

2. LBP

LBP exercise

December 2018 Volume 38, Pages 37–45

The type and pain provoking nature of exercise prescribed for low back pain: A survey of Australian health professionals

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DOI: <https://doi.org/10.1016/j.msksp.2018.09.007>

Highlights

- Vignettes were used to examine how clinicians use exercise for low back pain (LBP).
- Australian physiotherapists and exercise physiologists were surveyed.
- Several exercises were prescribed for LBP, irrespective of pain mechanism/duration.
- Strengthening exercise was prescribed more for chronic, than acute LBP.
- Most clinicians prescribed exercise into pain rather than pain-free exercise for LBP.

Abstract

Objectives

To explore the type of exercise prescribed by Australian health professionals for LBP, and whether the exercises prescribed are pain-free or into pain.

Methods

A survey of physiotherapists and exercise physiologists was conducted from all states/territories in Australia. The survey contained two chronic LBP vignettes with different pain mechanisms (dominant nociceptive or central sensitisation pain) and one acute LBP vignette. Respondents were asked if they would prescribe advice to stay active and exercise. If exercise was prescribed, respondents were asked to specify the type and pain provoking nature (exercise with no pain, exercise to the start of pain, exercise with pain at a tolerable level or exercise irrespective of pain).

Results

The response rate was 17%(218/1276). Most respondents prescribed advice to stay active($\geq 95\%$) and exercise($\geq 90\%$) for all vignettes. Irrespective of the vignette, several exercises were prescribed [aerobic (57–85% of clinicians), motor control (62–84% of clinicians), range of motion (72–75% of clinicians)]. Strengthening exercise was prescribed more for chronic($>60\%$) than acute LBP(23%). Irrespective of the exercise, between 20 and 25% of respondents prescribed pain-free exercise, between 71 and 79% of respondents prescribed exercise into pain, and $\leq 4\%$ prescribed exercise irrespective of pain for acute and chronic LBP.

Conclusions

Several exercises are prescribed for LBP, irrespective of pain mechanism or duration, with more clinicians prescribing strengthening exercise for chronic than acute LBP. Most clinicians prescribed exercise into pain for acute and chronic LBP, irrespective of the exercise. Further research should determine which exercises are beneficial based on pain mechanism and duration, and whether exercise into pain should be prescribed for LBP.

7. PELVIC ORGANS/WOMAN'S HEALTH

Adolescent pelvic pain during pregnancy

December 2018 Volume 38, Pages 106–112

Factors associated with pain in the pelvic girdle in pregnant adolescents: A case-control study

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DOI: <https://doi.org/10.1016/j.msksp.2018.09.011>

Highlights

- Three factors were associated with pelvic girdle pain in pregnant adolescents.
- Associated factors were menstruation low back pain, hard labor and mental disorder.
- Health professionals should be alert to pregnant adolescents with these factors.

Abstract

Background Due to biological immaturity and unfavorable psychosocial conditions, it is conjectured that teenage pregnancy may be associated with disorders such as pelvic girdle pain. The evidence for risk factors for pelvic girdle pain in pregnant adolescents remains unclear.

Objectives To evaluate the factors associated with pelvic girdle pain related to pregnancy in adolescents.

Design Case-control study.

Method Seventy three pregnant women with presence of pelvic girdle pain (case group) and 331 pregnant women without pelvic girdle pain (control group) aged between 10 and 19 years, with gestational age between 28 and 40 weeks were included.

Results/findings

A logistic regression model was used to identify factors associated with the occurrence of pelvic girdle pain. The following aspects were considered for the model: sociodemographic, anthropometric, gynecological and obstetrical, related to lifestyle, musculoskeletal and psychosocial factors. The results showed that suspected common mental disorder (OR: 2.27; 95% CI: 1.23 to 4.18), low back pain during menstruation (OR: 2.10; 95% CI: 1.16 to 3.80) and strenuous work (OR: 1.95; 95% CI: 1.13 to 3.35) were associated with pelvic girdle pain among pregnant adolescents.

Conclusions

Attention must be given to pregnant adolescents with suspected common mental disorder, low back pain during menstruation and strenuous work in order to ensure referral to the appropriate healthcare professional for early prevention of pelvic girdle pain.

Endometrial CA risk reduced with healthy lifestyle

Am J Epidemiol. 2018 Nov 8. doi: 10.1093/aje/kwy249.

A Healthy Lifestyle Index in Relation to Risk of Endometrial and Ovarian Cancer Among Women in the Women's Health Initiative Study.

Arthur R¹, Brasky TM², Crane TE³, Felix AS⁴, Kaunitz A⁵, Shadyab AH⁶, Qi L⁷, Wassertheil-Smoller S¹, Rohan TE¹.

Lifestyle-related factors influence risk of endometrial and ovarian cancers, but few studies have examined their joint associations with risk of these cancers.

Using multivariable Cox regression models, we assessed the association of a healthy lifestyle index (HLI) - a composite score (range 0-20) involving diet, alcohol consumption, physical activity, body mass index and smoking; higher scores represent healthier behavior) - with risk of endometrial and ovarian cancers among 108,136 postmenopausal women who were recruited in the Women's Health Initiative study between 1993 and 1998. After a median follow-up of 17.9 years, 1,435 endometrial cancer cases and 904 ovarian cancer cases had been ascertained. Women in the highest quintile of the HLI score had a lower risk of overall, Type I, well-differentiated, moderately differentiated, poorly differentiated, and localized endometrial cancer than those in the lowest quintile (HR_{≥q5 vs q1}: 0.61 (95% CI: 0.51,0.72), 0.60 (0.49,0.72), 0.66 (0.46, 0.96), 0.69 (0.52,0.90), 0.49 (0.34,0.72) and 0.61 (0.50,0.74), respectively). The HLI score had a weak positive association with risk of serous ovarian cancer.

