

**Fibromyalgia syndrome: a discussion of the syndrome and pharmacotherapy.**  
**Smith HS, Barkin RL**

American journal of therapeutics [Add to My Journals List](#) 

2010 Jul-Aug 17(4):418-39 Language: eng Country: United States Albany Medical College, Department of Anesthesiology, Albany, NY 12208, USA. smithh@mail.amc.edu Fibromyalgia is a complex condition that is characterized by chronic widespread pain and multiple other symptoms, including fatigue, sleep disturbances, cognitive dysfunction, stiffness, and depressive episodes. Fibromyalgia may coexist and/or overlap with other conditions that may involve central sensitivity, including chronic fatigue syndrome, irritable bowel syndrome, irritable bladder syndrome or interstitial cystitis, and temporomandibular disorder. The pathophysiology of fibromyalgia remains uncertain but is believed to be partly the result of central systems affecting afferent processing as well as impaired endogenous pain-inhibitory systems. Abnormal central nociceptive processing may contribute to fibromyalgia, producing heightened responses to various noxious stimuli with resulting mechanical hyperalgesia. Fibromyalgia remains a clinical diagnosis. There has been a recent paradigm shift away from requiring 11 or more out of 18 tender points and instead focusing on the presence of chronic widespread pain as well as symptoms of fatigue, unrefreshed sleep, and other somatic complaints. Although there is no known cure for fibromyalgia, multidisciplinary team efforts using combined treatment approaches, including patient education, aerobic exercise, cognitive behavioral therapy, and pharmacologic therapies (serotonin norepinephrine reuptake inhibitors [eg, duloxetine, milnacipran] and alpha 2-delta receptor ligands [eg, pregabalin]) may improve symptoms as well as function of patients with fibromyalgia.

**The effects of the contract-relax-antagonist-contract form of proprioceptive neuromuscular facilitation stretching on postural stability. Ryan EE, Rossi MD, Lopez R**

Journal of strength and conditioning research / National Strength & Conditioning Association

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201007 24(7):1888-94 Language: eng Country: United States Department of Physical Therapy, College of Nursing and Health Sciences, Florida International University, Miami, Florida, USA. eryl@fiu.edu To investigate the effects of the contract-relax-antagonist-contract (CRAC) form of proprioceptive neuromuscular facilitation (PNF) stretching, with and without a warm-up, on postural stability. Thirty volunteers (15 men and 15 women, age: 25.17 +/- 5.4 years, height: 173.76 +/- 8.2 cm, and weight: 72.03 +/- 14.87 kg) were randomly assigned to 1 of 3 conditions: warm-up and stretch (WS), stretching only (SO), and a control condition (CON). Contract-relax-antagonist-contract PNF of the hamstrings, plantar flexors, and hip flexors was performed during WS and SO. A 6-minute treadmill warm-up was applied before CRAC in the WS condition. Measures of anterior/posterior and medial/lateral (M/L) postural stability were taken before and after treatment conditions. A 2 x 3 analysis of variance was used to assess for differences between conditions. Significance was set at  $p < 0.05$ . There was a time x condition interaction ( $F = 3.962,58$ ;  $p = 0.024$ , Power = 0.69) for M/L stability. There was a difference between WS and CON ( $p = 0.037$ , Power = 0.57) and SO and CON ( $p = 0.041$ , Power = 0.51) posttesting. This study suggests that CRAC PNF stretching with or without warm-up improves M/L stability. Contract-relax-antagonist-contract form of stretching is a useful protocol for improving M/L stability.

**An electromyography analysis of 3 muscles surrounding the shoulder joint during the performance of a chest press exercise at several angles. Trebs AA, Brandenburg JP, Pitney WA**

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201007 24(7):1925-30 Language: eng Country: United States Department of Kinesiology and Physical Education, Northern Illinois University, DeKalb, Illinois, USA. This study compared the activation of the clavicular head and the sternocostal head of the pectoralis major and the anterior deltoid when performing the bench press at several different angles. Fifteen healthy male subjects participated in this study. Subjects performed the chest press exercise at 0 (flat bench), 28, 44, and 56 degrees above horizontal using 70% of their respective 1 repetition maximum for each angle. Electromyographic activity was recorded during each repetition. Activation of the clavicular head of the pectoralis major was significantly greater at 44 degrees compared to 0 degrees ( $p = 0.010$ ), at 56 degrees compared to 0 degrees ( $p = 0.013$ ), and at 44 degrees compared to 28 degrees ( $p = 0.003$ ). Activation of the sternocostal head of the pectoralis major was significantly greater at 0 degrees compared to 28 degrees ( $p = 0.013$ ), at 0 degrees compared to 44 degrees ( $p = 0.018$ ), at 0 degrees compared to 56 degrees ( $p = 0.001$ ), at 28 degrees compared to 56 degrees ( $p = 0.003$ ), and at 44 degrees compared to 56 degrees ( $p = 0.001$ ). Activation of the anterior deltoid was significantly greater at 28 degrees compared to 0 degrees ( $p = 0.002$ ), at 44 degrees compared to 0 degrees ( $p = 0.012$ ), and at 56 degrees compared to 0 degrees ( $p = 0.014$ ). To optimize recruiting the involved musculature, it would seem that performing both the flat and incline chest press exercises is necessary.

