

7. PELVIC ORGANS/WOMAN'S HEALTH

Height and breast CA risk

Research Article

Associations of adult-attained height and early life energy restriction with postmenopausal breast cancer risk according to estrogen and progesterone receptor status

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<https://doi.org/10.1002/ijc.31890>

Adult-attained height is a marker for underlying mechanisms, such as cell growth, that may also influence postmenopausal breast cancer (BC) risk, perhaps specifically hormone-sensitive BC subtypes. Early life energy restriction may inhibit these mechanisms, resulting in shorter height and a reduced postmenopausal BC risk. 62,573 women from the Netherlands Cohort Study, 55-69 years old, completed a self-administered questionnaire in 1986, and were followed-up for 20.3 years (case-cohort: $N_{\text{subcohort}}=2438$; $N_{\text{cases}}=3354$). Cox multivariable-adjusted hazard ratios (HR) and 95% confidence intervals (CI) were estimated for BC risk overall and by estrogen and progesterone receptor subtypes in relation to height and early life energy restriction during the Hunger Winter, War Years, and Economic Depression. Although energy restriction can only influence longitudinal growth in women exposed before and/or during the growth spurt, it may also influence BC risk when occurring after the growth spurt, possibly through different growth processes. Therefore, Cox analyses were additionally conducted according to timing of energy restriction in relation to the growth spurt.

Height was associated with an increased BC risk ($HR_{\text{per } 5\text{cm}}=1.07$, 95%CI:1.01–1.13), particularly hormone receptor-positive BC. Energy restriction before and/or during the growth spurt was associated with a decreased hormone receptor-positive BC risk. Energy restriction during the Hunger Winter increased the estrogen receptor-negative BC risk regardless of the timing of energy restriction. In conclusion, Height and energy restriction before and/or during the growth spurt were both associated with hormone receptor-positive BC risk, in the direction as expected, indicating critical exposure windows for hormonal growth-related mechanisms.

Predictors of libido changes in menopausal women**Predictors of decreased libido in women during the late reproductive years**

Gracia, Clarisa R., MD^{1,3}; Sammel, Mary D., ScD⁴; Freeman, Ellen W., PhD^{1,2}; Liu, Li, MD, MS⁵; Hollander, Lori, BA⁵; Nelson, Deborah B., PhD⁴

Menopause: November 2018 - Volume 25 - Issue 11 - p 1238–1243

doi: 10.1097/GME.0000000000001225

Objective: To identify risk factors for decreased libido among women in the late reproductive years.

Design: Prospective cohort. Women aged 35 to 47 years identified through random digit dialing were prospectively followed for 4 years with serial hormone assays and standardized questionnaires. Mean hormone values, hormone trends over 4 years, and fluctuation in hormone levels were compared among women with and without a decrease in libido at the last assessment period. Total testosterone, dihydroepiandrosterone sulfate, estradiol, follicle-stimulating hormone, luteinizing hormone, body mass index, psychosocial, and socioeconomic variables were evaluated using multivariable logistic regression.

Results: Of 326 women, 87 (27%) reported a decreased libido, whereas 239 (73%) did not. Participant-specific means for all hormone levels over the study period were similar among both groups. However, total testosterone fluctuation over the study was significantly different between groups. Women whose testosterone levels fluctuated from 3.8 to 21.5 ng/dL around a mean value of 9 ng/dL were four times more likely to report decreased libido compared with women with little fluctuation in testosterone [odds ratio (OR) 4.0; 95% CI, 1.6-10.0]. Depression (OR 3.4; 95% CI, 1.9-6.1), vaginal dryness (OR 3.5; 95% CI, 1.8-6.6), and children living at home (OR 1.4; 95% CI, 1.1-1.7) were also independently associated with decreased libido.

Conclusions: Decreased libido in the late reproductive years is associated with a pronounced fluctuation in total testosterone over time. Other independent risk factors for decreased libido include vaginal dryness, depression, and living with children. Sexual dysfunction is a complex disorder, related to physiological and psychosocial factors, requiring further investigation.

Maternal use of caffeine determined not to be healthy for fetus

Am J Clin Nutr. 2018 Oct 19. doi: 10.1093/ajcn/nqy219.

Associations of maternal caffeine intake with birth outcomes: results from the Lifeways Cross Generation Cohort Study.

Chen LW¹, Fitzgerald R², Murrin CM¹, Mehegan J¹, Kelleher CC¹, Phillips CM¹; Lifeways Cross Generation Cohort Study.

BACKGROUND:

Maternal caffeine intake is associated with adverse birth outcomes, but in most studies the primary caffeine source is coffee; the influence of tea caffeine remains unclear.

OBJECTIVE:

The aim of the study was to examine the association between maternal caffeine intake and birth outcomes in a population with tea as the predominant caffeine source.

