

## ABSTRACTS

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## 2. LBP

### Disability and LBP

Pain. 2015 Jun;156(6):988-97. doi: 10.1097/j.pain.000000000000146.

#### **How does pain lead to disability? A systematic review and meta-analysis of mediation studies in people with back and neck pain.**

Lee H<sup>1</sup>, Hübscher M, Moseley GL, Kamper SJ, Traeger AC, Mansell G, McAuley JH.  
Author information

#### Abstract

Disability is an important outcome from a clinical and public health perspective. However, it is unclear how disability develops in people with low back pain or neck pain. More specifically, the mechanisms by which pain leads to disability are not well understood. Mediation analysis is a way of investigating these mechanisms by examining the extent to which an intermediate variable explains the effect of an exposure on an outcome. This systematic review and meta-analysis aimed to identify and examine the extent to which putative mediators explain the effect of pain on disability in people with low back pain or neck pain. Five electronic databases were searched.

We found 12 studies (N = 2961) that examined how pain leads to disability with mediation analysis. Standardized regression coefficients ( $\beta$ ) of the indirect and total paths were pooled. We found evidence to show that self-efficacy ( $\beta = 0.23$ , 95% confidence interval [CI] = 0.10 to 0.34), psychological distress ( $\beta = 0.10$ , 95% CI = 0.01 to 0.18), and fear ( $\beta = 0.08$ , 95% CI = 0.01 to 0.14) mediated the relationship between pain and disability, but catastrophizing did not ( $\beta = 0.07$ , 95% CI = -0.06 to 0.19). The methodological quality of these studies was low, and we highlight potential areas for development.

Nonetheless, the results suggest that there are significant mediating effects of self-efficacy, psychological distress, and fear, which underpins the direct targeting of these constructs in treatment.

PMID: 25760473

Tampa Kinesiophobia test

Clin J Pain. 2015 Jul;31(7):621-32. doi: 10.1097/AJP.000000000000143.

**What Do People Who Score Highly on the Tampa Scale of Kinesiophobia Really Believe?: A Mixed Methods Investigation in People With Chronic Nonspecific Low Back Pain.**

Bunzli S<sup>1</sup>, Smith A, Watkins R, Schütze R, O'Sullivan P.  
Author information

Abstract

**OBJECTIVES:**

The Tampa Scale of Kinesiophobia (TSK) has been used to identify people with back pain who have high levels of "fear of movement" to direct them into fear reduction interventions. However, there is considerable debate as to what construct(s) the scale measures. Somatic Focus and Activity Avoidance subscales identified in factor analytic studies remain poorly defined. Using a mixed methods design, this study sought to understand the beliefs that underlie high scores on the TSK to better understand what construct(s) it measures.

**METHODS:**

In-depth qualitative interviews with 36 adults with chronic nonspecific low back pain (average duration=7 y), scoring highly on the TSK (average score=47/68), were conducted. Following inductive analysis of transcripts, individuals were classified into groups on the basis of underlying beliefs. Associations between groups and itemized scores on the TSK and subscales were explored. Frequencies of response for each item were evaluated.

**FINDINGS:**

Two main beliefs were identified: (1) The belief that painful activity will result in damage; and (2) The belief that painful activity will increase suffering and/or functional loss. The Somatic Focus subscale was able to discriminate between the 2 belief groups lending construct validity to the subscale. Ambiguous wording of the Activity Avoidance subscale may explain limitations in discriminate ability.

**DISCUSSION:**

The TSK may be better described as a measure of the "beliefs that painful activity will result in damage and/or increased suffering and/or functional loss."

PMID:25167327

**Continuing educations impact on PT practice in LBP****Knowledge translation from continuing education to physiotherapy practice in classifying patients with low back pain**

Eira Karvonen ; Markku Paatelma ; Jukka-Pekka Kesonen ; Ari O. Heinonen

Author Affiliations

\*Corresponding author: eira.karvonen@kolumbus.fi

Faculty of Sports and Health Sciences, University of Jyväskylä, Jyväskylä, Finland

Keywords: Knowledge translation, Low back pain, Clinical examination, Clinical reasoning, Pathoanatomical classification, Continuing education

DOI: <http://dx.doi.org/10.1179/2042618614Y.0000000091>

Volume 23, Issue 2 (May 2015), pp. 68-74 JMMT

**Abstract****Objectives:**

Physical therapists have used continuing education as a method of improving their skills in conducting clinical examination of patients with low back pain (LBP). The purpose of this study was to evaluate how well the pathoanatomical classification of patients in acute or subacute LBP can be learned and applied through a continuing education format. The patients were seen in a direct access setting.

**Methods:**

The study was carried out in a large health-care center in Finland. The analysis included a total of 57 patient evaluations generated by six physical therapists on patients with LBP. We analyzed the consistency and level of agreement of the six physiotherapists' (PTs) diagnostic decisions, who participated in a 5-day, intensive continuing education session and also compared those with the diagnostic opinions of two expert physical therapists, who were blind to the original diagnostic decisions. Evaluation of the physical therapists' clinical examination of the patients was conducted by the two experts, in order to determine the accuracy and percentage agreement of the pathoanatomical diagnoses.