**Effect of a dynamic loaded warm-up on vertical jump performance. Chattong C, Brown LE, Coburn JW, Noffal GJ**

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201007 24(7):1751-4 Language: eng Country: United States Human Performance Laboratory, Department of Kinesiology, California State University, Fullerton, California, USA. Considering the importance of the vertical jump in several sports, an optimal warm-up protocol may help athletes perform at their maximum level. The purpose of this study was to investigate the potentiating effects of different levels of external resistance (weighted vest) during box jumps on vertical jump performance. Twenty resistance trained men (age 22.45 +/- 1.73 years, height 176.83 +/- 6.67 cm, mass 76.98 +/- 8.56 kg) participated in this study. Subjects performed 5 jumps onto a box equivalent in height to their lateral femoral condyle. After a 2-minute rest period, subjects performed 3 vertical jumps with the greatest height being recorded. On day 1, each subject performed a control condition with no external resistance to establish a baseline vertical jump height. On the following days, they performed 4 random jump conditions with a weight vest equivalent to 5, 10, 15, or 20% of their body weight then rested for 2 minutes before performing 3 posttest vertical jumps. Results demonstrated no significant interaction of condition by time for vertical jump height. However, there was a significant main effect for time ( $p < 0.05$ ) with posttest jump height (22.99 +/- 3.35 in.) being greater than pretest jump height (22.69 +/- 3.37 in.). Performing an active dynamic warm-up with or without a weighted vest produced significantly greater posttest vertical jump performance. A dynamic warm-up may improve vertical jump performance, albeit to a very small increment.

**Various attitudes to the use of corrective exercises in conservative treatment of scoliosis. Nowotny J, Nowotny-Czupryna O, Czupryna K**

Ortopedia, traumatologia, rehabilitacja [Add to My Journals List](#) 

2010 Jan-Feb 12(1):1-11 Language: eng Country: Poland Department of Physiotherapy, Medical University of Silesia in Katowice. fizjoterapia@sum.edu.pl In acquired scoliosis, the degree of the curve is initially low and its type becomes apparent only after it has progressed. The characteristics of scoliosis include an abnormal spatial arrangement of individual body segments, which the central nervous system (CNS) interprets as a defect and automatically launches compensatory mechanisms. Neglecting low-degree scoliosis poses a two-fold danger. It usually leads to the development of structural changes, while the child gets used to the abnormal body arrangement, thus reinforcing the poor postural habits. The basic aim of early rehabilitation is to manage the compensatory mechanisms and prevent the development of adverse secondary changes, rehabilitation in scoliosis being no exception. Some cases of scoliosis require surgery. The point is to minimise the changes resulting from the progression of scoliosis. The role of corrective exercises seems to be significant here. However, views on the usefulness of such exercises are sometimes extremely varied, even though both favourable and sceptical opinions are not fully supported by the literature. However, a number of reports indicate that corrective exercises are useful.

The selection and of corrective exercises and how they should be performed are another question. A number of methods of conservative treatment of scoliosis have been devised. Currently, none of them is considered a comprehensive regimen since each patient requires an individual approach. The most difficult aspect is to ensure that local correction translates to the automatic maintenance of the corrected body posture in a standing position. This is facilitated by corrective exercises supported with biofeedback.

The aim of this paper is to elucidate this complex issue that often leads to divergent and improper attitudes to the conservative treatment of scoliosis.

**Short-duration massage at the hamstrings musculotendinous junction induces greater range of motion. Huang SY, Di Santo M, Wadden KP, Cappa DF, Alkanani T, Behm DG**

Journal of strength and conditioning research / National Strength & Conditioning Association

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201007 24(7):1917-24 Language: eng Country: United States The School of Human Kinetics and Recreation, Memorial University of Newfoundland, St. John's, Canada. Massage for the purpose of health dates back to early civilization and more recently has been used in the management and prevention of sport injuries. Massage has also been used as part of a warm-up to help increase acute flexibility. However, the physiological benefits and mechanisms of massage are not well known. The purpose of the present study was to investigate the effectiveness of 3 massage conditions on hip flexion range of motion (ROM). This experimentation involved a novel massage technique, which focused the massage on the musculotendinous junction for a short duration. Ten recreationally active women ranging from 21 to 36 years in age participated in this study. Participants were subjected to 3 massage conditions (no massage, 10-second massage, and 30-second massage) in a random order on separate days. Hip flexion angle, passive leg tension, and electromyography (EMG) were measured thrice before and within 10 seconds after the intervention. A main effect for conditions was found with the 30-second massage providing a 7.2% increase in hip flexion ROM that was significantly greater than the control condition ( $p < 0.05$ ). Significant interactions occurred with an increased ROM ( $p < 0.05$ ) from pre to posttests of 5.9 and 7.2% for the 10- and 30-second massage conditions, respectively. There were no significant differences in passive tension or EMG for any conditions or time. With a significant increase in hip angle and no associated increase in passive tension or EMG, there is a suggestion that 10 and 30 seconds of musculotendinous massage induces greater ROM through a modified stretch perception, increased stretch tolerance, or increased compliance of the hamstrings. Musculotendinous massage may be used as an alternative or a complement to static stretching for increasing ROM.