Our findings underscore the potential importance of a healthy lifestyle in lowering endometrial cancer risk among postmenopausal women.

Iodine intake and fetal language development

Nutrients. 2018 Sep 9;10(9). pii: E1270. doi: 10.3390/nu10091270.

Maternal Iodine Status is Associated with Offspring Language Skills in Infancy and Toddlerhood.

Markhus MW¹, Dahl L², Moe V³, Abel MH^{4,5}, Brantsæter AL⁶, Øyen J⁷, Meltzer HM⁸, Stormark KM⁹, Graff IE¹⁰, Smith L¹¹, Kjellevoid M¹².

Inadequate iodine status affects the synthesis of the thyroid hormones and may impair brain development in fetal life. The aim of this study was to explore the association between maternal iodine status in pregnancy measured by urinary iodine concentration (UIC) and child neurodevelopment at age 6, 12 and 18 months in a population-based cohort. In total, 1036 families from nine locations in Norway were enrolled in the little in Norway cohort. The present study includes $n = 851$ mother-child pairs with singleton pregnancies, no use of thyroid medication in pregnancy, no severe genetic disorder, data on exposure (UIC) in pregnancy and developmental outcomes (Bayley Scales of Infant and Toddler Development, third edition). Data collection also included general information from questionnaires. We examined associations between UIC (and use of iodine-containing supplements) and repeated measures of developmental outcomes using multivariable mixed models. The median UIC in pregnancy was $78 \mu\text{g/L}$ (IQR $46\text{--}130$), classified as insufficient iodine intake according to the WHO. Eighteen percent reported use of iodine-containing multisupplements. A UIC below ~ 100 was associated with reduced receptive ($p = 0.025$) and expressive language skills ($p = 0.002$), but not with reduced cognitive or fine- and gross motor skills. Maternal use of iodine-containing supplements was associated with lower gross motor skills ($b = -0.18$, 95% CI = $-0.33, -0.03$, $p = 0.02$), but not with the other outcome measures.

conclusion, an insufficient iodine intake in pregnancy, reflected in a UIC below $\sim 100 \mu\text{g/L}$, was associated with lower infant language skills up to 18 months. The use of iodine-containing supplements was not associated with beneficial effects.

Nitro's oxide exposure linked to Autism

Association of Prenatal Exposure to Air Pollution With Autism Spectrum Disorder

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JAMA Pediatr. Published online November 19, 2018. doi:10.1001/jamapediatrics.2018.3101

Question Is prenatal exposure to air pollution a risk factor for autism spectrum disorder?

Findings In this population-based cohort study of 132 256 births, maternal exposure to nitric oxide during pregnancy was associated with increased risk of autism spectrum disorder in offspring.

Meaning Reducing exposures of pregnant women to environmental nitric oxide may be associated with a reduction in autism spectrum disorder incidence in their children.

Abstract

Importance The etiology of autism spectrum disorder (ASD) is poorly understood, but prior studies suggest associations with airborne pollutants.

Objective To evaluate the association between prenatal exposures to airborne pollutants and ASD in a large population-based cohort.

Design, Setting, and Participants This population-based cohort encompassed nearly all births in Metro Vancouver, British Columbia, Canada, from 2004 through 2009, with follow-up through 2014. Children were diagnosed with ASD using a standardized assessment with the Autism Diagnostic Interview–Revised and Autism Diagnostic Observation Schedule. Monthly mean exposures to particulate matter with a diameter less than 2.5 μm (PM_{2.5}), nitric oxide (NO), and nitrogen dioxide (NO₂) at the maternal residence during pregnancy were estimated with temporally adjusted, high-resolution land use regression models. The association between prenatal air pollution exposures and the odds of developing ASD was evaluated using logistic regression adjusted for child sex, birth month, birth year, maternal age, maternal birthplace, and neighborhood-level urbanicity and income band. Data analysis occurred from June 2016 to May 2018.

Exposures Mean monthly concentrations of ambient PM_{2.5}, NO, and NO₂ at the maternal residence during pregnancy, calculated retrospectively using temporally adjusted, high-resolution land use regression models.

Main Outcomes and Measures Autism spectrum disorder diagnoses based on standardized assessment of the Autism Diagnostic Interview–Revised and Autism Diagnostic Observation Schedule. The hypothesis being tested was formulated during data collection.

Results In a cohort of 132 256 births, 1307 children (1.0%) were diagnosed with ASD by the age of 5 years. The final sample size for the PM_{2.5}-adjusted model was 129 439 children, and for NO and NO₂, it was 129 436 children; of these, 1276 (1.0%) were diagnosed with ASD. Adjusted odds ratios for ASD per interquartile range (IQR) were not significant for exposure to PM_{2.5} during pregnancy (1.04 [95% CI, 0.98-1.10] per 1.5 $\mu\text{g}/\text{m}^3$ increase [IQR] in PM_{2.5}) or NO₂ (1.06 [95% CI, 0.99-1.12] per 4.8 ppb [IQR] increase in NO₂) but the odds ratio was significant for NO (1.07 [95% CI, 1.01-1.13] per 10.7 ppb [IQR] increase in NO). Odds ratios for male children were 1.04 (95% CI, 0.98-1.10) for PM_{2.5}; 1.09 (95% CI, 1.02-1.15) for NO; and 1.07 (95% CI, 1.00-1.13) for NO₂. For female children, they were for 1.03 (95% CI, 0.90-1.18) for PM_{2.5}; 0.98 (95% CI, 0.83-1.13) for NO; and 1.00 (95% CI, 0.86-1.16) for NO₂.