DESIGN:

Data from 941 Irish mother-child pairs of the Lifeways Cross Generation Cohort Study were examined. Maternal dietary intakes in early pregnancy were assessed using a validated food-frequency questionnaire. Caffeine intake was derived from coffee, tea, soft drinks, and cocoa-containing foods and beverages. Associations of maternal caffeine intake with continuous (birth weight, birth length, and gestational age) and binary [low birth weight (LBW) (<2500 g) and preterm birth (PB) (<37 wk gestational age)] birth outcomes were investigated using multiple linear and logistic regressions, respectively, with adjustment for potential confounders.

RESULTS:

Tea was the predominant caffeine source (48%), followed by coffee (39%). In the fully adjusted model, maternal caffeine intake was associated with lower birth weight [β (95% CI): -71.9 (-105.4, -38.4) g · 100 mg⁻¹ · d⁻¹ caffeine increment], shorter birth length [-0.30 (-0.49, -0.11) cm], smaller head circumference [-0.12 (-0.24, -0.01) cm], and shorter gestational age [-0.13 (-0.25, -0.02) wk]; higher risks for LBW [OR (95% CI): 1.47 (1.14, 1.90)] and PB [1.36 (1.07, 1.74)] were also observed (all P < 0.05). The associations were robust to the exclusion of participants with pregnancy complications and in never smokers. Similar higher risks of adverse birth outcomes were observed for the highest caffeine intake categories from coffee [ORLBW: 3.10 (1.08, 8.89); ORPB: 2.74 (1.05, 7.16)] and tea [ORLBW: 2.47 (1.02, 6.01); ORPB: 2.56 (1.14, 5.75)], compared with the lowest intake categories (all P < 0.05).

CONCLUSIONS:

Maternal caffeine intake from both coffee and tea is associated with adverse birth outcomes. This prospective observational study was registered at ISRCTN Registry as ISRCTN16537904.

8. VISCERA

Occasion cigarette smoking still affects mortality

Non-Daily Cigarette Smokers: Mortality Risks in the U.S.

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DOI: <https://doi.org/10.1016/j.amepre.2018.06.025>

Introduction

Worldwide, an estimated 189 million adults smoke tobacco “occasionally” but not every day. Yet few studies have examined the health risks of non-daily smoking.

Methods

Data from the 1991, 1992, and 1995 U.S. National Health Interview Surveys, a nationally representative sample of 70,913 U.S. adults (aged 18–95 years) were pooled. Hazard ratios and 95% CIs for death through 2011 were estimated from Cox proportional hazards regression using age as the underlying time metric and stratified by 5-year birth cohorts in 2017.

Results

Non-daily smokers reported smoking a median of 15 days and 50 cigarettes per month in contrast to daily smokers who smoked a median of 600 cigarettes per month. Compared with never smokers, lifelong nondaily smokers who had never smoked daily had a 72% higher mortality risk (95% CI=1.36, 2.18): higher risks were observed for cancer, heart disease, and respiratory disease mortalities. Higher mortality risks were observed among lifelong non-daily smokers who reported 11–30 (hazard ratio=1.34, 95% CI=0.81, 2.20); 31–60 (hazard ratio=2.02, 95% CI=1.17, 3.29); and >60 cigarettes per month (hazard ratio=1.74, 95% CI=1.12, 2.72) than never smokers. Median life-expectancy was about 5 years shorter for lifelong non-daily smokers than never smokers. As expected, daily smokers had even higher mortality risks (hazard ratio=2.50, 95% CI=2.35, 2.66) and shorter survival (10 years less).

Conclusions

Although the mortality risks of non-daily smokers are lower than daily smokers, they are still substantial. Policies should be specifically directed at this growing group of smokers.

Psoriasis and IBS

Journal Summaries in Family Medicine

Association of psoriasis with inflammatory bowel disease: A systematic review and meta-analysis

JAMA Dermatology

Fu Y, et al. | October 25, 2018

Researchers gauged the relationship of psoriasis with inflammatory bowel disease (IBD). Results demonstrated a significant association of psoriasis with IBD. Probable indication of gastroenterology consultation was suggested when patients with psoriasis present with bowel symptoms.

Methods

- Researchers conducted a systematic review and meta-analysis and searched MEDLINE, Embase, and the Cochrane Central Register of Controlled Trials for relevant studies from inception to January 17, 2018.
- They included the case-control, cross-sectional, or cohort studies that examined either the odds or risk of IBD in patients with psoriasis.
- They did not use any geographic or language limitations in the search.
- They followed PRISMA and MOOSE guidelines for data extraction.
- In order to assess the risk of bias of included studies, the Newcastle-Ottawa Scale was used.
- Authors separately analyzed Crohn disease and ulcerative colitis and conducted random-effects model meta-analysis.
- They performed a subgroup analysis on psoriatic arthritis.
- Main outcomes and measures included the risk and odds of IBD, Crohn disease, and ulcerative colitis in patients with psoriasis.