**A pilot randomized controlled trial of the Yoga of Awareness program in the management of fibromyalgia** Pain; Volume 151 92); November 2010, Pages 530-539

A mounting body of literature recommends that treatment for fibromyalgia (FM) encompass medications, exercise and improvement of coping skills. However, there is a significant gap in determining an effective counterpart to pharmacotherapy that incorporates both exercise and coping. The aim of this randomized controlled trial was to evaluate the effects of a comprehensive yoga intervention on FM symptoms and coping. A sample of 53 female FM patients were randomized to the 8-week Yoga of Awareness program (gentle poses, meditation, breathing exercises, yoga-based coping instructions, group discussions) or to wait-listed standard care. Data were analyzed by intention to treat. At post-treatment, women assigned to the yoga program showed significantly greater improvements on standardized measures of FM symptoms and functioning, including pain, fatigue, and mood, and in pain catastrophizing, acceptance, and other coping strategies. This pilot study provides promising support for the potential benefits of a yoga program for women with FM.

## **Explanatory and Diagnostic Labels and Perceived Prognosis in Chronic Low Back Pain**

Spine; 1 October 2010 - Volume 35 - Issue 21 - pp E1120-E1125

Diagnostic explanations by healthcare professionals may influence patient coping and uptake of therapy by patients with chronic low back pain. Although the correlation between radiologic changes and chronic low back pain is weak, these investigations are often used by clinicians as an explanation of the underlying cause for the pain.

**Methods:** Patients were asked about their understanding of the mechanisms underlying their pain, flares, and future outcome. Notes from these interviews were transcribed, along with correspondence from primary care physicians, orthopedic surgeons and pain physicians, and lumbar spine radiology reports for these patients. Content analysis was performed to identify and group key terms.

**Results:** Two major categories representing the predominant themes emerging from the content analysis were “Degeneration” and “Mechanical.” Degenerative terms such as “wear and tear” and “disc space loss” indicated a progressive loss of structural integrity. Examples of phrases used by patients included “deterioration [...] spine is crumbling” and “collapsing [...] discs wearing out.” The use of degenerative terms by patients was associated with a poor perceived prognosis. Degenerative and mechanical terms were more commonly used by patients when they were documented in correspondence from secondary care specialists.

**Conclusion:** A common language is shared between professionals and patients that may encourage unhelpful beliefs. The use of degenerative terms such as wear and tear by patients is associated with a poor perceived prognosis. The explanation of radiological findings to patients presents an opportunity to challenge unhelpful beliefs, thus facilitating uptake of active treatment strategies.

## **Myofascial Trigger Points in Neck and Shoulder Muscles and Widespread Pressure Pain**

### **Hypersensitivity in Patients With Postmastectomy Pain: Evidence of Peripheral and Central**

**Sensitization** Clinical Journal of Pain; November/December 2010 - Volume 26 - Issue 9 - pp 798-806

**Objective:** To describe the presence of widespread pressure pain hyperalgesia and myofascial trigger points (TrPs) in neck and shoulder muscles in patients with postmastectomy pain.

**Methods:** Twenty-nine women (mean age:  $50 \pm 8$  y) with postmastectomy pain and 23 matched healthy controls (mean age:  $50 \pm 9$  y) participated. Pressure pain thresholds (PPT) were bilaterally assessed over the C5-C6 zygapophyseal joint, the deltoid muscle, the second metacarpal, and the tibialis anterior muscle. TrPs in the upper trapezius, suboccipital, levator scapulae, sternocleidomastoid, scalene, infraspinatus, and pectoralis major muscles were explored. TrPs were considered active if the local and referred pain reproduced symptoms and the patient recognized the pain as familiar.

**Results:** Twenty-five (86%) patients reported neck pain whereas 20 (69%) patients showed shoulder/axillary pain. The results showed that PPT levels were significantly decreased bilaterally over the C5-C6 zygapophyseal joint, deltoid muscle, second metacarpal, and tibialis anterior muscle in patients with postmastectomy pain as compared with controls (all sites,  $P < 0.001$ ). No significant differences in the magnitude of PPT decrease between sites were found ( $P = 0.222$ ). The mean number of active TrPs for each woman with postmastectomy pain was  $5.4 \pm 1.8$ . Healthy controls only had latent TrPs ( $0.5 \pm 0.6$ ). Patients with postmastectomy pain showed a greater number of TrPs than controls ( $P < 0.001$ ). In all muscles, there was significantly more active TrPs in patients with postmastectomy pain as compared with controls. Active TrPs in the pectoralis major ( $n = 27$ , 93%), infraspinatus ( $n = 23$ , 79%), and upper trapezius ( $n = 19$ , 65%) muscles were the most prevalent in the affected side in the postmastectomy group. The number of active TrPs was positively correlated with neck and shoulder/axillary pain intensity.

**Conclusions:** Our findings revealed bilateral widespread pressure pain hypersensitivity in patients with postmastectomy pain. In addition, the local and referred pain elicited by active TrPs reproduced neck and shoulder/axillary complaints in these patients. These results suggest peripheral and central sensitization in patients with postmastectomy pain.

**Action observation treatment improves recovery of postsurgical orthopedic patients: evidence for a top-down effect?** Arch Phys Med Rehabil 2010;91:1489-94.

**Objective:** To assess whether action observation treatment (AOT) may also improve motor recovery in postsurgical orthopedic patients, in addition to conventional physiotherapy.

**Design:** Randomized controlled trial.

**Participants:** Patients (n=60) admitted to our department. Post-orthopedic surgery were randomly assigned to either a case (n=30) or control (n=30) group. Exclusion criteria were age 18 years or younger and 90 years or older, Mini-Mental State Examination score of 21 of 30 or lower, no ambulating order, advanced vision impairment, malignancy, pneumonia, or heart failure.