Conclusions and Relevance In a population-based birth cohort, we detected an association between exposure to NO and ASD but no significant association with PM_{2.5} and NO₂.

Water intake

JAMA Intern Med. 2018 Nov 1;178(11):1509-1515. doi: 10.1001/jamainternmed.2018.4204.

Effect of Increased Daily Water Intake in Premenopausal Women With Recurrent Urinary Tract Infections: A Randomized Clinical Trial.

Hooton TM¹, Vecchio M², Iroz A², Tack I³, Dornic Q², Seksek I², Lotan Y⁴.

IMPORTANCE:

Increased hydration is often recommended as a preventive measure for women with recurrent cystitis, but supportive data are sparse.

OBJECTIVE:

To assess the efficacy of increased daily water intake on the frequency of recurrent cystitis in premenopausal women.

DESIGN, SETTING, AND PARTICIPANTS:

Randomized, open-label, controlled, 12-month trial at a clinical research center (years 2013-2016). Among 163 healthy women with recurrent cystitis (≥ 3 episodes in past year) drinking less than 1.5 L of fluid daily assessed for eligibility, 23 were excluded and 140 assigned to water or control group. Assessments of daily fluid intake, urinary hydration, and cystitis symptoms were performed at baseline, 6- and 12-month visits, and monthly telephone calls.

INTERVENTIONS:

Participants were randomly assigned to drink, in addition to their usual fluid intake, 1.5 L of water daily (water group) or no additional fluids (control group) for 12 months.

MAIN OUTCOMES AND MEASURES:

Primary outcome measure was frequency of recurrent cystitis over 12 months. Secondary outcomes were number of antimicrobial regimens used, mean time interval between cystitis episodes, and 24-hour urinary hydration measurements.

RESULTS:

The mean (SD) age of the 140 participants was 35.7 (8.4) years, and the mean (SD) number of cystitis episodes in the previous year was 3.3 (0.6). During the 12-month study period, the mean (SD) number of cystitis episodes was 1.7 (95% CI, 1.5-1.8) in the water group compared with 3.2 (95% CI, 3.0-3.4) in the control group, with a difference in means of 1.5 (95% CI, 1.2-1.8; $P < .001$). Overall, there were 327 cystitis episodes, 111 in the water group and 216 in the control group. The mean number of antimicrobial regimens used to treat cystitis episodes was 1.9 (95% CI, 1.7-2.2) and 3.6 (95% CI, 3.3-4.0), respectively, with a difference in means of 1.7 (95% CI, 1.3-2.1; $P < .001$). The mean time interval between cystitis episodes was 142.8 (95% CI, 127.4-160.1) and 84.4 (95% CI, 75.4-94.5) days, respectively, with a difference in means of 58.4 (95% CI, 39.4-77.4; $P < .001$). Between baseline and 12 months, participants in the water group, compared with those in the control group, had increased mean (SD) urine volume (1.4 [0.04] vs 0.1 [0.04] L; $P < .001$) and voids (2.4 [0.2] vs -0.1 [0.2]; $P < .001$) and decreased urine osmolality (-402.8 [19.6] vs -24.0 [19.5] mOsm/kg; $P < .001$).

CONCLUSIONS AND RELEVANCE:

Increased water intake is an effective antimicrobial-sparing strategy to prevent recurrent cystitis in premenopausal women at high risk for recurrence who drink low volumes of fluid daily.

8. VISCERA

Reduction in smoking and lung CA rates

Smoking and lung cancer mortality in the United States from 2015 to 2065: A comparative modeling approach

Annals of Internal Medicine — Jeon J, et al. | November 21, 2018

Given that tobacco control efforts initiated in the United States since the 1960s have resulted in significant decreases in smoking and smoking-related diseases (including lung cancer), researchers conducted this study to estimate reductions in tobacco use and lung cancer mortality from 2015-2065 due to existing efforts to control tobacco.

They developed models using US data on smoking (1964-2015) and lung cancer mortality (1969-2010), with each model estimating lung cancer death by smoking status under the assumption that current trend of smoking reductions would continue into the future. Study participants included US adults aged 30-84 years.

According to results, the age-adjusted mortality rate for lung cancer was projected to decrease by 79% between 2015 and 2065. The finding supports the hypothesis that efforts to control tobacco use will continue to reduce lung cancer rates well into the next half-century.

Fatty liver disease and alcohol use

Effect of alcohol consumption on survival in nonalcoholic fatty liver disease: A national prospective cohort study

Hepatology — Hajifathalian K, et al. | November 20, 2018

Researchers collected data from 1988 to 2010 on participants in the National Health and Nutrition Examination Survey and linked them to the National Death Index to monitor their survival in order to determine the impact of alcohol consumption on survival in patients with nonalcoholic fatty liver disease (NAFLD).

The analysis included 4,568 participants with NAFLD, following the exclusion of participants with the significant use of alcohol, viral hepatitis or increased transferrin saturation.

Modest alcohol consumption is related to a significant decrease in all-cause mortality in patients with NAFLD while drinking ≥ 1.5 drinks per day results in an increase in mortality. The results obtained from the study help to inform the discussion of the potential risks and benefits of alcohol use in NAFLD patients.