Results

- As per data, they included a total of 5 case-control or cross-sectional studies and 4 cohort studies with 7,794,087 study participants.
- Psoriasis and Crohn disease (odds ratio, 1.70; 95% CI, 1.20-2.40) and psoriasis and ulcerative colitis (odds ratio, 1.75; 95% CI, 1.49-2.05) were significantly associated.
- An increased risk of Crohn disease (risk ratio, 2.53; 95% CI, 1.65-3.89) and ulcerative colitis (risk ratio, 1.71; 95% CI, 1.55-1.89) was seen in the patients with psoriasis

13 B. TMJ/ORAL

Dry needling and TMJ

Cranio. 2018 Oct 9:1-7. doi: 10.1080/08869634.2018.1526848

Efficacy of dry needling in patients with myofascial temporomandibular disorders related to the masseter muscle.

Özden MC PhD¹, Atalay B DDS, MSc, PhD¹, Özden AV DDS, PhD², Çankaya AB DDS, PhD¹, Kolay E PhD³, Yıldırım S DDS, PhD¹.

OBJECTIVE:

This randomized, single-center clinical trial aimed to compare the efficacy of superficial dry needling (SDN) and deep dry needling (DDN) in patients with myofascial temporomandibular disorder (MTMD) related to the masseter muscle.

METHODS:

Forty patients showing MTMD with trigger points in the masseter muscle were randomly assigned to groups. Dry needling of the masseter muscle was performed once per week for three weeks. Pressure pain threshold (PPT) measurements, visual analog scale scores, and maximal jaw opening were assessed.

RESULTS:

Both patient groups showed significant pain reduction, but the SDN group showed significantly better pain reduction. The PPT measurements obtained in the follow-up examinations at three and six weeks were significantly better than the values in SDN and DDN groups.

DISCUSSION:

SDN showed better pain-reduction efficacy in patients with MTMD. Further research with a larger size sample and a longer follow-up period will help elucidate the benefits of SDN.

Oral health and BP

Poor Oral Health and Blood Pressure Control Among US Hypertensive Adults

Results From the National Health and Nutrition Examination Survey 2009 to 2014
Hypertension — Pietropaoli D, et al. | October 23, 2018

**Davide Pietropaoli Rita Del Pinto Claudio Ferri Jackson T. Wright Mario Giannoni
Eleonora Ortu Annalisa Monaco**

Originally published 22 Oct 2018 Hypertension. 2018;0:HYPERTENSIONAHA.118.11528

Abstract

Periodontal disease is a chronic inflammatory disorder of the tissues surrounding the teeth, with evidence of systemic effects.

Some studies showed the benefit of periodontal therapy on blood pressure (BP), but the impact of periodontitis on BP control is unknown. We retrospectively analyzed cross-sectional, nationally representative data from treated hypertensive adults aged ≥ 30 years with and without periodontitis. BP was examined as both continuous (mm Hg) and categorical (treatment goal achievement status according to guidelines: at goal and above goal) variable according to the presence or absence of periodontitis and its clinical parameters (probing depth, clinical attachment loss, and disease severity [mild, moderate, and severe]). Systolic BP means and odds ratios for uncontrolled BP according to the presence and severity of periodontitis were calculated using progressively adjusted models. Among treated hypertensive adults, mean systolic BP was about 2.3 to 3 mm Hg higher in the presence of periodontitis ($P < 0.0001$). Periodontitis was associated with unsuccessful antihypertensive treatment after multiple adjustments, with higher odds by disease severity.

A good periodontal health is associated with better systolic BP profile during antihypertensive therapy by about 2.3 to 3 mm Hg and with lower odds of antihypertensive treatment failure. Dedicated studies are needed to test the impact of periodontal therapy on BP and the long-term effects on cardiovascular outcomes of this complementary approach to systemic health.

Periodontal and cognitive decline

Journal Summaries in Internal Medicine

Periodontitis, periodontal inflammation, and mild cognitive impairment: A 5-year cohort study

Journal of Periodontal Research

Iwasaki M, et al. | October 23, 2018

Experts conducted a 5-year longitudinal study to explore the relationship between mild cognitive impairment (MCI), periodontitis, periodontal inflammation in older adults. To define severe periodontitis, they used case definitions provided by the European Workshop in Periodontology Group C and the Centers for Disease Control/American Academy of Periodontology.

Findings suggested an association of severe periodontitis and periodontal inflammation with incident MCI among older community-dwelling men and women. They also noted an association of periodontal inflammation assessed by periodontal inflamed surface area with higher odds ratios for MCI.

34. PATELLA**Isometric and isotonic tendon changes**

Am J Phys Med Rehabil. 2018 Oct;97(10):708-714. doi: 10.1097/PHM.0000000000000951.

Clinical Improvements Are Not Explained by Changes in Tendon Structure on Ultrasound Tissue Characterization After an Exercise Program for Patellar Tendinopathy.

van Ark M¹, Rio E, Cook J, van den Akker-Scheek I, Gaida JE, Zwerver J, Docking S.

