact on their perception of physiotherapy and engagement with exercise.

Design A qualitative study using semi-structured interviews and analysed using the Framework method.

Setting One NHS Physiotherapy department in South Yorkshire, England.

Participants

Nine patients diagnosed with SIS were purposively sampled from those referred to the outpatient physiotherapy department by the orthopaedic team (consultant surgeons and registrars).

Results

Three main themes were generated: (1) The diagnostic experience, (2) Understanding of the problem, (3) Expectation of the treatment required; with one subtheme: (3b) Barriers to engagement with physiotherapy.

Conclusion

The findings from this study suggest that diagnosis of shoulder pain remains grounded in a biomedical model. Understanding and explaining pain using the subacromial impingement model seems acceptable to patients but might have significant implications for engagement with and success of physiotherapy. It is suggested that clinicians should be mindful of the terminology they use and consider its impact on the patient's treatment pathway with the aim of doing no harm with the language used.

33. MENISCUS

Repairs over 40 no difference

Meniscal repair in patients age 40 years and older: A systematic review of 11 studies and 148 patients

The Knee — Everhart JS, et al. | November 09, 2018

Researchers performed a systematic search identifying 225 studies assessing meniscus repair outcome on adults in order to evaluate failure rates after meniscus repair in patients age 40 years or older. They included meniscus repair outcomes of 148 patients from 11 studies (125 inside-out repairs and 23 all-inside repairs). Analysis revealed an overall failure rate of 10% (15/148), ranging from 0 to 23% in individual studies with more than one patient age ≥ 40 years.

Patients aged 40 years and older had meniscus repair failure rates comparable to those quoted for younger patients; no difference in failure rates between groups was reported in a comparative study of patients over vs under age 40 years.

45 A. MANUAL THERAPY LUMBAR & GENERAL**MRI of disc during ext exercise****MRI evaluation of the effects of extension exercises on the disc fluid content and location of the centroid of the fluid distribution**

Vahid Abdollah Eric C. Parent Michele C. Battié

DOI: <https://doi.org/10.1016/j.msksp.2017.11.008>

Highlights

- The signal intensity weighted centroid (SIWC) is a novel reliable non-invasive method for quantifying the effects of loading.
- Except for a more anterior SIWC in the L4L5 disc after extension, there were no significant SIWC differences.
- No significant differences were found in disc or nucleus mean signal intensity after extension exercise at L4L5 and L5S1.
- Prone press-up extension did not increase disc fluid content, but may anterior fluid redistribution at lower lumbar levels.

Background McKenzie prone press-up exercises have been hypothesised to reduce intradiscal pressure, allowing fluid to be reabsorbed into the disc, which could improve the internal stability and local chemical milieu of the disc, potentially reducing symptoms.

Objective To investigate the immediate effects of prone press-up exercises on lumbar disc fluid content and movement.

Design Quantification of MRI changes before and after a single exercise session.

Methods The mid-sagittal T₂-weighted MR images of 22 volunteers with low back pain were obtained before and immediately after performing press-up exercises. The whole disc and nucleus regions of the L4-5 and L5-S1 discs were then segmented, and their mean signal intensity (MSI) and signal intensity weighted centroid (SIWC) were computed to estimate disc fluid content and displacement.

Results

There were no significant differences between the MSI and the vertical position of the SIWC of the whole disc before and after extension at either disc level (effect size [ES]: -0.23 to 0.09). There was a significant anterior displacement (0.1 ± 5.4 mm) of the location of the SIWC of the disc after extension exercise at L4-5 (ES: 0.22), but not at L5-S1 (ES: 0.00) or at either level for the nucleus region (ES: -0.06; 0.16).

Conclusion

Little evidence was found supporting the hypothesis that press-up exercises affect disc fluid content and distribution. Novel parameters reflecting fluid distribution detected similar or larger effects of the extension than MSI. If such exercises are effective in reducing symptoms, it is likely through other mechanisms than by changing fluid content or distribution.

45 B. MANUAL THERAPY CERVICAL

Safety of care

Considerations to improve the safety of cervical spine manual therapy

Nathan Hutting Roger Kerry Michel W. Coppieters Gwendolijne G.M. Scholten-Peeters

DOI: <https://doi.org/10.1016/j.msksp.2017.11.003>

Highlights

- Prevention of potential serious adverse events is important in manual therapy.
- Identifying a possible vasculogenic origin or other serious pathology is important.
- Indications, contraindications and risk factors for manual therapy must be assessed.
- Patient interviewing, clinical assessment, interpretation and analysis are important skills.

Abstract

Manipulation and mobilisation of the cervical spine are well established interventions in the management of patients with headache and/or neck pain. However, their benefits are accompanied by potential, yet rare risks in terms of serious adverse events, including neurovascular insult to the brain. A recent international framework for risk assessment and management offers directions in the mitigation of this risk by facilitating sound clinical reasoning. The aim of this article is to critically reflect on and summarize the current knowledge about cervical spine manual therapy and to provide guidance for clinical reasoning for cervical spine manual therapy.

48 A. STM**Fascial manipulation helps LBP****“Fascial Manipulation vs. Standard Physical Therapy Practice to Low Back Pain Diagnoses: A Pragmatic Study”**

Brent Harper Larry Steinbeck Adrian Aron

DOI: <https://doi.org/10.1016/j.jbmt.2018.10.007>

Background

Connective tissue mobility alters motor unit recruitment, but the restoration of fascial mobility allows for optimal motor function. The Fascial Manipulation® (FM®) method is a multiplanar approach that assesses and treats the mobility of deep fascia in specific anatomical locations where motor units converge.