**Results:**

The percentage of agreement between the experts and PTs was 72–77%. The overall inter-examiner reliability (kappa coefficient) for the subgroup classification between the six PTs and two experts was 0.63 [95% confidence interval (CI): 0.47–0.77], indicating good agreement between the PTs and the two experts. The overall inter-examiner reliability between the two experts was 0.63 (0.49–0.77) indicating good level of agreement.

**Discussion:**

Our results indicate that PTs' were able to apply their continuing education training to clinical reasoning and make consistently accurate pathoanatomic based diagnostic decisions for patients with LBP. This would suggest that continuing education short-courses provide a reasonable format for knowledge translation (KT) by which physical therapists can learn and apply new information related to the examination and differential diagnosis of patients in acute or subacute LBP.

Keywords: Knowledge translation, Low back pain, Clinical examination, Clinical reasoning, Pathoanatomical classification, Continuing education

**Validity of pain drawings****Validity of pain drawings for predicting psychological status outcome in patients with recurrent or chronic low back pain**

J.H. Abbott<sup>1</sup>; Megan Foster<sup>2</sup>; Lucien Hamilton<sup>2</sup>; Michael Ravenwood<sup>2</sup>; Nicholas Tan<sup>2</sup>

Author Affiliations

Keywords: Patient examination, Prognosis, Pain drawing, Low back pain, Psychological state

DOI: <http://dx.doi.org/10.1179/2042618613Y.0000000046>

JMMT Volume 23, Issue 1 (February 2015), pp. 12-19

**Abstract****Objectives:**

To investigate the association between baseline pain drawings and future psychological status, and estimate the prognostic value of pain drawing assessment for predicting somatization, distress, and depression at one-year follow-up, in patients with recurrent or chronic low back pain (RCLBP).

**Methods:**

This was a multi-center prospective cohort study of 138 patients with RCLBP. Participating patients completed at baseline and one-year follow-up: a blank pain drawing; the Modified Somatic Perceptions Questionnaire; modified Zung Depression Scale; and Distress and Risk Assessment Method. Pain drawings were analyzed quantitatively using the Pain Sites Score (PSS) and Simple Body Region (SBR) method. The association between baseline pain drawing assessment and one-year psychological status was estimated using correlation and Relative Risk (RR) statistics.

**Results:**

We obtained complete data from 81 patients (59%). Psychological status and pain drawings did not differ significantly between completers and non-completers. Pain drawing area at baseline was associated with depression and somatization at one-year follow-up (Spearman's Rho 0.25,  $P=0.022$ ; 0.31  $P=0.006$ , respectively). Stronger associations resulted from analyses using the PSS, compared with the SBR. Patients with abnormal PSS pain drawings at baseline had significantly greater RR of depression (RR 6.1, 95% CI 1.1, 33.5), somatization (RR 4.1, 95% CI 1.7, 9.9) and distress (RR 6.8, 95% CI 1.9, 25.3) at one-year follow-up.

**Discussion:**

These results provide the first evidence that abnormal baseline pain drawings predict greater risk of abnormal psychological states or poor psychological outcome at one-year follow-up, in patients with RCLBP.

Keywords: Patient examination, Prognosis, Pain drawing, Low back pain, Psychological state

## Primary care model

Phys Ther. 2015 Apr 9.

**Pragmatic Implementation of a Stratified Primary Care Model for Low Back Pain Management in Outpatient Physical Therapy Settings: Two-Phase, Sequential Preliminary Study.**

Beneciuk JM<sup>1</sup>, George SZ<sup>2</sup>.

Author information

<sup>1</sup>J.M. Beneciuk, PT, PhD, MPH, Department of Physical Therapy, University of Florida, PO Box 100154, Gainesville, FL 32610 (USA), and Brooks Rehabilitation-College of Public Health and Health Professions Research Collaboration, Jacksonville, Florida.

<sup>2</sup>S.Z. George, PT, PhD, Department of Physical Therapy, University of Florida, and Brooks Rehabilitation-College of Public Health and Health Professions Research Collaboration.

## Abstract

**BACKGROUND:** The effectiveness of risk stratification for low back pain (LBP) management has not been demonstrated in outpatient physical therapy settings.

**OBJECTIVE:** The purposes of this study were: (1) to assess implementation of a stratified care approach for LBP management by evaluating short-term treatment effects and (2) to determine feasibility of conducting a larger-scale study.

**DESIGN:** This was a 2-phase, preliminary study.

**METHODS:** In phase 1, clinicians were randomly assigned to receive standard (n=6) or stratified care (n=6) training. Stratified care training included 8 hours of content focusing on psychologically informed practice. Changes in LBP attitudes and beliefs were assessed using the Pain Attitudes and Beliefs Scale for Physiotherapists (PABS-PT) and the Health Care Providers Pain and Impairment Relationship Scale (HC-PAIRS). In phase 2, clinicians receiving the stratified care training were instructed to incorporate those strategies in their practice and 4-week patient outcomes were collected using a numerical pain rating scale (NPRS), and the Oswestry Disability Index (ODI). Study feasibility was assessed to identify potential barriers for completion of a larger-scale study.