OBJECTIVES:

The aim of this study was to investigate the effects of a 4-wk in-season exercise program of isometric or isotonic exercises on tendon structure and dimensions as quantified by ultrasound tissue characterization (UTC).

DESIGN:

This was a randomized clinical trial. Volleyball and basketball players (16-31 yrs, n = 29) with clinically diagnosed patellar tendinopathy were randomized to a 4-wk isometric or isotonic exercise program. The programs were designed to decrease patellar tendon pain. A baseline and 4-wk UTC scan was used to evaluate change in tendon structure.

RESULTS:

No significant change in tendon structure or dimensions on UTC was detected after the exercise program despite patellar tendinopathy symptoms improving. The percentage and mean cross-sectional area of aligned fibrillar structure (echo types I + II) ($Z = -0.414$, $P = 0.679$) as well as disorganized structure (echo types III + IV) ($Z = -0.370$, $P = 0.711$) did not change over the 4-wk exercise program. Change in tendon structure and dimensions on UTC did not differ significantly between the groups.

CONCLUSION:

Structural properties and dimensions of the patellar tendon on UTC did not change after a 4-wk isometric or isotonic exercise program for athletes with patellar tendinopathy in-season, despite an improvement in symptoms. It seems that structural improvements are not required for a positive clinical outcome.

40. ANKLE SPRAINS AND INSTABILITY

Exercises for

J Sports Med Phys Fitness. 2018 Sep 27. doi: 10.23736/S0022-4707.18.08544-4.

Exercise based interventions for physically active individuals with functional ankle instability: a systematic literature review.

Cruz AL^{1,2,3}, Oliveira R⁴, Silva AG^{5,6}.

INTRODUCTION:

Ankle instability is highly prevalent in physically active individuals and the effectiveness of rehabilitation programs based on exercise is still unclear. The objective of this study is to assess the effects of any type of exercise programs compared to any other intervention or no intervention for physically active individuals with functional ankle instability (FAI) and to explore whether the effects vary according to the characteristics of the exercise programme and outcome variables.

EVIDENCE ACQUISITION:

We searched English, French and Portuguese language publications from the following databases: PubMed (National Library of Medicine, Bethesda, MD), SPORTDiscus, Physiotherapy Evidence Database, Academic Search Complete, Science Direct and Scielo. Combinations of the following key words were used: functional, instability, ankle, sports, exercise, proprioception, coordination. Eligible studies were randomized control trials (RCT) or clinical control trials (CCT) that compared an intervention consisting of an exercise program in adult participants with functional ankle instability (FAI) and defined as physically active against other exercise programs, other interventions or no intervention. Two independent reviewers applied the selection criteria and assessed the quality of the studies.

EVIDENCE SYNTHESIS:

A total of 567 studies were retrieved from the literature search and 8 articles met the inclusion criteria. Included studies assessed dynamic and static postural control, proprioception, strength, self-reported instability, range of motion, balance, pain and muscle reaction time. All studies compared an exercise programme against no intervention, one compared exercise against the same program with the addition of stochastic resonance, and two studies compared different exercise programs.

CONCLUSIONS:

Exercise programs focused on coordination, balance and proprioception appear to improve functional performance for physically active individuals with functional instability and reduce subjective instability. Exercise training presents as an option to improve postural control, joint position sense or recurrent injury rates. Further study is suggested in order to determine optimal exercise programs for specific sports populations.

41 B. COMPARTMENT SYNDROMES**Tibial stress**

Br J Sports Med. 2018 Oct;52(19):1267-1272. doi: 10.1136/bjsports-2016-097037. Epub 2017 Feb 8.

Medial tibial stress syndrome can be diagnosed reliably using history and physical examination.

Winters M¹, Bakker EWP², Moen MH^{3,4,5}, Barten CC⁶, Teeuwen R⁷, Weir A^{8,9}.

BACKGROUND:

The majority of sporting injuries are clinically diagnosed using history and physical examination as the cornerstone. There are no studies supporting the reliability of making a clinical diagnosis of medial tibial stress syndrome (MTSS).

AIM:

Our aim was to assess if MTSS can be diagnosed reliably, using history and physical examination. We also investigated if clinicians were able to reliably identify concurrent lower leg injuries.

METHODS:

A clinical reliability study was performed at multiple sports medicine sites in The Netherlands. Athletes with non-traumatic lower leg pain were assessed for having MTSS by two clinicians, who were blinded to each others' diagnoses. We calculated the prevalence, percentage of agreement, observed percentage of positive agreement (Ppos), observed percentage of negative agreement (Pneg) and Kappa-statistic with 95%CI.

RESULTS:

Forty-nine athletes participated in this study, of whom 46 completed both assessments. The prevalence of MTSS was 74%. The percentage of agreement was 96%, with Ppos and Pneg of 97% and 92%, respectively. The inter-rater reliability was almost perfect; $k=0.89$ (95% CI 0.74 to 1.00), $p<0.000001$. Of the 34 athletes with MTSS, 11 (32%) had a concurrent lower leg injury, which was reliably noted by our clinicians, $k=0.73$, 95% CI 0.48 to 0.98, $p<0.0001$.