12 A. WHIPLASH

Changes with whiplash

December 2018 Volume 38, Pages 23–29

Relationship between neck motion and self-reported pain in patients with whiplash associated disorders during the acute phase

Helios De Rosario María José Vivas María Isabel Sinovas Álvaro Page

DOI: <https://doi.org/10.1016/j.msksp.2018.09.004>

Highlights

- Perceived pain of whiplash associated disorders is related to neck motion measures.
- Range and smoothness of neck flexion are consistently related to pain perception.
- Statistical models estimate pain score changes with clinically insignificant errors.

Abstract

Background

Biomechanical measures quantify motor control and functional deficits in Whiplash Associated Disorders (WAD), but few studies relate those measures to the clinical scales that are routinely used to assess patients. Most studies are limited to chronic neck pain, and report poor to moderate correlations.

Objective

To define a statistical model that relates measures of neck kinematics with clinical scales of neck pain, in WAD patients during the rehabilitation process in the acute phase (less than 3 months since the accident).

Methods

96 WAD patients self-assessed their pain using VAS and NPQ, and passed neck motion tests as part of their rehabilitation program. Four regression models were fitted to analyze the effects of the measured kinematic parameters and subject-specific characteristics on VAS and NPQ. Model errors were compared to minimal clinically significant differences.

Results

Multiple correlation coefficients of the models were between 0.74 and 0.90. More than 66% of that correlation was accounted for by subject-specific factors, and most of the other half by the measured kinematic parameters. Range of motion of flexion-extension and axial rotation, and harmonicity of flexion-extension, were the variables most consistently related to the decrease of pain. The error of the models was within the MCSD in more than 50% of the observations.

Conclusions

Part of the individual progression of pain and pain-related disability in acute WAD patients, as rated by NPQ and VAS, can be mapped to objective kinematic parameters of neck mobility tests, like ranges of motion, velocities, repeatability and harmonicity of movements.

13 C. AIRWAYS/SWALLOWING/SPEECH**OSA and myocardial damage**

J Clin Sleep Med. 2018 Nov 15;14(11):1841-1847. doi: 10.5664/jcsm.7476.

Untreated Obstructive Sleep Apnea Is Associated With Myocardial Injury Independent of Blood Pressure Control in Hypertension.

Lui MMS¹, Tse HF², Mak JCW¹, Lam DCL¹, Chan CWS², Chong PWC¹, Ip MSM¹.

STUDY OBJECTIVES:

Obstructive sleep apnea (OSA) and hypertension are independent risk factors of cardiovascular morbidities. This study aims to investigate the relationship between OSA, blood pressure (BP) control, and myocardial injury in patients with difficult-to-control hypertension.

METHODS:

Patients with hypertension who required three or more medications were prospectively recruited at a tertiary referral center. In-laboratory polysomnography, followed by blood tests for fasting glucose, glycated hemoglobin, lipids, high-sensitivity troponin I (hsTnI), B-type natriuretic peptide (BNP), C-reactive protein, and advanced oxidation protein products were performed. After polysomnography, 24-hour ambulatory BP monitoring was arranged.

RESULTS:

A total of 98 participants were analyzed, with mean age 51 ± 9 years and body mass index 30 ± 5 kg/m². Previously undiagnosed severe OSA (apneahypopnea index [AHI] ≥ 30 events/h) was present in 51 patients (52%). hsTnI was negatively correlated with nocturnal dip in systolic BP ($r = -.205$, $P = .048$). After controlling for confounders, including BP control, AHI and oxygen desaturation index (ODI) were positively correlated with hsTnI ($r = .282$, $P = .009$ and $r = .279$, $P = .010$, respectively) and C-reactive protein ($r = .302$, $P = .005$ and $r = .285$, $P = .008$, respectively), but not with BNP or advanced oxidation protein products. Age, ODI, and loss of nocturnal systolic BP dip were significant determinants of hsTnI level ($\beta = .225$, $P = .022$; $\beta = .293$, $P = .003$; and $\beta = -.215$, $P = .029$; $R^2 = .151$). Age, female sex, 24-hour mean diastolic BP, and metabolic syndrome, but not indices of apnea severity, were predictors of BNP level.

CONCLUSIONS:

Unrecognized severe OSA was common in patients with difficult-to-control hypertension, and OSA severity was associated with myocardial injury, independent of BP control with medications.

14. HEADACHES**CoQ10 helps migraine's**

Acta Neurol Scand. 2018 Nov 14. doi: 10.1111/ane.13051.

Efficacy of Co Q10 as Supplementation for Migraine: A Meta-Analysis.

Zeng Z¹, Li Y², Lu S³, Huang W⁴, Di W⁵.

OBJECTIVES:

Migraine ranks among the most frequent neurological disorders globally. Co-enzyme Q10 (CoQ10) is a nutritional agent that might play a preventative role in migraine. This meta-analysis aimed to investigate the effects of CoQ10 as a supplemental agent in migraine.

SUBJECTS AND METHODS:

Web of Science, PubMed and Cochrane Library were searched for potential articles that assessed the effects of CoQ10 on migraine. Data were extracted by two independent reviewers and analyzed with Revman 5.2 software.

RESULTS:

We included 5 studies with 346 patients (120 pediatric and 226 adult subjects) in the meta-analysis. CoQ10 was comparable with placebo with respect to migraine attacks/month ($P = 0.08$) and migraine severity/day ($P = 0.08$). However, CoQ10 was more effective than placebo in reducing migraine days/month ($P < 0.00001$) and migraine duration ($P = 0.009$).

CONCLUSION:

This is the first study to demonstrate the effects of CoQ10 supplementation on migraine. The results support the use of CoQ10 as a potent therapeutic agent with respect to migraine duration and migraine days per month. Nonetheless, more studies are needed to support the conclusions. This article is protected by copyright. All rights reserved.