**RESULTS:** In phase 1, minimal changes were observed for PABS-PT and HC-PAIRS scores for standard care clinicians (Cohen  $d=0.00-0.28$ ). Decreased biomedical ( $-4.5\pm 2.5$  points,  $d=1.08$ ) and increased biopsychosocial ( $+5.5\pm 2.0$  points,  $d=2.86$ ) treatment orientations were observed for stratified care clinicians, with these changes sustained 6 months later on the PABS-PT. In phase 2, patients receiving stratified care (n=67) had greater between-group improvements in NPRS (0.8 points; 95% confidence interval=0.1, 1.5;  $d=0.40$ ) and ODI (8.9% points; 95% confidence interval=4.1, 13.6;  $d=0.76$ ) scores compared with patients receiving standard physical therapy care (n=33).

**LIMITATIONS:** In phase 2, treatment was not randomly assigned, and therapist adherence to treatment recommendations was not monitored. This study was not adequately powered to conduct subgroup analyses.

**CONCLUSIONS:** In physical therapy settings, biomedical orientation can be modified, and risk-stratified care for LBP can be effectively implemented. Findings from this study can be used for planning of larger studies.

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PMID: 25858972

### 3. DISC

Impact on disc of side gliding

#### **Comparable effect of simulated side bending and side gliding positions on the direction and magnitude of lumbar disc hydration shift: in vivo MRI mechanistic study**

Hiroshi Takasaki 1, 2

Author Affiliations

DOI: <http://dx.doi.org/10.1179/2042618613Y.0000000059>

JMMT Volume 23, Issue 2 (May 2015), pp. 101-108

Abstract

Objectives:

To investigate the direction and magnitude of mechanical influence to the lumbar disc in side bending and side gliding positions by considering shift of disc hydration.

Methods:

Twenty asymptomatic subjects completed this study. Direction of the hydration shift ( $\theta$ ), magnitude of the shift, and segmental lateral flexion and rotation angles from L1/L2 to L5/S1 during left side bend and side glide in lying were measured by magnetic resonance imaging (MRI) and compared using paired t-tests.

Results:

A significant difference ( $P < 0.001$ ) was detected in the segmental lateral flexion angle at L1/L2 between the side bending position (mean [SD],  $5.1^\circ$  [ $2.2^\circ$ ] left lateral flexion) and the side gliding position (mean [SD],  $2.1^\circ$  [ $2.7^\circ$ ] left lateral flexion). However, there was neither significant difference ( $P > 0.05$ ) in the lateral flexion angle at other segments nor rotation angles at each segment between the two lumbar positions. There was also no significant difference ( $P > 0.05$ ) in the  $\theta$  value and magnitude of the hydration shift between the two lumbar positions. The disc hydration generally shifted to the right in the left side bending and side gliding positions at all disc levels.

Discussion:

This is the first study to investigate mechanical influence to each lumbar disc in the side gliding position using the shift of disc hydration on axial MRI. The comparability in the direction and magnitude of the hydration shift in the side bending and side gliding positions indicates that the maneuver of side gliding can produce comparable ipsilateral mechanical influence to each lumbar disc in comparison to side bending.

## 4. INJECTIONS

### Epidural

Am J Ther. 2015 May 27.

#### **Epidural Injection With or Without Steroid in Managing Chronic Low-Back and Lower Extremity Pain: A Meta-Analysis of 10 Randomized Controlled Trials.**

Zhai J<sup>1</sup>, Zhang L, Li M, Tian Z, Tian Y, Zheng W, Chen J, Huang T, Li X.  
Author information

#### Abstract

Chronic low-back and lower extremity pain is mainly caused by lumbar disc herniation and radiculitis. Various surgery and nonsurgical modalities, including epidural injections, have been used to treat lumbar disc herniation or radiculitis. Therefore, we conducted this meta-analysis to assess the effects of the 2 interventions in managing various chronic low and lower extremity pain. A systematic literature search was conducted to identify randomized controlled trials, which compared the effect of local anesthetic with or without steroids. The outcomes included pain relief, functional improvement, opioid intake, and therapeutic procedural characteristics. Pooled estimates were calculated using a random-effects or fixed-effects model, depending on the heterogeneity between the included studies. Ten randomized controlled trials (involving 1111 patients) were included in this meta-analysis.