CONCLUSION:

Our findings show that MTSS can be reliably diagnosed clinically using history and physical examination, in clinical practice and research settings. We also found that concurrent lower leg injuries are common in athletes with MTSS.

42. PLANTAR SURFACE**Isometric exercise not better than isotonic in plantar fasciitis**

Scand J Med Sci Sports. 2018 Sep 11. doi: 10.1111/sms.13296.

The effect of isometric exercise on pain in individuals with plantar fasciopathy: A randomized crossover trial.

Riel H¹, Vicenzino B², Jensen MB¹, Olesen JL^{1,3}, Holden S^{1,4}, Rathleff MS^{1,4,5}.

Isometric exercise is commonly recommended for immediate pain relief in individuals suffering from lower limb tendinopathies, despite the limited evidence supporting its analgesic effect. Due to the similarities between plantar fasciopathy and tendinopathies, the aim of this trial was to investigate the acute effect of isometric exercise on pain, compared to isotonic exercise, or walking, in individuals with plantar fasciopathy. We recruited 20 individuals with plantar fasciopathy for this prospectively-registered, participant-blinded, randomized, superiority crossover trial (ClinicalTrials.gov: NCT03264729). Participants attended three exercise sessions (isometric, isotonic, or walking) in a randomized order, within a 2-week period. Both isometric and isotonic exercises were performed standing with the forefoot on a step bench, while walking was performed barefoot. The primary outcome was pain (measured on a 0-100-mm VAS) during a pain-aggravating activity. Secondary outcomes included pressure pain threshold (PPT) under the heel, and plantar fascia thickness (PFT). All outcomes were measured before and after each exercise session. There were no significant differences between the three exercises on pain ($P = 0.753$), PPTs ($P = 0.837$), or PFT ($P = 0.718$). Further, there was no change in pain from before to after any of the exercises (isometric exercise 2.7 mm [95% CI: -12.2; 6.8], isotonic exercise -3.4 mm [95% CI: -5.0; 11.8], or walking 1.6 mm [95% CI: -16.1; 12.9]).

Contrary to expectations, isometric exercise was no better than isotonic exercise or walking at reducing pain in individuals with plantar fasciopathy. None of the exercises induced any systematic analgesic effect.

48 A. STM**Agreement on MTP's**

Pain Med. 2018 Oct 1;19(10):2039-2050. doi: 10.1093/pm/pnx315.

Validity and Reliability of Clinical Examination in the Diagnosis of Myofascial Pain Syndrome and Myofascial Trigger Points in Upper Quarter Muscles.

Mayoral Del Moral O^{1,2}, Torres Lacomba M², Russell IJ³, Sánchez Méndez Ó², Sánchez Sánchez B².

OBJECTIVES:

To determine whether two independent examiners can agree on a diagnosis of myofascial pain syndrome (MPS). To evaluate interexaminer reliability in identifying myofascial trigger points in upper quarter muscles. To evaluate the reliability of clinical diagnostic criteria for the diagnosis of MPS. To evaluate the validity of clinical diagnostic criteria for the diagnosis of MPS.

DESIGN:

Validity and reliability study.

SETTING:

Provincial Hospital. Toledo, Spain.

PARTICIPANTS:

Twenty myofascial pain syndrome patients and 20 healthy, normal control subjects, enrolled by a trained and experienced examiner.

METHODS:

Ten bilateral muscles from the upper quarter were evaluated by two experienced examiners. The second examiner was blinded to the diagnosis group. The MPS diagnosis required at least one muscle to have an active myofascial trigger point. Three to four days separated the two examinations. The primary outcome measure was the frequency with which the two examiners agreed on the classification of the subjects as patients or as healthy controls. The kappa statistic (K) was used to determine the level of agreement between both examinations, interpreted as very good (0.81-1.00), good (0.61-0.80), moderate (0.41-0.60), fair (0.21-0.40), or poor (≤ 0.20).

RESULTS:

Interexaminer reliability for identifying subjects with MPS was very good (K = 1.0). Interexaminer reliability for identifying muscles leading to a diagnosis of MPS was also very good (K = 0.81). Sensitivity and specificity showed high values for most examination tests in all muscles, which confirms the validity of clinical diagnostic criteria in the diagnosis of MPS.

CONCLUSIONS:

Interrater reliability between two expert examiners identifying subjects with MPS involving upper quarter muscles exhibited substantial agreement. These results suggest that clinical criteria can be valid and reliable in the diagnosis of this condition.

PMID: 29253210 DOI: 10.1093/pm/pnx315

49. STRETCHING

Comparisons

J Sport Rehabil. 2018 Oct 9:1-21. doi: 10.1123/jsr.2018-0178.