Objectives

To assess the effects of FM® vs. standard physical therapy treatment (SPT) in patients with low back pain (LBP).

Design

Six-months controlled clinical trial

Method

102 participants with LBP received SPT or FM®. Numeric Pain Rating Scale (NPRS), 15- point Global Rating of Change (GROC), and Oswestry Disability Index (ODI) were used to monitor progress.

Results

The FM® group had a significant lower ODI, $p < 0.009$ and NPS scores, $p < 0.0001$, and significant higher GROC scores, $p < 0.003$, once their means were adjusted for initial scores. When comparing the SPT to FM®: the final ODI decreased by at least 1 category in 48.9% of the SPT cases, while in 36.2% of the cases was no change; ODI minimal clinical importance difference (MCID) change of 10% decrease in scores occurred in 70.2% of the SPT group compared to 96% of the FM® group, $p = 0.003$; ODI MCID change of 50% decrease in scores occurred in 40% of the SPT group compared to 64.6% of the FM® group, $p = 0.02$; 44.7% of the participants in the SPT group had final GROC values above +5 at discharge, compared to 92% of the participants from the FM® group ($p = 0.0001$); the FM® subjects had almost three times the change in NPRS compared to SPT counterparts (-4.3 ± 2.2 to -1.5 ± 2.4 , $p = 0.0001$).

Conclusions

FM® improves NPRS, GROC, and ODI more than SPT. FM® may provide an effective treatment technique for LBP.

51. CFS/BET**Lifting beliefs****What do physiotherapists and manual handling advisors consider the safest lifting posture, and do back beliefs influence their choice?**

David Nolan Kieran O'Sullivan John Stephenson Peter O'Sullivan Michael Lucock
DOI: <https://doi.org/10.1016/j.msksp.2017.10.010>

Background

It is commonly believed lifting is dangerous and the back should be straight during lifting. These beliefs may arise from healthcare professionals, yet no study has evaluated the lifting and back beliefs of manual handling advisors (MHAs) and physiotherapists (PTs).

Objectives

To evaluate (i) what lifting technique MHAs and PTs perceive as safest, and why, and (ii) the back pain beliefs of MHAs and PTs.

Design

Data was collected via an electronic survey.

Method

Participants selected the safest lifting posture from four options: two with a straight back and two with a more rounded back, with justification. Back beliefs were collected via the Back-Pain Attitudes Questionnaire (Back-PAQ). Relationships were investigated using multiple linear and logistic regression models.

Results

400 PTs and MHAs completed the survey. 75% of PTs and 91% of MHAs chose a straight lifting posture as safest, mostly on the basis that it avoided rounding of the back. MHAs scored significantly higher than PTs on the Back-PAQ instrument (mean difference = 33.9), indicating more negative back beliefs. Those who chose the straight back position had significantly more negative back beliefs (mean 81.9, SD 22.7) than those who chose a round back lift (mean 61.7, SD 21.1).

Conclusion

Avoiding rounding the back while lifting is a common belief in PTs and MHAs, despite the lack of evidence that any specific spinal posture is a risk factor for low back pain. MHAs, and those who perceived a straight back position as safest, had significantly more negative back beliefs.

62 A. NUTRITION/VITAMINS**Vit D and CA****Plasma 25-Hydroxyvitamin D concentrations and risk of incident cancer in adults with hypertension: A nested case control study**

Tengfei Lin Xianhui Qin Xiping Xu
DOI: <https://doi.org/10.1016/j.clnu.2018.10.019>

Background

Evidence from epidemiologic studies on the association of circulating 25-hydroxyvitamin D [25(OH)D] concentrations with the incident risk of cancer has been inconsistent.

Aims

We aimed to investigate the prospective relationship of baseline plasma 25(OH)D concentrations with the risk of cancer, and to examine possible effect modifiers.

Methods

We employed a nested case-control study design, including 231 patients with incident cancer during a median 4.5 years of follow up, and 231 matched controls from the China Stroke Primary Prevention Trial (CSPPT).

Results

The prevalence of plasma 25(OH)D <15, <20 and <30 ng/mL was 23.6%, 47.4% and 85.5%, respectively. Overall, there was an inverse relation between risk of cancer and plasma 25(OH)D. The Odds ratios (95%CI) for participants in the second (15.1-<20.6ng/mL), third (20.6-<26.4ng/mL) and fourth quartiles (\geq 26.4ng/mL) were 0.45 (95%CI: 0.25-0.80), 0.53 (95%CI: 0.27-1.06) and 0.55 (95%CI: 0.27-1.10), respectively, compared with those in quartile 1. Conversely, low 25(OH)D (<15.1ng/mL) concentrations were associated with increased risk of cancer (OR, 2.08; 95%CI: 1.20-3.59) compared to higher concentrations. These associations were consistent across subtypes of cancer. Several potential effect modifiers were identified, including plasma vitamin E concentrations and alcohol intake.

Conclusions

Low plasma 25(OH)D concentrations (<15.1ng/mL) were associated with increased total cancer risk among Chinese hypertensive adults, compared to higher 25(OH)D concentrations. This finding and the possible effect modifiers warrant additional investigation.