**Interventions:** All participants underwent conventional physiotherapy. In addition, patients in the case group were asked to observe video clips showing daily actions and to imitate them afterward. Patients in the control group were asked to observe video clips with no motor content and to execute the same actions as patients in the case group afterward. Participants were scored on functional scales at baseline and after treatment by a physician blinded to group assignment.

**Main Outcomes Measures:** Changes in FIM and Tinetti scale scores, and dependence on walking aids.

**Results:** At baseline, groups did not differ in clinical and functional scale scores. After treatment, patients in the case group scored better than patients in the control group; patients in the case group were assigned more frequently to 1 crutch.

**Conclusions:** In addition to conventional physiotherapy, AOT is effective in the rehabilitation of postsurgical orthopedic patients. The present results strongly support top-down effects of this treatment in motor recovery, even in non-neurologic patients.

**Accuracy of Diagnostic Ultrasound in Patients With Suspected Subacromial Disorders: A Systematic Review and Meta-Analysis** Archives of Physical Medicine and Rehabilitation; Volume 91 (10); Pages 1616-1625 (October 2010)

**Objective:** To determine the diagnostic accuracy of ultrasound for detecting subacromial disorders in patients presenting in primary and secondary care settings.

**Data Sources:** Medline and Embase were searched on June 9, 2010. In addition, the reference list of 1 systematic review and all included articles were searched to identify relevant studies.

**Study Selection:** Two reviewers independently selected the articles evaluating the accuracy of ultrasound for detecting subacromial disorders from the title and abstracts retrieved by the literature search. Selection criteria were ultrasound frequency greater than or equal to 7.5MHz as index test, surgery, magnetic resonance imaging and/or radiography as reference standards, and subacromial disorders as target conditions.

**Data Extraction:** Two reviewers independently extracted the data on study characteristics and results to construct 2 by 2 tables and performed a methodologic quality assessment.

**Data Synthesis:** Twenty-three studies were included: 22 reported on full-thickness rotator cuff tears, 15 on partial-thickness tears, 3 on subacromial bursitis, 2 on tendinopathy, and 2 on calcifying tendonitis, respectively. For full-thickness tears, pooled sensitivity of ultrasound was .95 (95% confidence interval, .90–.97), and specificity .96 (.93–.98). For partial-thickness tears, pooled sensitivity was .72 (.58–.83), and specificity .93 (.89–.96). Statistical pooling was not possible for the other disorders. For subacromial bursitis, sensitivity ranged from .79 to .81, and specificity from .94 to .98. For tendinopathy, sensitivity ranged from .67 to .93, specificity from .88 to 1.00. Sensitivity for calcifying tendonitis was 1.00 in both studies, with specificity ranging from .85 to .98.

**Conclusions:** We strongly recommend ultrasound in patients for whom conservative treatment fails, to rule in or out full-thickness tears, to rule in partial-thickness tears, and to a lesser extent to diagnose tendinopathy, subacromial bursitis, and calcifying tendonitis. These results can help physicians tailor treatment.

**The Effects of 12 Weeks of Resistance Exercise Training on Disease Severity and Autonomic Modulation at Rest and After Acute Leg Resistance Exercise in Women with Fibromyalgia** Archives of Physical Medicine and Rehabilitation; Volume 91 (10); Pages 1551-1557 (October 2010)

**Objective:** To determine the effects of 12 weeks of resistance exercise training (RET) on disease severity and autonomic modulation at rest and after acute leg resistance exercise in women with fibromyalgia (FM) and healthy controls (HCs).

**Participants:** Women with FM (n=9; mean age  $\pm$  SD, 42 $\pm$ 5y) and HCs (n=15; mean age, 45 $\pm$ 5y).

**Intervention:** Both groups underwent testing before and after 12 weeks of whole-body RET consisting of 3 sets of 8 to 12 repetitions on 5 different exercises.

**Main Outcome Measures:** Disease severity was assessed using the number of active tender points, myalgic score, and the Fibromyalgia Impact Questionnaire (FIQ). Heart rate and autonomic modulation using power spectral analysis of heart rate variability (HRV) were measured at rest and 20 minutes after 5 sets of leg-press exercise.

**Results:** There was no group-by-time interaction for any variable. Women with FM and HCs had similar increases in maximal strength after RET. Number of active tender points, myalgic score, and FIQ score were decreased after RET in women with FM. Heart rate and natural log (Ln) high frequency (LnHF) were recovered, whereas Ln low frequency (LnLF) and LnLF/LnHF ratio were increased 20 minutes after acute leg resistance exercise. There were no significant effects of RET on HRV at rest or post-exercise.

**Conclusions:** These findings indicate that cardiovagal modulation of heart rate recovers early after leg resistance exercise in women with FM and HCs. It is concluded that RET reduces the severity of FM, but it has no impact on autonomic modulation of heart rate.

**Psychological treatments for fibromyalgia: A meta-analysis Pain; Volume 151 (2);**

November 2010, Pages 280-295

**Volume 6; Issue 11**

The aims of the present analysis were to investigate the short- and long-term efficacies and treatment moderators of psychological interventions for fibromyalgia. A literature search using PubMed, PsychINFO, the Cochrane Library, and manual searches identified 23 eligible studies including 30 psychological treatment conditions and 1396 patients. Meta-analytic integration resulted in a significant but small effect size for short-term pain reduction and a small-to-medium effect size for long-term pain reduction over an average follow-up phase of 7.4 months for any psychological intervention.