STATIC STRETCHING INTENSITY DOES NOT INFLUENCE ACUTE RANGE OF MOTION, PASSIVE TORQUE AND MUSCLE ARCHITECTURE.

Santos CX¹, Beltrão NB², Pirauá ALT³, Durigan JLQ⁴, Behm D⁵, de Araújo RC⁶.

CONTEXT::

Although stretching exercises are commonly used in clinical and athletic practice, there is a lack of evidence regarding the methodological variables that guide the prescription of stretching programs, such as intensity.

OBJECTIVE::

The aim of this study was to investigate the acute effects of different stretching intensities on the range of movement (ROM), passive torque and muscle architecture.

DESIGN::

Two-group pretest-posttest design.

SETTING::

Laboratory.

PARTICIPANTS::

Twenty untrained men were allocated into the Low (LI) or High (HI) intensity group.

MAIN OUTCOME MEASURES::

Subjects were evaluated for initial (ROM_{initial}) and maximum (ROM_{max}) discomfort angle, stiffness, viscoelastic stress relaxation (VSR), muscle fascicle length and pennation angle.

RESULTS::

The ROM assessments showed significant changes, in both groups, in the pre- and post-intervention measures, both for the ROM_{initial} ($p < 0.01$) and ROM_{max} angle ($p = 0.02$). There were no significant differences for stiffness and VSR variables. The pennation angle and muscle fascicle length were different between the groups, but there was no significant interaction.


CONCLUSION::

Performing stretching exercises at high or low intensity acutely promotes similar gains in flexibility, ie, there are short term/immediate gains in ROM, but does not modify passive torque and muscle architecture.

50 B. PNF**Rhythmic stabilization**

Original Research Paper

Is it possible to stabilize the trunk using rhythmic stabilization in the upper limb? A cross-sectional study of asymptomatic individuals

Valdeci Carlos Dionisio , Cyntia Rogean de Jesus Alves de Baptista, Adriana de Sales Rodrigues & Luciane Aparecida Pascucci Sande de Souza

- <https://doi.org/10.1080/10669817.2018.1467994>

Objective: The study aim was to evaluate the immediate effect of rhythmic stabilization on local and distant muscles involved in a functional reach.

Method: Prospective, observational cross-sectional study. Eight right-handed and non-impaired individuals (4 females and 4 males) aged 18–24 years (21.5 ± 1.58 years) were evaluated. Bilateral electromyographic recording of the biceps brachii, triceps brachii, multifidus lumbar, and rectus abdominis muscles was performed during three different tasks. Task 1 involved functional reach, while Task 2 involved rhythmic stabilization followed by a functional reach. Task 3 was similar to Task 2, but with 3 repetitions before a functional reach.

Results: The results showed no difference between the tasks or sides. However, an interaction was observed between each side and muscles, with greater activation of the right multifidus lumbar muscle.

Conclusion: Rhythmic stabilization during the task of reaching promotes an increase of multifidus activity ipsilateral to its application. Thus, this particular technique of proprioceptive neuromuscular facilitation can be useful for improving stability of the trunk and can be used in clinical practice for this purpose. **Level of Evidence:** 5.

52. EXERCISE

Lack of muscle strengthening exercise

Journal Summaries in Family Medicine

Muscle-strengthening exercise among 397,423 U.S. adults: Prevalence, correlates, and associations with health conditions

American Journal of Preventive Medicine

Bennie JA, et al. | October 25, 2018

Muscle-strengthening exercise participation and its associations with adverse health conditions among U.S. adults, were determined by analyzing data from the U.S. 2015 Behavioral Risk Factor Surveillance System. To know the frequency of muscle-strengthening exercise participation during the past week among respondents, telephone surveys were conducted. As per observations, muscle-strengthening exercise was associated with better health conditions, but still, non-participation in any muscle-strengthening exercise was reported by three in five U.S. adults.

Older adults, females, those with low education/income, and those with a poor health status are the candidates that were recommended to be targeted by future muscle-strengthening exercise promotion strategies.

59. PAIN**Pain beliefs**

Musculoskelet Sci Pract. 2018 Oct;37:29-57. doi: 10.1016/j.msksp.2018.06.010. Epub 2018 Jun 28.

The association between pain beliefs and pain intensity and/or disability in people with shoulder pain: A systematic review.

Martinez-Calderon J¹, Struyf F², Meeus M³, Luque-Suarez A⁴.

Author information**Abstract****BACKGROUND:**

Pain beliefs might play a role in the development, transition, and perpetuation of shoulder pain.

OBJECTIVE:

To systematically review and critically appraise the association and the predictive value of pain beliefs on pain intensity and/or disability in shoulder pain.

METHODS:

An electronic search of PubMed, EBSCOhost, AMED, CINAHL, EMBASE, and PubPsych, and grey literature was searched from inception to July 2017. Study selection was based on observational studies exploring the association and the predictive value of pain beliefs on pain intensity and/or disability in shoulder pain.