The pooled results showed that 41.7% of patients who received local anesthetic with steroid (group 1) and 40.2% of patients who received local anesthetic alone (group 2) had significant improvement in pain relief, and the Numeric Rating Scale pain scales were significantly reduced by 4.09 scores [95% confidence interval (CI), -4.26 to -3.91] and 4.12 (95% CI, -4.35 to -3.89) scores, respectively. Similarly, 39.8% of patients in group 1 and 40.7% in group 2 achieved significantly improved functional status. The Oswestry Disability Indices in the 2 groups were reduced by 14.5 (95% CI, -15.24 to -13.75) and 12.37 (95% CI, -16.13 to -8.62), respectively. The average procedures per year in group 1 were  $3.68 \pm 1.17$  and  $3.68 \pm 1.26$  in group 2, with an average total relief per year of  $31.67 \pm 13.17$  and  $32.64 \pm 13.92$  weeks, respectively. The opioid intake decreased from baseline by 8.81 mg (95% CI, -12.24 to -5.38) and 16.92 mg (95% CI: -22.71 to -11.12) in the 2 groups, respectively.

This meta-analysis confirms that epidural injections of local anesthetic with or without steroids have beneficial but similar effects in the treatment of patients with chronic low-back and lower extremity pain.

PMID: 26035031

## 5. SURGERY

### Depression and outcomes

Eur J Orthop Surg Traumatol. 2015 May 22.

#### **Responsiveness of depression and its influence on surgical outcomes of lumbar degenerative diseases.**

Falavigna A<sup>1</sup>, Righesso O, Teles AR, Conzati LP, Bossardi JB, da Silva PG, Cheng JS.  
Author information

Abstract

#### **OBJECTIVE:**

To demonstrate the responsiveness of depression after surgery for lumbar degenerative disease and to verify the impact of this condition on surgical outcomes.

#### **PATIENT SAMPLE:**

A prospective cohort study with 91 patients with lumbar degenerative diseases who were evaluated preoperatively, at 30 days and 1 year postoperatively.

#### **OUTCOME MEASURES:**

Evolution of depression between the follow-ups and its correlation with satisfaction.

#### **METHODS:**

Depression was assessed with Beck Depression Inventory. According to depression responsiveness, patients were classified into four groups: NN = no depression; ND = normal during the preoperative period and depression within 1 year; DN = depression during the preoperative period and normal within 1 year; DD = depression during the preoperative period and within 1 year.

#### **RESULTS:**

Prevalence of preoperative depression was 28.6 % and 17.6 % within 1 year postoperatively. Most patients (65.4 %) with depression in the preoperative period recovered postoperatively. Poor preoperative HRQoL measures were associated with higher rates of responsiveness of depression during the follow-up. Patients with depression at the 1-year postoperative follow-up had a worse functional outcome. Patients who improved from depression had similar outcome to those without depression. Dissatisfaction within 1 year postoperatively was greater in patients who become depressed after surgery and remain depressed at 1-year follow-up (NN = 8.8 %; ND = 42.9 %; DN = 17.6 %; DD = 44.4 %; P = 0.012).

#### **CONCLUSION:**

Most patients with depression in the preoperative recover within 1 year postoperatively. Responsiveness of depression is associated with surgical outcomes. The presence of depression after the surgical treatment, independent of when it starts, had a major negative impact on prognosis.

PMID:25999151

## 6. PELVIC GIRDLE

### Active SLR

Clin J Pain. 2015 Jul;31(7):642-51. doi: 10.1097/AJP.000000000000139.

### **Experimental Pelvic Pain Impairs the Performance During the Active Straight Leg Raise Test and Causes Excessive Muscle Stabilization.**

Palsson TS<sup>1</sup>, Hirata RP, Graven-Nielsen T.

#### Author information

<sup>1</sup>Laboratory for Musculoskeletal Pain and Motor Control, Department of Health Science and Technology, Center for Sensory-Motor Interaction (SMI), Faculty of Medicine, Aalborg University, Denmark.

#### Abstract

#### **OBJECTIVES:**

The active straight leg raise (ASLR) test is widely used clinically to assess severity of lumbopelvic pain due to decreased stability of the sacroiliac joint (SIJ). This study aimed to bypass the influence of decreased SIJ stability on the ASLR test by investigating the effect of experimental pelvic pain and hyperalgesia on the outcome of the ASLR test.

#### **METHODS:**

Thirty-four healthy participants took part in this randomized crossover study. Pelvic pain was induced by injecting hypertonic saline into the long posterior sacroiliac ligament. Isotonic saline was injected on the contralateral side as control. Pain intensity was assessed on an electronic visual analogue scale. The Likert scores of difficulty performing the ASLR test and simultaneous electromyography of trunk and thigh muscles were recorded before, during, and postpain. Pressure pain thresholds were assessed bilaterally in the pelvic area and lower limb.

#### **RESULTS:**

Compared with the control condition and baseline, hypertonic saline injections caused ( $P < 0.05$ ): (1) higher visual analogue scale scores of the pain intensity; (2) reduced pressure pain thresholds at the injection site and lateral to S2; (3) increased difficulty in performing the ASLR rated on the Likert scale; and (4) bilateral increase in the electromyography activity of stabilizing trunk and thigh muscles during pain.