Psychological treatments also proved effective in reducing sleep problems, depression, functional status, and catastrophizing. These effects remained stable at follow-up. Moderator analyses revealed cognitive-behavioral treatment to be significantly better than other psychological treatments in short-term pain reduction. Higher treatment dose was associated with better outcome. Publication-bias analyses demonstrated that the effect sizes were robust. The results suggest that the effects of psychological treatments for fibromyalgia are relatively small but robust and comparable to those reported for other pain and drug treatments used for this disorder. Cognitive-behavioral therapy was associated with the greatest effect sizes.

**Brain correlates of stress-induced analgesia** *Pain*; Volume 151 (2); November 2010, Pages 522-529

Stress-induced analgesia (SIA) refers to a reduced pain response after stress exposure, which is mediated by descending pain-inhibitory circuits and may be an indicator of adequate centrally mediated pain control. We used functional magnetic resonance imaging to assess brain mechanisms of SIA in 21 healthy participants. Using a block design series of mildly painful pressure stimuli were applied to the left medial phalanx of the second digit during functional magnetic resonance imaging. Mental arithmetic combined with increasing levels of noise was used as a stressor. Verbal ratings, changes in blood pressure and heart rate confirmed the validity of the stress induction. Post-stress pain thresholds and pain tolerance were significantly higher and post-stress pain and unpleasantness ratings were significantly lower compared to pre-stress levels. SIA led to an increase of the blood-level-dependent oxygenation response in the primary somatosensory cortex, bilaterally in the anterior insula, and secondary somatosensory cortex. The increase in pain tolerance correlated significantly with activation in the rostral anterior cingulate cortex and pain unpleasantness with activation in the dorsal anterior cingulate cortex. SIA seems to activate similar brain networks as placebo analgesia or analgesia mediated by diffuse noxious inhibitory controls and involved sensory, affective and cognitive modulatory circuits.

**Effect of Lumbar Spinal Stenosis and Surgical Decompression on Erectile Function** Spine; 15 October 2010 - Volume 35 - Issue 22 - pp E1172-E1177

So far, there are no reported data on pre- and postoperative erectile function status for patients with lumbar spinal stenosis.

**Methods.** A total of 197 male patients with lumbar spinal stenosis who under-went spinal decompression between May 2006 and June 2007 were screened. Patients over 75 years, patients who had previous radical prostatectomy, and patients with psychiatric or other severe concomitant diseases were excluded. Patients with further symptoms for *cauda equina* syndrome were excluded as well. The erectile function of the remaining 38 patients with a mean age of 63 years was retrospectively rated before and after lumbar spinal decompression using a standardized questionnaire (International Index of Erectile Function-5). Additionally, pre- and postoperative pain, quality of life, and walking distance were assessed.

**Results.** As expected severe preoperative back and leg pain significantly de-creased after decompressive surgery. This was associated with a significant increase in the quality of life. The incidence of erectile dysfunction before and after surgery was higher compared to population-based standard data, and surgery was associated with a significant decrease of erectile function at latest follow-up (9.7 months).

**Conclusion.** Lumbar spinal stenosis is associated with a neglected prevalence of erectile dysfunction.

Surprisingly, it does not improve after decompressive spinal surgery; moreover, a decline was observable. Underlying mechanisms of the postoperative decline remain obscure.

## **Comparison of intra-articular hyaluronic acid injections and mud-pack therapy in the treatment of knee osteoarthritis.**

Acta orthopaedica et traumatologica turcica [Add to My Journals List](#) 

2010 44(1):42-7 Language: eng Country: Turkey Department of Orthopedics, Gaziosmanpasa University, Tokat, Turkey. borabostan@gmail.com OBJECTIVES: Conservative treatment should be tried prior to surgical treatment in knee osteoarthritis. This study was designed to evaluate the short-term effects of mud-pack therapy on pain relief and functional improvement in knee osteoarthritis in comparison with intra-articular hyaluronic acid injections. METHODS: The study included 23 patients who were diagnosed as having knee osteoarthritis according to the ACR (American College of Rheumatology) criteria, and had complaints lasting for more than three months. All the patients had stage 2 or 3 osteoarthritis radiographically according to the Kellgren-Lawrence criteria. Twelve patients (3 males, 9 females; mean age 54+/-6 years; range 46 to 67 years) received mud therapy bilaterally. Mud packs were heated to 45 degrees C and applied on both knees for 30 minutes daily for a total of 12 weekdays. Eleven patients (2 males, 9 females; mean age 53+/-9 years; range 40 to 66 years) received a total of three bilateral intra-articular hyaluronic acid injections, each interspersed by weekly intervals. The patients were evaluated before and after treatment in terms of pain and functionality using the pain subscale of the WOMAC (Western Ontario and McMaster Universities) osteoarthritis index, Hospital for Special Surgery (HSS) score, and Knee Society clinical rating system (knee and function scores). The patients were followed-up for a mean of 5.9+/-6.3 months (range 4 to 8 months) after mud-pack therapy, and 5.8+/-0.8 months (range 5 to 7 months) after intra-articular hyaluronic acid injections. RESULTS: No significant differences were found between the two groups with respect to pre-and posttreatment WOMAC, HSS, and knee and function scores ( $p>0.05$ ). The scores of all instruments showed significant improvements following treatment in both groups ( $p<0.001$ ). Posttreatment changes in relation to baseline scores did not differ significantly between the two groups ( $p>0.05$ ). CONCLUSION: Treatment of knee osteoarthritis with intra-articular hyaluronic acid injections or mud-pack therapy yielded similar results in the short-term in terms of functional improvement and pain relief. Mud-pack therapy is a noninvasive, complication-free, and cost-effective alternative modality for the conservative treatment of knee osteoarthritis.