RESULTS:

A total of thirty-three articles were included with a total sample of 10,293 participants with shoulder pain. In the cross-sectional analysis, higher levels of pain catastrophizing and kinesiophobia were significantly associated with more pain intensity and disability, whereas higher levels of expectations of recovery and self-efficacy were significantly associated with lower levels of pain intensity and disability. In the longitudinal analysis, higher levels of pain catastrophizing, fear-avoidance and kinesiophobia at baseline predicted greater pain intensity and disability overtime. Higher levels of self-efficacy and expectations of recovery at baseline predicted a reduction in levels of pain intensity and disability overtime.

CONCLUSIONS:

Evidence suggests that pain beliefs are associated with and predict the course of pain intensity and disability in shoulder pain. However, the overall body of the evidence after applying the GRADE approach was very low across studies. Further research using higher quality longitudinal designs and procedures would be needed to establish firm conclusions.

Pain modulation in CP vs no pain

Clin J Pain. 2018 Sep 21. doi: 10.1097/AJP.0000000000000657.

The Magnitude of Offset Analgesia as a Measure of Endogenous Pain Modulation in Healthy Subjects and Patients with Chronic Pain - A Systematic Review and Meta-analysis.

Szikszay TM¹, Adamczyk WM², Luedtke K³.

OBJECTIVE:

Offset analgesia (OA) is a test paradigm increasingly used to estimate endogenous pain modulation characterized by a disproportionately profound analgesia after a small decrease of a heat stimulus. This systematic review and meta-analysis examined the magnitude and difference of OA in healthy subjects and chronic pain patients.

METHODS:

Controlled trials, case-control studies, cross-sectional studies, case-series or other observational studies evaluating the effect of a $\pm 1^{\circ}\text{C}$ offset trial in healthy controls and patients with chronic pain were searched in PubMed, Web of Science, CINAHL, PEDro, PsycINFO and Cochrane CENTRAL. An additional hand search was conducted. Studies fulfilling the eligibility criteria were independently assessed for methodological quality with the Downs & Black scale by two reviewers.

RESULTS:

Twenty-six studies (healthy $n=758$; chronic pain $n=134$) were included in the qualitative synthesis and twelve in meta-analyses (healthy $n=366$; chronic pain $n=73$). A significant difference between offset and constant temperature trials was found for continuous pain intensity rating immediately after a 1°C decrease in temperature (-0.46 [visual analogue scale, 0-10]; 95%CI $-0.75, -0.17$; $P=0.002$), but not after a fixed time period of 5 seconds. Furthermore, a significant difference of the magnitude of OA between chronic pain patients and healthy controls was calculated (-29.9% ; 95%CI $-40.3, -19.5$]; $P<0.00001$).

DISCUSSION:

Results indicate that pain-free subjects show a larger OA response when rating pain continuously compared to patients with chronic pain.

GMI for pain

Clin J Pain. 2018 Sep 15. doi: 10.1097/AJP.0000000000000648.

The Effects of Motor Imagery on Pain and Range of Motion in Musculoskeletal Disorders: A Systematic Review With Meta-analysis.

Yap BWD¹, Lim ECW^{2,3}.

INTRODUCTION:

In recent years, there has been an increase in the use of motor imagery in the rehabilitation of musculoskeletal pain conditions. Across the literature, most reviews have yet to consider Laterality Judgement Task training as a form of motor imagery method. This review aimed to evaluate the effectiveness when using MI as an adjunct to standard rehabilitation on the improvement of pain and range of motion parameters when managing patients with musculoskeletal pain conditions.

METHODS:

Searches of eight major electronic databases were conducted. Data for pain and range of motion were extracted. Meta-analyses (where possible) with either a fixed- or random- effect(s) model, standardized mean differences (SMDs), and tests of heterogeneity were performed.

RESULTS:

Eight clinical controlled trials were identified and included in the meta-analyses. When compared to standard rehabilitation alone, the adjunctive role of motor imagery provided superior pain relief (pooled SMD -2.25, 95% confidence interval [CI] -4.11 to -0.4, P=0.02), and greater improvement in range of motion (pooled SMD 3.04, 95% CI 0.66 to 5.43, P=0.01) in chronic musculoskeletal pain disorders.

DISCUSSION:

These suggest that motor imagery may be effective for pain relief and improvement in range of motion amongst chronic musculoskeletal pain conditions, although this conclusion is based on limited certainty of evidence.

61. FIBROMYALGIA

Stretching vs. strengthening

Eur J Phys Rehabil Med. 2018 Oct;54(5):663-670. doi: 10.23736/S1973-9087.17.04876-6. Epub 2017 Nov 29.

Muscle stretching exercises and resistance training in fibromyalgia: which is better? A three-arm randomized controlled trial.

Assumpção A¹, Matsutani LA^{1,2}, Yuan SL¹, Santo AS¹, Sauer J¹, Mango P¹, Marques AP³.