#### **DISCUSSION:**

These data demonstrate that pain and hyperalgesia in conditions unaffected by biomechanical SIJ impairments change the outcome of the ASLR test toward what is seen in clinical lumbopelvic pain. This may implicate pain-related changes in motor control strategies potentially relevant for the transition from acute into chronic pain.

PMID: 25119510

## 8. VISCERA

### Celiac disease recovery

Am J Gastroenterol. 2015 Jun 2. doi: 10.1038/ajg.2015.155.

#### **Predictors and Significance of Incomplete Mucosal Recovery in Celiac Disease After 1 Year on a Gluten-Free Diet.**

Pekki H<sup>1</sup>, Kurppa K<sup>2</sup>, Mäki M<sup>2</sup>, Huhtala H<sup>3</sup>, Sievänen H<sup>4</sup>, Laurila K<sup>2</sup>, Collin P<sup>5</sup>, Kaukinen K<sup>6</sup>.  
Author information

Abstract

#### **OBJECTIVES:**

In celiac disease, a follow-up biopsy taken 1 year after diagnosis is considered important in monitoring histological recovery. In many cases, recovery is incomplete, and the clinical significance of this is poorly understood. We now investigated associated factors and the significance of imperfect histological recovery in patients in whom the follow-up had been completed.

#### **METHODS:**

Two hundred sixty-three biopsy-proven patients were divided into two groups: histological recovery and incomplete recovery after 1 year on gluten-free diet. Serology, laboratory values, bone mineral density, and different clinical variables were measured at diagnosis and after 1 year. Gastrointestinal symptoms and quality of life were assessed by validated questionnaires. Further, long-term follow-up data on mortality, malignancies, and other severe complications were collected.

#### **RESULTS:**

The incomplete recovery group had more severe mucosal damage ( $P=0.003$ ), higher antibody values ( $P=0.017$ ), and more signs of malabsorption ( $P<0.001$ ) at diagnosis. There was no difference in gender, symptoms or quality of life, family history of celiac disease, or comorbidities. At follow-up, there was still a difference in antibodies ( $P=0.018$ ) and femoral T-scores ( $P=0.024$ ). Histologically recovered patients showed better dietary adherence, although it was excellent in both groups (97% vs. 87%,  $P<0.001$ ). There was no difference in long-term outcomes between groups.

#### **CONCLUSIONS:**

The presence of more severe disease in terms of histology, serology, and signs of malabsorption was associated with histological non-response. In patients with high dietary adherence, incomplete villous recovery after 1 year does not affect the clinical response or long-term prognosis. A personalized approach is required to decide the optimal timing of the follow-up biopsy. Am J Gastroenterol advance online publication, 2 June 2015; doi:10.1038/ajg.2015.155.

PMID:26032154

### Gut and HA's

Curr Pain Headache Rep. 2015 Jul;19(7):501. doi: 10.1007/s11916-015-0501-4.

#### **What the Gut Can Teach Us About Migraine.**

Hindiye N<sup>1</sup>, Aurora SK.

Author information

#### Abstract

During gestation, cells of the brain and gut develop almost simultaneously into the central nervous system (CNS) and enteric nervous system (ENS), respectively. They remain connected via the vagal nerve lifelong. While it is well known that the brain sends signal to the gut, communication is in fact bidirectional. Just as the brain can modulate gut functioning, the gut, and likely what we ingest, can in fact influence our brain functioning. We will first review both gastrointestinal (GI) function and migraine pathophysiology and then discuss evidence linking the migraine brain to various GI disorders. Lastly, we discuss the effects of gut microbiota on brain functioning and speculate how the gut and particularly diet may affect migraine.

PMID:26049770

## Prostrate cancer

Eur Urol. 2015 Jun;67(6):1028-38. doi: 10.1016/j.eururo.2014.09.032. Epub 2014 Oct 6.

**Survival with Newly Diagnosed Metastatic Prostate Cancer in the "Docetaxel Era": Data from 917 Patients in the Control Arm of the STAMPEDE Trial (MRC PR08, CRUK/06/019).**

James ND<sup>1</sup>, Spears MR<sup>2</sup>, Clarke NW<sup>3</sup>, Dearnaley DP<sup>4</sup>, De Bono JS<sup>4</sup>, Gale J<sup>5</sup>, Hetherington J<sup>6</sup>, Hoskin PJ<sup>7</sup>, Jones RJ<sup>8</sup>, Laing R<sup>9</sup>, Lester JF<sup>10</sup>, McLaren D<sup>11</sup>, Parker CC<sup>4</sup>, Parmar MK<sup>2</sup>, Ritchie AW<sup>2</sup>, Russell JM<sup>12</sup>, Streibel RT<sup>13</sup>, Thalmann GN<sup>14</sup>, Mason MD<sup>10</sup>, Sydes MR<sup>2</sup>.

Author information

Abstract

**BACKGROUND:**

Prostate cancer (PCa) is the second most common disease among men worldwide. It is important to know survival outcomes and prognostic factors for this disease. Recruitment for the largest therapeutic randomised controlled trial in PCa-the Systemic Therapy in Advancing or Metastatic Prostate Cancer: Evaluation of Drug Efficacy: A Multi-Stage Multi-Arm Randomised Controlled Trial (STAMPEDE)-includes men with newly diagnosed metastatic PCa who are commencing long-term androgen deprivation therapy (ADT); the control arm provides valuable data for a prospective cohort.