## **Mechanism of dynamic visual acuity recovery with vestibular rehabilitation.**

Archives of physical medicine and rehabilitation [Add to My Journals List](#) 

200803 89(3):500-7 Language: eng Country: United States Department of Otolaryngology Head and Neck Surgery, Johns Hopkins School of Medicine, Baltimore, MD 21287-0910, USA. mschube1@jhmi.edu OBJECTIVE: To determine why dynamic visual acuity (DVA) improves after vestibular rehabilitation in people with vestibular hypofunction. DESIGN: Combined descriptive and intervention study. SETTING: Outpatient department in an academic medical institution. PARTICIPANTS: Five patients (age, 42-66 y) and 4 age-matched controls (age, 39-67 y) were studied. Patients had vestibular hypofunction (mean duration, 177+/-188 d) identified by clinical (positive head thrust test, abnormal DVA), physiologic (reduced angular vestibulo-ocular reflex [aVOR] gain during passive head thrust testing), and imaging examinations (absence of tumor in the internal auditory canals or cerebellopontine angle). INTERVENTION: Vestibular rehabilitation focused on gaze and gait stabilization (mean, 5.0+/-1.4 visits; mean, 66+/-24 d). The control group did not receive any intervention. MAIN OUTCOME MEASURES: aVOR gain (eye velocity/head velocity) during DVA testing (active head rotation) and horizontal head thrust testing (passive head rotation) to control for spontaneous recovery. RESULTS: For all patients, DVA improved (mean, 51%+/-25%; range, 21%-81%). aVOR gain during the active DVA test increased in each of the patients (mean range, 0.7+/-0.2 to 0.9+/-0.2 [35%]). aVOR gain during passive head thrust did not improve in 3 patients and improved only partially in the other 2. For control subjects, aVOR gain during DVA was near 1. CONCLUSIONS: Our data suggest that vestibular rehabilitation increases aVOR gain during active head rotation independent of peripheral aVOR gain recovery.

## **Effectiveness of additional supervised exercises compared with conventional treatment alone in patients with acute lateral ankle sprains: systematic review.**

BMJ (Clinical research ed.) [Add to My Journals List](#) 

2010 341:c5688 Language: eng Country: England Department of General Practice, Erasmus MC, University Medical Center, PO Box 2040, 3000 CA Rotterdam, Rotterdam, Netherlands. r.vanrijn@erasmusmc.nl OBJECTIVE: To summarise the effectiveness of adding supervised exercises to conventional treatment compared with conventional treatment alone in patients with acute lateral ankle sprains. DESIGN: Systematic review. Data sources Medline, Embase, Cochrane Central Register of Controlled Trials, Cinahl, and reference screening. STUDY SELECTION: Included studies were randomised controlled trials, quasi-randomised controlled trials, or clinical trials. Patients were adolescents or adults with an acute lateral ankle sprain. The treatment options were conventional treatment alone or conventional treatment combined with supervised exercises. Two reviewers independently assessed the risk of bias, and one reviewer extracted data. Because of clinical heterogeneity we analysed the data using a best evidence synthesis. Follow-up was classified as short term (up to two weeks), intermediate (two weeks to three months), and long term (more than three months). RESULTS: 11 studies were included. There was limited to moderate evidence to suggest that the addition of supervised exercises to conventional treatment leads to faster and better recovery and a faster return to sport at short term follow-up than conventional treatment alone. In specific populations (athletes, soldiers, and patients with severe injuries) this evidence was restricted to a faster return to work and sport only. There was no strong evidence of effectiveness for any of the outcome measures. Most of the included studies had a high risk of bias, with few having adequate statistical power to detect clinically relevant differences. CONCLUSION: Additional supervised exercises compared with conventional treatment alone have some benefit for recovery and return to sport in patients with ankle sprain, though the evidence is limited or moderate and many studies are subject to bias.

## **The effects of eccentric versus concentric resistance training on muscle strength and mass in healthy adults: a systematic review with meta-analysis.**

British journal of sports medicine [Add to My Journals List](#) 

200908 43(8):556-68 Language: eng Country: England Department of Physical Therapy, University of British Columbia, Vancouver, Canada. markredj@interchange.ubc.ca The aim of this systematic review was to determine if eccentric exercise is superior to concentric exercise in stimulating gains in muscle strength and mass. Meta-analyses were performed for comparisons between eccentric and concentric training as means to improve muscle strength and mass. In order to determine the importance of different parameters of training, subgroup analyses of intensity of exercise, velocity of movement and mode of contraction were also performed. Twenty randomised controlled trials studies met the inclusion criteria. Meta-analyses showed that when eccentric exercise was performed at higher intensities compared with concentric training, total strength and eccentric strength increased more significantly. However, compared with concentric training, strength gains after eccentric training appeared more specific in terms of velocity and mode of contraction. Eccentric training performed at high intensities was shown to be more effective in promoting increases in muscle mass measured as muscle girth. In addition, eccentric training also showed a trend towards increased muscle cross-sectional area measured with magnetic resonance imaging or computerised tomography. Subgroup analyses suggest that the superiority of eccentric training to increase muscle strength and mass appears to be related to the higher loads developed during eccentric contractions. The specialised neural pattern of eccentric actions possibly explains the high specificity of strength gains after eccentric training. Further research is required to investigate the underlying mechanisms of this specificity and its functional significance in terms of transferability of strength gains to more complex human movements.