22 B. INSTABILITY

How to determine

Arch Orthop Trauma Surg. 2018 Oct 26. doi: 10.1007/s00402-018-3054-2. [

Glenoid and rotator interval dimension in patients older than 40 years after traumatic anterior shoulder dislocation.

Thiesen DM¹, Ernst M², Meyer J², Spiro AS³, Yamamura J², Klatte TO².

INTRODUCTION:

The number of patients above 40 years suffering an anterior shoulder dislocation for the first time has recently increased. This study investigated the role of glenoid version, inclination and rotator interval dimension in patients older than 40 years with an anterior shoulder dislocation. We hypothesize that the rotator interval plays a more important role than the osseous alignment in older patients.

MATERIALS AND METHODS:

Patients aged older than 40 years with a traumatic shoulder dislocation were compared with patients who had undergone magnetic resonance imaging (MRI) for a different reason. The MRIs of 61 dislocation group patients were compared with MRIs of 73 comparison group patients. Two shoulder surgeons measured glenoid version, inclination, height and width, rotator interval (RI) height, base (width) and area. The study and comparison group consisted of 61 patients with a mean age of 59 ± 9 years and 73 patients with a mean age of 57 ± 12 , respectively.

RESULTS:

The mean glenoid version of the dislocation group was $-4.9^\circ \pm 4.4^\circ$ (retroversion) and mean inclination was $9.8^\circ \pm 8^\circ$ (reclination). Mean rotator interval base, height and the rotator interval area was 46 ± 6 mm, 14 ± 5 mm and 33 ± 14 mm², respectively. The comparison group had a mean glenoid version of $-5.4^\circ \pm 5.4^\circ$ and a mean inclination of $10.8^\circ \pm 6.2^\circ$. The rotator interval base was 41 ± 6 mm, the height was 16 ± 4 mm and the area was 34 ± 11 mm². The between-group differences were statistically significant for rotator interval height and base ($p < 0.0001$). A significant difference was revealed for the height-width ratio of the glenoid ($p = 0.0001$).

CONCLUSIONS:

In patients older than 40 years who have suffered anterior shoulder dislocation, the shape of the glenoid rather than its spatial position is of significance. A wide and high rotator interval promotes anterior shoulder dislocation in these patients.

Surgical interventions

Arthroscopy. 2018 Sep;34(9):2530-2536. doi: 10.1016/j.arthro.2018.03.032.

Risk Factors for Recurrence of Anterior-Inferior Instability of the Shoulder After Arthroscopic Bankart Repair in Patients Younger Than 30 Years.

Lee SH¹, Lim KH¹, Kim JW².

PURPOSE:

To identify the risk factors for recurrent instability after arthroscopic Bankart repair and evaluate the recurrence rate and functional outcomes.

METHODS:

A retrospective review was performed of patients with anterior-inferior shoulder instability who underwent arthroscopic Bankart repair between 2008 and 2014. Patients below 30 years of age who were available for follow-up at least for 2 years were sorted into 2 groups according to the presence of recurrent instability. Furthermore, statistical analysis by binary logistic regression analysis included the significance of various risk factors including gender, demographic factors, number of preoperative dislocations, time interval between the first dislocation and the surgery (shorter than 6 months or not), generalized hyperlaxity, concomitant injury, bony Bankart, and off-track lesion. The functional outcomes were assessed with the Rowe and Walch-Duplay scores.

RESULTS:

A total of 170 shoulders were included (without-recurrence group: 138, recurrent group: 32). The overall postoperative recurrent instability rate was 18.8%. SLAP repair, interval closure, and capsular plication were performed when necessary. However, these additional procedures were not influenced by recurrence ($P = .37$). The 2 groups showed significant differences in the number of preoperative dislocations ($P = .048$; adjusted odds ratio [OR] 2-5 times, 6.41; more than 5 times, 8.77), time interval between the first dislocation and surgery ($P = .003$, adjusted OR 5.62), and off-track Hill-Sachs lesion ($P = .04$, adjusted OR 4.31). There was significant improvement in the mean Rowe and Walch-Duplay scores at 2 years postoperatively ($P < .001$ in both cases), but the mean scores were lower in the group with recurrence than in the group without ($P = .021$ and $.014$, respectively).

CONCLUSIONS:

The overall results suggest that surgery within 6 months of the first dislocation should be considered, with meticulous attention in patients with a high number of preoperative dislocations or off-track Hill-Sachs lesions.

LEVEL OF EVIDENCE:

Level III, retrospective case-control study.

27. HIP

Ankylosing spondylitis and hip mechanics

[December 2018](#) Volume 38, Pages 8–14

Cross-correlation between spine and hip joint kinematics differs in healthy individuals and subgroups of ankylosing spondylitis patients during trunk lateral flexion

Shin-Tsu Chang Kuo-Lung Lai Fang-Chuan Kuo Yu-San Kao

DOI: <https://doi.org/10.1016/j.msksp.2018.09.001>

Highlights

- This study evaluated the effect of AS severity on multiple-joint kinematics.
- The syndesmophyte group has narrow range of motion in spine and hip.
- The CCF between lumbar and hip joint in AS patients differs to healthy individuals.
- LLF occurred earlier than hip abduction and rotation during trunk lateral flexion.
- AS patients had longer time lags of lumbar-hip synergy than the control group.

Abstract

Background

The effects of sacroiliitis and syndesmophyte formation on the cross-correlation between spine and hip joint kinematics in ankylosing spondylitis (AS) are poorly understood.

Objective

To investigate the cross-correlation between spine and hip joint kinematics differs in healthy individuals and ankylosing spondylitis patients during trunk lateral flexion.