**OBJECTIVE:**

Describe survival outcomes, along with current treatment standards and factors associated with prognosis, to inform future trial design in this patient group.

**DESIGN, SETTING, AND PARTICIPANTS:** STAMPEDE trial control arm comprising men newly diagnosed with M1 disease who were recruited between October 2005 and January 2014.

**OUTCOME MEASUREMENTS AND STATISTICAL ANALYSIS:** Overall survival (OS) and failure-free survival (FFS) were reported by primary disease characteristics using Kaplan-Meier methods. Hazard ratios and 95% confidence intervals (CIs) were derived from multivariate Cox models.

**RESULTS AND LIMITATIONS:** A cohort of 917 men with newly diagnosed M1 disease was recruited to the control arm in the specified interval. Median follow-up was 20 mo. Median age at randomisation was 66 yr (interquartile range [IQR]: 61-71), and median prostate-specific antigen level was 112 ng/ml (IQR: 34-373). Most men (n=574; 62%) had bone-only metastases, whereas 237 (26%) had both bone and soft tissue metastases; soft tissue metastasis was found mainly in distant lymph nodes. There were 238 deaths, 202 (85%) from PCa. Median FFS was 11 mo; 2-yr FFS was 29% (95% CI, 25-33). Median OS was 42 mo; 2-yr OS was 72% (95% CI, 68-76). Survival time was influenced by performance status, age, Gleason score, and metastases distribution. Median survival after FFS event was 22 mo. Trial eligibility criteria meant men were younger and fitter than general PCa population.

**CONCLUSIONS:** Survival remains disappointing in men presenting with M1 disease who are started on only long-term ADT, despite active treatments being available at first failure of ADT. Importantly, men with M1 disease now spend the majority of their remaining life in a state of castration-resistant relapse.

**PATIENT SUMMARY:** Results from this control arm cohort found survival is relatively short and highly influenced by patient age, fitness, and where prostate cancer has spread in the body.

**KEYWORDS:** Control arm cohort; Hormone-naïve; Metastatic; Natural history; Prognostic factors; Prospective data; Prostate cancer; Survival; Time to progression

PMID:25301760

**Celiac disease**

Dig Dis. 2015;33(2):175-82. doi: 10.1159/000369504. Epub 2015 Apr 22.

**Celiac disease and the gluten-free diet: consequences and recommendations for improvement.**

Theethira TG1, Dennis M.

Author information

Abstract

**BACKGROUND:**

Celiac disease (CD) is a chronic small intestinal immune-mediated enteropathy precipitated by exposure to dietary gluten in genetically susceptible individuals. CD-related enteropathy leads to multiple nutritional deficiencies involving macro- and micronutrients. Currently, medical nutrition therapy consisting of the gluten-free diet (GFD) is the only accepted treatment for CD. Key Messages: The GFD is the cornerstone of treatment for CD. Prior published studies have concluded that maintenance of the GFD results in improvement of the majority of nutritional deficiencies. In the past, counseling for CD focused mainly on the elimination of gluten in the diet. However, the GFD is not without its inadequacies; compliance to the GFD may result in certain deficiencies such as fiber, B vitamins, iron, and trace minerals. Paucity of fortified gluten-free foods may be responsible for certain deficiencies which develop on the GFD. Weight gain and obesity have been added to the list of nutritional consequences while on the GFD and have been partially attributed to hypercaloric content of commercially available gluten-free foods. Follow-up of patients diagnosed with CD after starting the GFD has been reported to be irregular and, hence, less than ideal.

**CONCLUSIONS:**

Monitoring of the nutritional status using blood tests and use of appropriate gluten-free supplementation are integral components in the management of CD. The ideal GFD should be nutrient-dense with naturally gluten-free foods, balanced with macro- and micronutrients, reasonably priced, and easily accessible. Rotation of the pseudo-cereals provides a good source of complex carbohydrates, protein, fiber, fatty acids, vitamins and minerals. Fortification/enrichment of commonly consumed gluten-free commercial grain products should be encouraged. Dietitians specializing in CD play a critical role in the education and maintenance of the GFD for patients with CD. © 2015 S. Karger AG, Basel.

PMID:25925920

**IBS poultices**

Digestion. 2015 Jun 5;92(1):22-31

**Efficacy of Caraway Oil Poultices in Treating Irritable Bowel Syndrome - A Randomized Controlled Cross-Over Trial.**

Lauche R<sup>1</sup>, Janzen A, Lüdtke R, Cramer H, Dobos G, Langhorst J.  
Author information

Abstract

**BACKGROUND/AIM:**

Irritable bowel syndrome (IBS) is a frequent gastrointestinal disorder, with only limited evidence regarding self-management approaches. This study tested the efficacy of caraway oil poultices (CarO) for treating IBS.