## **Is tai chi beneficial for improving aerobic capacity? A systematic review.**

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200908 43(8):569-73 Language: eng Country: England Department of Medical Research, Korea Institute of Oriental Medicine, Daejeon, South Korea. drmslee@gmail.com Tai chi has been claimed to generate beneficial effects with respect to a wide range of diseases. The purpose of this systematic review was to evaluate evidence from randomised clinical trials (RCTs) testing the effectiveness of tai chi for increasing aerobic capacity. Systematic searches were conducted on 14 electronic databases without restrictions on population characteristics or the language of publication. The outcome measures considered for inclusion were changes in maximal oxygen consumption as a test for aerobic capacity. Five RCTs met all inclusion criteria. Three RCTs compared the effects of tai chi with no treatment. The meta-analysis failed to show an effect of tai chi on aerobic capacity compared with sedentary controls (n = 151, weight mean difference, ml/kg/min, 0.50, 95% CI -1.14 to 2.15, p = 0.55). Two RCTs compared tai chi with conventional physical exercise including brisk, low intensity and moderate intensity walking, and aerobic exercise. The results show that tai chi was not statistically significantly superior to physical exercise. In conclusion, the existing evidence does not suggest that regular tai chi is an effective way of increasing aerobic capacity.

**Towards an outcome documentation in manual medicine: a first proposal of the International Classification of Functioning, Disability and Health (ICF) intervention categories for manual medicine based on a Delphi survey.**

European journal of physical and rehabilitation medicine [Add to My Journals List](#) 

200909 45(3):415-26 Language: eng Country: Italy Institute for Health and Rehabilitation Sciences, Ludwig-Maximilian University, Munich, Germany. AIM: The International Classification of Functioning, Disability and Health (ICF) provides a useful framework for the comprehensive description of the patients' functional health. The aim of this study was to identify the ICF categories that represent the patients' problems treated by manual medicine practitioners in order to facilitate its application in manual medicine. This selection of ICF categories could be used for assessment, treatment documentation and quality management in manual medicine practice. METHODS: Swiss manual medicine experts were asked about the patients' problems commonly treated by manual medicine practitioners in a three-round survey using the Delphi technique. Responses were linked to the ICF. RESULTS: Forty-eight manual medicine experts gave a total of 808 responses that were linked to 225 different ICF categories; 106 ICF categories which reached an agreement of at least 50% among the participants in the final Delphi-round were included in the set of ICF Intervention Categories for Manual Medicine; 42 (40%) of the categories are assigned to the ICF component body functions, 36 (34%) represent the ICF component body structures and 28 (26%) the ICF component activities and participation. CONCLUSION: A first proposal of ICF Intervention Categories for Manual Medicine was defined and needs to be validated in further studies.

## **Practical aspects of lifestyle modifications and behavioural interventions in the treatment of overactive bladder and urgency urinary incontinence.**

International journal of clinical practice [Add to My Journals List](#) 

200908 63(8):1177-91 Language: eng Country: England School of Nursing, University of Minnesota, 308 Harvard Street S.E., Minneapolis, MN 55455, USA. wyman002@umn.edu Behavioural interventions are effective treatments for overactive bladder (OAB) and urgency urinary incontinence (UUI). They are in part aimed at improving symptoms with patient education on healthy bladder habits and lifestyle modifications, including the establishment of normal voiding intervals, elimination of bladder irritants from the diet, management of fluid intake, weight control, management of bowel regularity and smoking cessation. Behavioural interventions also include specific training techniques aimed at re-establishing normal voiding intervals and continence. Training techniques include bladder training, which includes a progressive voiding schedule together with relaxation and distraction for urgency suppression, and multicomponent behavioural training, which, in conjunction with pelvic floor muscle (PFM) exercises, includes PFM contraction to control urgency and increase the interval between voids. Guidelines for the conservative treatment of OAB and UUI have been published by several organisations and the physiological basis and evidence for the effectiveness of behavioural interventions, including lifestyle modifications, in the treatment of OAB and UUI have been described. However, many primary care clinicians may have a limited awareness of the evidence supporting the often straight-forward treatment recommendations and guidance for incorporating behavioural interventions into busy primary care practices, because most of this information has appeared in the specialty literature. The purpose of this review is to provide an overview of behavioural interventions for OAB and UUI that can be incorporated with minimal time and effort into the treatment armamentarium of all clinicians that care for patients with bladder problems. Practical supporting materials that will facilitate the use of these interventions in the clinic are included; these can be used to help patients understand lifestyle choices and voiding behaviours that may improve function in patients experiencing OAB symptoms and/or UUI as well as promote healthy bladder behaviours and perhaps even prevent future bladder problems. Interventions for stress urinary incontinence are beyond the scope of this review.