Methods

Fifty AS patients and thirty-nine healthy adults (controls) were recruited from a medical center. The patients were divided into two subgroups, namely the sacroiliitis (n = 28) and syndesmophyte (n = 22) subgroups. An inertial motion system was used to record kinematic data of spine, pelvic and hip joints during lateral trunk flexion. The maximal cross-correlation coefficient (CCF) and time lag of motion between the spine and hip joint were analyzed.

Results

The syndesmophyte group had the smallest range of motion in all recorded motion. The sacroiliitis group exhibited higher thoracic flexion, pelvic pitch, and pelvic rotation than the other two groups. In the syndesmophyte group, the CCF between lumbar lateral flexion (LLF) and hip abduction were weakly and LLF and hip rotation were strongly correlated. Considering in time sequence, LLF occurred earlier than hip abduction and hip rotation during trunk lateral flexion; however, both AS subgroups exhibited longer time lags than in the control group.

Conclusion

The cross-correlation between spine and hip joint kinematics differs in healthy individuals and AS patients during trunk lateral flexion. The motion pattern changes in patients with AS of differing severity may also alter the loads on the spine and hip joints.

33. MENISCUS

Adverse events

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

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

Since published clinical trial evidence over the past 6 years has raised questions about the efficacy of arthroscopic partial meniscectomy in some patients and there are concerns about possible overuse, researchers ascertained the true risk of serious complications following arthroscopic partial meniscectomy. They found the risk for complications was low for those undergoing arthroscopic partial meniscectomy. However, the procedure was related to some rare but serious complications (including pulmonary embolism and infection), and no decline in the risks has been seen over time.

Methods

- Excluding simultaneous or staged (within 6 months) bilateral cases, researchers analyzed national Hospital Episode Statistics data for all arthroscopic partial meniscectomies done in England between April 1, 1997, and March 31, 2017.
- They identified complications developing in the 90 days following the index procedure.
- The occurrence of at least one serious complication within 90 days (which was defined as either myocardial infarction, stroke, pulmonary embolism, infection requiring surgery, fasciotomy, neurovascular injury, or death) was the primary outcome.
- They determined factors associated with complications by using logistic regression modelling and, when possible, compared risk with general population data.

Results

- For analysis, 699,965 were eligible out of 1,088,782 arthroscopic partial meniscectomies performed.
- They noted the occurrence of serious complications within 90 days in 2,218 (0.317% [95% CI 0.304–0.330]) cases, including 546 pulmonary embolisms (0.078% [95% CI 0.072–0.085]) and 944 infections necessitating further surgery (0.135% [95% CI 0.126–0.144]).
- They observed an increased risk of serious complications in relation to increasing age (adjusted odds ratio [OR] 1.247 per decade [95% CI 1.208–1.288]) and modified Charlson comorbidity index (adjusted OR 1.860 per 10 units [95% CI 1.708–2.042]).
- Findings showed a reduced risk of serious complications in relation to female sex (adjusted OR 0.640 [95% CI 0.580–0.705]).
- A fall in the risk of mortality was also observed over time (adjusted OR 0.965 per year [95% CI 0.937–0.994]).
- A less frequent occurrence of mortality, myocardial infarction, and stroke was observed in the study cohort vs in the general population.
- No change was observed in the risks of infection and pulmonary embolism during the study, and these were found to be remarkably higher in the study cohort vs in the general population.
- They could prevent one pulmonary embolism for every 1,390 (95% CI 1,272–1,532) fewer knee arthroscopies done.
- Results showed that, for every 749 (95% CI 704–801) fewer procedures done, one native knee joint infection could be prevented.

37. OSTEOARTHRITIS/KNEE**Impact of****Prevalence and treatment of hip and knee osteoarthritis in people aged 60 years or older in Germany: an analysis based on health insurance claims data**

Authors Postler A, Luque Ramos A, Goronzy J, Günther K-P, Lange T, Schmitt J, Zink A, Hoffmann F

DOI <https://doi.org/10.2147/CIA.S174741>

Objective: Osteoarthritis (OA) is highly prevalent throughout the world, especially in the elderly population, and is strongly associated with patients' frailty. However, little is known about the prevalence and treatment of OA in elderly patients in routine clinical care in Germany.

Materials and methods: As a part of Linking Patient-Reported Outcomes with CLAIMS Data for Health Services Research in Rheumatology (PROCLAIR), a cross-sectional study using claims data from a large Germany statutory health insurance (BARMER) was conducted. We included people aged 60 years or older and assessed the prevalence of OA of the hip or knee, defined as having outpatient diagnoses (ICD: M16 or M17) in at least two quarters of 2014. The use of conservative treatment, including analgesics and physical therapy, and total joint replacement was studied. Analyses were stratified by age, sex, comorbidities, and level of care dependency defined by social law.

Results: A total of 595,754 patients (mean age: 74.9 years; 69.8% female) were diagnosed with OA (21.8%), with the highest prevalence in those between 80 and 89 years (31.0%) and in females compared to males (23.9% vs 18.3%). Prevalence decreased with increasing level of care dependency from 30.5% in patients with a low level (0/1) to 18.7% in the highest level of care dependency. A total of 63.4% of the patients with OA received analgesics, with higher use with increasing age. Physical therapy was prescribed to 43.1% of the patients, but use decreased with age. In all, 5.3% of the patients received total joint replacement in 2014.

Conclusion: The lower frequency of coded OA with increasing level of care dependency may reflect under diagnosis, and patients with many other medical problems seem to be at risk for inadequate recognition and treatment of their OA.