**METHODS:**

This randomized controlled open-label cross-over trial included three treatment periods with hot CarO and hot olive oil poultice (OlivH) or nonheated poultices (OlivC) with olive oil as control interventions. Patients applied each intervention daily for 3 weeks. The primary outcome was symptom severity (IBS-SSS); secondary outcomes included responder rates (improvement  $\geq 50$  IBS-SSS), quality of life (EQ-5D, IBS-QOL), psychological distress (HADS), adequate relief, and safety.

**RESULTS:**

48 patients with IBS were included (40 females,  $53.9 \pm 14.4$  years). A significant difference was found for symptom severity in favor of CarO compared to OlivC (difference -38.4, 95% CI -73.6, -3.1,  $p = 0.033$ ), but not compared to OlivH (difference -24.3, 95% CI -56.5, 7.9,  $p = 0.139$ ). Responder rates were highest for CarO compared to OlivH and OlivC (43.9, 20.0, 18.9%, respectively). Within the CarO, 51.8% reported adequate relief compared to 23.5% (OlivH) and 25.8% (OlivC). One adverse event (gastrointestinal infection) was reported during CarO.

**CONCLUSION:**

Hot caraway oil poultices appear effective and safe, although their effects may be a result of the heat application. Patients reported highest levels of subjective benefit from caraway oil poultices, making their use appropriate in the self-management of IBS. © 2015 S. Karger AG, Basel.

PMID: 26044145

**Acid reflux and cancer**

Auris Nasus Larynx. 2015 May 18. pii: S0385-8146(15)00079-6. doi: 10.1016/j.anl.2015.03.008.

**Acid reflux and head and neck cancer risk: A nationwide registry over 13 years.**

Kuo CL<sup>1</sup>, Chen YT<sup>2</sup>, Shiao AS<sup>3</sup>, Lien CF<sup>4</sup>, Wang SJ<sup>5</sup>.

Author information

Abstract

**OBJECTIVE:**

Gastro-esophageal reflux disease (GERD) is a highly prevalent disorder; however, important questions remain regarding the link between GERD and extra-esophageal cancers. This nationwide cohort study investigated the risk of developing head and neck cancers (HNCs) among patients with GERD.

**METHODS:**

Newly diagnosed GERD patients aged  $\geq 20$  years without antecedent cancer were included. Case data were obtained from the National Health Insurance Research Database covering period from 1998 to 2010. We compared the standardized incidence ratios (SIRs) of cancer among GERD patients with those of the general population.

**RESULTS:**

A total of 98 cancers were identified among the 39,845 GERD patients in the study, representing 128,361 person-years. The SIR for all cases of cancer was 1.59 (95% CI 1.29-1.93). GERD patients exhibited significantly higher SIRs for oropharyngeal (SIR 3.58, 95% CI 1.85-6.25) and hypopharyngeal (SIR 3.96, 95% CI 2.35-6.26) cancers. Male patients had a significantly higher risk of HNCs (SIR 1.70, 95% CI 1.36-2.10), particularly oropharyngeal (SIR 4.01, 95% CI 2.00-7.17) and hypopharyngeal (SIR 3.91, 95% CI 2.28-6.26) cancers. Following adjustment for age and co-morbidities, the hazard ratio was 9.06 (95% CI 4.70-17.44) for males compared to females.

**CONCLUSION:** There may be a potential association between GERD and risk of HNCs, which however merits further studies to confirm the causal relationship. Our observations indicate a need for careful extra-esophageal examination of patients with acid reflux. Our findings also underline the importance of raising awareness among clinicians regarding the possibility of concurrent HNCs in GERD patients with refractory laryngo-pharyngeal symptoms.

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**KEYWORDS:** Gastro-esophageal reflux; Head and neck; Neoplasms; Population-based; Risk factor

PMID: 25998850

**10 A. CERVICAL SPINE****Mortality and morbidity from surgery**

Eur Spine J. 2015 May 23.

**Predictors of morbidity and mortality among patients with cervical spondylotic myelopathy treated surgically.**

David Kaye I<sup>1</sup>, Marascalchi BJ, Macagno AE, Lafage VA, Bendo JA, Passias PG.  
Author information

Abstract

***PURPOSE:***

The aim of this study is to report and quantify the associated factors for morbidity and mortality following surgical management of cervical spondylotic myelopathy (CSM).

***METHODS:***

The Nationwide Inpatient Sample (NIS) database was used to retrospectively review all patients over 25 years of age with a diagnosis of CSM who underwent anterior and/or posterior cervical fusion or laminoplasty between 2001 and 2010. The main outcome measures were total procedure-related complications and mortality. Multivariate regression analysis was used to identify demographic, comorbidity, and surgical parameters associated with increased morbidity and mortality risk [reported as: OR (95 % CI)].