BACKGROUND:

Exercise therapy is an effective component of fibromyalgia (FM) treatment. However, it is important to know the effects and specificities of the different types of exercise: muscle stretching and resistance training.

AIM:

To verify and compare the effectiveness of muscle stretching exercise and resistance training for symptoms and quality of life in FM patients.

DESIGN: Randomized controlled trial.

SETTING: Physical therapy service, FM outpatient clinic.

POPULATION: Forty-four women with FM (79 screened).

METHODS:

Patients were randomly allocated into a stretching group (N.=14), resistance group (N.=16), and control group (N.=14). Pain was assessed using the visual analog scale, pain threshold using a Fischer dolorimeter, FM symptoms using the Fibromyalgia Impact Questionnaire (FIQ), and quality of life using the Medical Outcomes Study 36-item Short-Form Health Survey (SF-36). The three intervention groups continued with usual medical treatment. In addition, the stretching and resistance groups performed two different exercise programs twice a week for 12 weeks.

RESULTS:

After treatment, the stretching group showed the highest SF-36 physical functioning score (P=0.01) and the lowest bodily pain score (P=0.01). The resistance group had the lowest FIQ depression score (P=0.02). The control group had the highest score for FIQ morning tiredness and stiffness, and the lowest score for SF-36 vitality. In clinical analyses, the stretching group had significant improvement in quality of life for all SF-36 domains, and the resistance group had significant improvement in FM symptoms and in quality of life for SF-36 domains of physical functioning, vitality, social function, emotional role, and mental health.

CONCLUSIONS:

Muscle stretching exercise was the most effective modality in improving quality of life, especially with regard to physical functioning and pain, and resistance training was the most effective modality in reducing depression.

CLINICAL REHABILITATION IMPACT:

The trial included a control group and two intervention groups, both of which received exercise programs created specifically for patients with FM. In clinical practice, we suggest including both modalities in an exercise therapy program for FM.

Exercise

J Sports Med Phys Fitness. 2018 Oct 1. doi: 10.23736/S0022-4707.18.08897-7.

Therapeutic validity of exercise interventions in the management of fibromyalgia.

Álvarez-Gallardo IC^{1,2}, Bidonde J^{3,4}, Busch A³, Westby M⁵, Kenny GP⁶, Delgado-Fernández M⁷, Carbonell-Baeza A⁸, Rahman P⁹, De Angelis G¹⁰, Brosseau L¹⁰.

BACKGROUND:

This study aimed (1) to evaluate the therapeutic validity of exercise interventions included in a previous umbrella systematic review of high-quality randomized controlled trials (RCTs) in the management of fibromyalgia; and (2) to explore whether exercise interventions with high therapeutic validity and that meet the 2013 American College of Sports Medicine (ACSM) guidelines are positively associated with greater pain relief.

METHODS:

Therapeutic validity was evaluated based on the CONsensus on Therapeutic Exercise and Training (CONTENT) scale, in high methodological quality RCTs found in the nine systematic reviews of a previous umbrella review on exercise interventions in the management of fibromyalgia. Additionally, the compliance of the 2013 ACSM exercise recommendations for fibromyalgia was analyzed. The effect size for pain relief after the exercise programs was also considered.

RESULTS:

The CONTENT mean total score was 4.42 out of 9, demonstrating generally low therapeutic validity of the 28 included RCTs. There was poor concordance between therapeutic validity and pain relief (Kappa values ranging between -0.6 to 0.57). Kappa statistic results showed poor concordance ($k=0.01$) between statistically significant ($p<0.05$) pain relief values and achievement of 2013 ACSM exercise recommendations.

CONCLUSIONS:

The therapeutic validity of exercise intervention programs in fibromyalgia is low. This is mainly due to incomplete descriptions of exercise interventions and adherence. Poor concordance is found between high therapeutic validity and accomplishment of the ACSM exercise recommendations with pain relief. Improved standardized reporting is recommended to identify optimal exercise prescription for fibromyalgia.

63. PHARMACOLOGY

Stress fx and anti-inflammatories

Journal Summaries in Family Medicine

Nonsteroidal anti-inflammatory drug prescriptions are associated with increased stress fracture diagnosis in the U.S. Army population

Journal of Bone and Mineral Research — Hughes JM, et al. | October 25, 2018

Using data from the Total Army Injury and Health Outcomes Database from 2002 to 2011 (n = 1,260,168), researchers conducted a nested case-control study to determine if prescribed nonsteroidal anti-inflammatory drugs (NSAIDs) were correlated with stress fracture diagnoses among U.S. Army Soldiers. In addition, they aspired to explore whether acetaminophen (an analgesic alternative to NSAIDs) was related to stress fracture risk. In this analysis, 9,088 cases and 36,878 matched controls were identified.

Especially during periods of heightened physical activity, an association was found between NSAID and acetaminophen prescriptions and stress fracture risk.