45 A. MANUAL THERAPY LUMBAR & GENERAL**Directional preference**

December 2018 Volume 38, Pages 53–62

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

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

Highlights

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

Abstract**Background**

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

Objective

To update the previous systematic review.

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

Method

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


Results

Forty-three additional relevant articles were found. The quality of the studies, using PEDro for randomized controlled trials, was moderate or high in six out of ten RCTs; moderate or high in six out of 12 cohort studies. Prevalence of centralization was 40%, the same as the previous review. Directional preference without Centralization was 26%; thus Centralization and directional preference combined was 66%, which was very similar to the previous review. Neither clinical response was recorded in about a third of patients. Centralization and directional preference were confirmed as key positive prognostic factors, certainly in patients with low back pain, but limited evidence for patients with neck pain. There was no evidence that these might be important treatment effect modifiers. One study evaluated reliability, and found generally poor levels, despite training.

Conclusions

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

Lumbar centralization in LBP

Initial pain and disability characteristics can assist the prediction of the centralization phenomenon on initial assessment of patients with low back painAlon Rabin , Yaniv Shmushkevich & Leonid Kalichman

- <https://doi.org/10.1080/10669817.2018.1542560>

Objectives: Determine whether the achievement of the centralization phenomenon on initial assessment of patients with low back pain (LBP) can be predicted by history and physical examination variables.

Methods: Ninety patients referred to physical therapy due to LBP completed pain, disability, and fear-avoidance questionnaires, followed by a complete history and a physical examination based on mechanical diagnosis and therapy principles. Patients were subsequently classified as centralizers or noncentralizers. Univariate, followed by multivariate analysis was performed to identify history and physical examination variables that predicted the occurrence of the CP. Factors retained in the multivariate analysis were used to develop a clinical prediction rule (CPR).

Results: Twenty-eight patients (31%) were classified as centralizers immediately following assessment. Three predictors were retained in the multivariate analysis: (1) modified Oswestry Disability Index score lower than 33%; (2) intensity of the most distal symptom lower than 6/10; and (3) back pain equal to or greater than leg pain. The resultant CPR indicated the presence of all three variables increased the post-test likelihood of the CP to 57%.

Discussion: The findings of this study suggest the CP may be considerably more likely in less severe cases of LBP characterized by lower disability, lower intensity of distal symptoms, and a greater back-versus-leg pain intensity. Pending future validation, the CPR developed in this study may aide decision making regarding the initial management strategy of patients with LBP.

KEYWORDS: Low back pain, mechanical diagnosis and therapy, centralization phenomenon

Unilateral PA mobs effect on lumbar and hamstring range

Time-course changes associated with PA lumbar mobilizations on lumbar and hamstring range of motion: a randomized controlled crossover trialPaul Chesterton , William Evans , Nick Livadas  & Shaun J. McLaren 

- <https://doi.org/10.1080/10669817.2018.1542558>

Objective: We aimed to compare the post-intervention time-course changes in active knee extension (AKE) and active lumbar flexion (ALF) range of motion in response to unilateral posterior–anterior (UPA) mobilizations of the lumbar spine (L4/5 zygapophyseal).

Methods: Twenty-four asymptomatic participants (maleness: 0.58, age [mean \pm standard deviation]: 32 ± 8 years, body mass index 25.9 ± 2.6 kg m²) were recruited to a fully controlled crossover trial. Following either the intervention (L4/5 zygapophyseal mobilizations) or control, participants immediately performed the AKE and ALF tests, which were also performed at baseline. Subsequent tests were made at intervals of 5, 10, 15, 20, 25, 30, 45 and 60 min.

Results: After adjustment for baseline (mean AKE: 37.2° from full extension, mean ALF: 14.37 cm), sex and age, UPA lumbar mobilizations had a most likely moderate effect on AKE (9.8° closer to full extension; ± 1.9) and a likely moderate effect on ALF (1.34 cm; $\pm 90\%$ confidence limits 0.43). The magnitude of the AKE effect became most likely small 20-min posttreatment (5.3; ± 1.7) and possibly small/possibly trivial 60-min posttreatment (2.1; ± 1.4). For ALF, the magnitude of the effect became most likely small 15-min posttreatment (0.76; ± 0.25), possibly small/possibly trivial 25-min posttreatment (0.38; ± 0.18) and likely trivial 60-min posttreatment (0.26; ± 1.8).

Discussion: UPA lumbar mobilizations increased lumbar Range of Motion and hamstring extensibility by a moderate magnitude, with the effect reducing after 10–20-min posttreatment. Clinicians should consider these time-course changes when applying UPA lumbar mobilizations.

Clinical Trials Registry: NCT03273400

Evidence Level: 2b

45 B. MANUAL THERAPY CERVICAL**Mobilization improves ROM**

December 2018 Volume 38, Pages 83–90

Immediate effects of cervical mobilizations on global perceived effect, movement associated pain and neck kinematics in patients with non-specific neck pain. A double blind placebo randomised controlled trial

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Duncan J. Critchley

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Highlights

- Cervical mobilisations are effective in reducing symptoms in patients with neck pain.
- Improved range of movement should only be expected in patients with restricted movement.
- The effects of mobilisations are, to some extent, mediated by a placebo effect.

Abstract

Background Neck pain is prevalent, costly and disabling. Cervical mobilisations are frequently used to treat it but their effectiveness has been questioned by several systematic reviews. Evidence suggests that better outcomes are achieved with mobilisations when they are applied to specific patient subgroups. A criteria for patients suitable for neck mobilisations has been proposed, but the effectiveness on this patient subgroup has not been tested.

Objective To assess the effectiveness of cervical mobilisations applied to a subgroup of patients with neck pain who fulfil specific criteria.