## **Pelvic floor muscle assessment outcomes in women with and without provoked vestibulodynia and the impact of a physical therapy program.**

The journal of sexual medicine [Add to My Journals List](#) 

201002 7(2 Pt 2):1003-22 Language: eng Country: United States School of Rehabilitation Therapy, Queen's University, Kingston, Ontario K7L3N6, Canada. INTRODUCTION: Physical therapy (PT) may reduce the pain associated with provoked vestibulodynia (PVD) based on previous findings that pelvic floor muscle dysfunction (PFMD) is associated with PVD symptoms. AIMS: The goals of this study were: (i) to determine whether women with and without PVD differ on measures of pelvic floor muscle (PFM) behavior; and (ii) to assess the impact of PT treatment for women with PVD on these measures. METHODS: Eleven women with PVD and 11 control women completed an assessment evaluating PFM behavior using surface electromyography (SEMG) recordings and a digital intravaginal assessment. Women with PVD repeated the assessment after they had undergone eight PT treatment sessions of manual therapy, biofeedback, electrical stimulation, dilator insertions, and home exercises. MAIN OUTCOME MEASURES: Superficial and deep PFM SEMG tonic activity and phasic activity in response to a painful pressure stimulus, PFM digital assessment variables (tone, flexibility, relaxation capacity, and strength). RESULTS: At pretreatment, women with PVD had higher tonic SEMG activity in their superficial PFMs compared with the control group, whereas no differences were found in the deep PFMs. Both groups demonstrated contractile responses to the painful pressure stimulus that were significantly higher in the superficial as compared with the deep PFMs, with the responses in the PVD group being higher than those in control women. Women with PVD had higher PFM tone, decreased PFM flexibility and lower PFM relaxation capacity compared with control women. Posttreatment improvements included less PFM responsiveness to pain, less PFM tone, improved vaginal flexibility, and improved PFM relaxation capacity, such that women with PVD no longer differed from controls on these measures. CONCLUSION: Women with PVD demonstrated altered PFM behavior when compared with controls, providing empirical evidence of PFMD, especially at the superficial layer. A PT rehabilitation program specifically targeting PFMD normalized PFM behavior in women with PVD.

## **Take a deep breath: the relief effect of spontaneous and instructed sighs.**

Physiology & behavior [Add to My Journals List](#) 

20100800 101(1):67-73 Language: eng Country: United States Research Group on Health Psychology, Department of Psychology, University of Leuven, Belgium.  
elke.vlemincx@psy.kuleuven.be Spontaneous sighing is related to subjective relief of negative emotional states. Whether this also applies to instructed sighing is not known. The present study aimed to investigate sEMG and respiratory variability (1) during recovery from mental stress with and without an instructed sigh; (2) before and after spontaneous sighs throughout the experiment. A spontaneous sigh was preceded by increasing sEMG and increasing random respiratory variability, and followed by decreasing sEMG and increased structured correlated respiratory variability. Following an instructed sigh, a smaller reduction in sEMG and an increase in random respiratory variability during recovery from mental stress were observed. Thus, a spontaneous sigh seemed to induce relief. An instructed sigh appeared to inhibit recovery from mental stress.

## **Postural compensation for vestibular loss and implications for rehabilitation.**

Restorative neurology and neuroscience [Add to My Journals List](#) 

2010 28(1):57-68 Language: eng Country: Netherlands Department of Neurology and Biomechanical Engineering, Oregon Health and Science University, 3181 SW Sam Jackson Park Road OP32, Portland, OR 97239, USA. horaf@ohsu.edu PURPOSE: This chapter summarizes the role of the vestibular system in postural control so that specific and effective rehabilitation can be designed that facilitates compensation for loss of vestibular function. METHODS: Patients with bilateral or unilateral loss of peripheral vestibular function are exposed to surface perturbations to quantify automatic postural responses. Studies also evaluated the effects of audio- and vibrotactile-biofeedback to improve stability in stance and gait. RESULTS: The most important role of vestibular information for postural control is to control orientation of the head and trunk in space with respect to gravito-inertial forces, particularly when balancing on unstable surfaces. Vestibular sensory references are particularly important for postural control at high frequencies and velocities of self-motion, to reduce trunk drift and variability, to provide an external reference frame for the trunk and head in space; and to uncouple coordination of the trunk from the legs and the head-in-space from the body CoM. CONCLUSIONS: The goal of balance rehabilitation for patients with vestibular loss is to help patients 1) use remaining vestibular function, 2) depend upon surface somatosensory information as their primary postural sensory system, 3) learn to use stable visual references, and 4) identify efficient and effective postural movement strategies.

## Overactive pelvic floor syndrome

**Background.** The etiology of the overactive pelvic floor syndrome is not fully understood and no gold standards are available for diagnosis or treatment. The article presents an overview of literature, and discusses diagnostics and treatment.

**Material and methods.** Literature was identified through a non-systematic search in PubMed, and discussed in light of the authors' clinical experience with the patient group.

**Results.** The main symptoms of overactive pelvic floor syndrome are pain and defecation difficulties; the latter often leads to chronic constipation. Other symptoms depend on which parts of the pelvic floor that are most affected. Pain is often chronic and ranges from mild to severe; it is aggravated by micturition, sexual intercourse, orgasm, defecation and sitting on hard surfaces, and reduces the ability to work and quality of life in general. Injection of Botulinum toxin in the pelvic floor muscles seems to alleviate pain in many patients. Physiotherapy of the pelvic floor and treatment offered by pain clinics can also be useful.

**Interpretation.** A close cooperation between gastroenterologists, surgeons, urologists, gynecologists, neurologists, physiotherapists and possibly pain clinics is important to improve the situation for these patients.