Design Randomised controlled trial.

Method 40 patients with neck pain attending a Physiotherapy clinic were recruited and randomised to a single session of either cervical mobilisations or motionless manual contact placebo. The immediate effects on global perceived effect, range of movement (ROM), movement velocity and movement associated pain were assessed.

Results mobilisation participants reported significantly better global perceived effect ($p < 0.001$) and improvements in movement associated pain ($p = 0.041$). Mobilisations produced a significant increase in ROM in side flexion ($p = 0.006$) and rotation ($p = 0.044$) when compared with placebo, but only in patients with pre-intervention ROM restriction. 29–47% of all movement associated pains were resolved following mobilisations and 11–27% following placebo. Patients in both groups showed a significant ($p < 0.05$) increase in movement velocity, but only in those who had a velocity restriction pre-intervention.

Conclusions Cervical mobilisations are effective in improving movement-associated pain, increasing ROM and velocity, and patient perceived improvement when applied to patients with neck pain that fulfil a criteria. Their use should be advocated.

Alar ligament tests

Diagnostic accuracy and validity of three manual examination tests to identify alar ligament lesions: results of a blinded case-control study

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- <https://doi.org/10.1080/10669817.2018.1539434>

Introduction: Tests to evaluate the integrity of the alar ligaments are important clinical tools for manual therapists, but there is limited research regarding their validity.

Method: A single blinded examiner assessed alar ligament integrity using the lateral shear test (LST), rotation stress test (RST) and side-bending stress test (SBST) on a sample of convenience comprising 7 subjects with MRI confirmed alar ligament lesions and 11 healthy people. Alar ligament lesions were identified using both supine and high-field strength upright MRI.

Results: The RST had a sensitivity of 80% and a specificity of 69.2%. The SBST and the LST both showed a sensitivity of 80% and a specificity of 76.9%. In cases where all three tests were positive, the specificity increased to 84.6%.

Discussion: Tests of manual examination of alar ligament integrity have some diagnostic utility; however, these findings require further corroboration in a larger sample.

KEYWORDS: Alar ligaments, clinical tests, validity – MRI

48 A. STM

Friction Massage improves elbow function

Immediate improvements of supination range of motion and strength following pronator teres muscle friction massage: a clinical trial comparing people with and without supination limited motion

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- <https://doi.org/10.1080/10669817.2018.1542559>

Objectives: To investigate the effects of friction massage techniques on the pronator teres muscle on supination range of motion (ROM) and supinator strength in individuals with and without limited supination ROM.

Methods: In total, 26 subjects (13 with limited supination ROM and 13 healthy subjects) volunteered to participate in this study. We used a customized wrist cuff. Supination ROM and supinator strength were measured with a 9-axis inertial motion sensor and load cell. The friction massage protocol was executed with the pronator teres muscle in a relaxed position. Then supination ROM and supinator strength were measured again.

Results: There was no significant interaction effect on supination ROM, which was significantly greater in the limited supination and control groups. A post hoc *t*-test revealed that the limited supination group achieved a significantly increased post-test supination ROM ($51.7 \pm 7.8^\circ$) compared to the pre-test value ($43.6 \pm 5.2^\circ$). In addition, the control group achieved a significant increase in post-test supination ROM ($67.7 \pm 10.0^\circ$) compared to the pre-test value ($61.4 \pm 7.7^\circ$). There was no significant interaction effect on supinator strength. Supinator strength was significantly greater in the limited supination and control groups. A post hoc *t*-test revealed a significant difference in supinator strength between the pre- and post-test values in the limited supination group.

Discussion: Friction massage helps restore a limited ROM of the forearm supination motion and immediately increases supinator muscle strength. This technique can be used as an intervention method to improve muscle strength in patients with limited supination ROM.

KEYWORDS: Biceps brachii, forearm movement, friction massage, pronator teres, pronator syndrome, soft tissue, supination range of motion, supinator strength

62 A. NUTRITION/VITAMINS**Dark roast coffee protects DNA**

European Journal of Nutrition pp 1–8|

Consumption of a dark roast coffee blend reduces DNA damage in humans: results from a 4-week randomised controlled study

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Miroslava Lehotska Mikusova Zora Krivosikova
Katarina Rausova Andrew Collins Vaineta Vebraitė Katarina Volkovova Eva Rollerova
Magdalena Barancokova Sergey Shaposhnikov

Purpose

To determine the DNA protective effects of a standard coffee beverage in comparison to water consumption.

Methods

The single-blind, randomised controlled study with parallel design included healthy women ($n = 50$) and men ($n = 50$) recruited from the general Central European population. The subjects were randomised in a coffee and a control group, with stratification for sex and body mass index. The study comprised two periods of 4 weeks: a preconditioning period, with daily consumption of at least 500 ml water but no coffee, nor tea, nor any other caffeine-containing product. During the subsequent intervention period the coffee group consumed 500 ml of freshly brewed dark roast coffee blend per day, the control group consumed water instead. On the last day of each period, blood was drawn and analysed by comet assay (single-cell gel electrophoresis) to assess the level of DNA damage (strand breakage).

Results

At the end of the intervention period the mean level of DNA strand breaks in the coffee group has decreased in comparison to the control group [difference in means 0.23% TI (tail intensity), $p = 0.028$]. The mean change from baseline (delta value) was -23% in the coffee group ($p = 0.0012$). Effects of coffee intake were similar for men and women. During intervention, neither group showed any significant change in body weight or calorie intake.

Conclusions

Our results indicate that regular consumption of a dark roast coffee blend has a beneficial protective effect on human DNA integrity in both, men and women.