***RESULTS:***

A total of 54,348 patients underwent surgical intervention for CSM with an overall morbidity rate of 9.83 % and mortality rate of 0.43 %. Comorbidities found to be associated with an increased complication rate included: pulmonary circulation disorders [6.92 (5.91-8.12)], pathologic weight loss [3.42 (3.00-3.90)], and electrolyte imbalance [2.82 (2.65-3.01)]. Comorbidities found to be associated with an increased mortality rate included: congestive heart failure [4.59 (3.62-5.82)], pulmonary circulation disorders [11.29 (8.24-15.47)], and pathologic weight loss [5.43 (4.07-7.26)]. Alternatively, hypertension [0.56 (0.46-0.67)] and obesity [0.36 (0.22-0.61)] were found to confer a decreased risk of mortality. Increased morbidity and mortality rates were also identified for fusions of 4-8 levels [morbidity: 1.55 (1.48-1.62), mortality: 1.80 (1.48-2.18)] and for age >65 years [morbidity: 1.65 (1.57-1.72), mortality: 2.74 (2.25-3.34)]. An increased morbidity rate was found for posterior-only [1.55 (1.47-1.63)] and combined anterior and posterior fusions [3.20 (2.98-3.43)], and an increased mortality rate was identified for posterior-only fusions [1.87 (1.40-2.49)]. Although revision fusions were associated with an increased morbidity rate [1.81 (1.64-2.00)], they were associated with a decreased rate of mortality [0.24 (0.10-0.59)].

***CONCLUSION:***

The NIS database was used to provide national estimates of morbidity and mortality following surgical management of CSM in the United States. Several comorbidities, as well as demographic and surgical parameters, were identified as associated factors.

PMID:26002352

## Vocalization

Laryngoscope. 2015 May 25. doi: 10.1002/lary.25341.

**Supracricoid laryngectomy and dysphagia: A systematic literature review.**

Lips M<sup>1</sup>, Speyer R<sup>2,3</sup>, Zumach A<sup>1</sup>, Kross KW<sup>1</sup>, Kremer B<sup>1</sup>.

Author information

<sup>1</sup>Department of Otorhinolaryngology and Head and Neck Surgery, Maastricht University Medical Center, Maastricht, The Netherlands.

<sup>2</sup>Department of Otorhinolaryngology and Head and Neck Surgery, Leiden University Medical Center, Leiden, The Netherlands.

<sup>3</sup>School of Public Health, Tropical Medicine and Rehabilitation Sciences, James Cook University, Townsville, Queensland, Australia.

## Abstract

**OBJECTIVES/HYPOTHESIS:**

Perform a systematic literature search to provide an overview of today's literature regarding the different aspects that can cause dysphagia after supracricoid laryngectomy.

**STUDY DESIGN:**

A systematic literature review.

**REVIEW METHODS:**

The inclusion criteria were laryngeal cancer, supracricoid laryngectomy, and swallowing. Thirty-one qualifying articles were included and analyzed describing swallowing after supracricoid laryngectomy.

**RESULTS:**

Included studies examined the incidence of dysphagia and discussed various factors that will or will not contribute to dysphagia after supracricoid laryngectomy, type of reconstruction, swallow training, radiation, arytenoid cartilage resection, extended procedures, and age.

**CONCLUSION:**

A high incidence of dysphagia was reported after supracricoid laryngectomy. However, good recovery rates were observed with low incidence of severe complications. The included studies used different methods and standards to start oral intake, remove the nasogastric feeding tube, and observe swallow function. Homogenous study population and standardized guidelines on how to handle the pre- and postoperative course after supracricoid laryngectomy and how to measure swallow function could improve further research. Laryngoscope, 2015.

**KEYWORDS:** Larynx; deglutition; laryngeal cancer; supracricoid laryngectomy; surgery  
PMID: 26013745

## 11. UPPER C SPINE

Flexion rotation test

### **The flexion–rotation test performed actively and passively: a comparison of range of motion in patients with cervicogenic headache**

Volume 23, Issue 2 (May 2015), pp. 61-67 JMMT

Shannon M. Bravo Petersen ; Vassilios G. Vardaxis

Author Affiliations

\*Corresponding author: [Shannon.Petersen@dmu.edu](mailto:Shannon.Petersen@dmu.edu)

Des Moines University, USA

Keywords: Flexion rotation test, Headache diagnosis, Range of motion, Upper cervical

DOI: <http://dx.doi.org/10.1179/2042618614Y.0000000085>

#### Abstract

Limitation in cervical spine range of motion (ROM) is one criterion for diagnosis of cervicogenic headaches (CHs). The flexion–rotation test, when performed passively (FRT-P), has been shown to be a useful test in diagnosis of CH. Few investigations have examined the flexion-rotation test when performed actively (FRT-A) by the individual, and no studies have examined the FRT-A in a symptomatic population. The purpose of this study was to compare ROM during the FRT-A and FRT-P in patients with CH and asymptomatic individuals and to compare ROM between sides for these two versions of the test. Twelve patients with CH and 10 asymptomatic participants were included in the study. An eight-camera Motion Analysis system was used to measure head motion relative to the trunk during the FRT-P and the FRT-A. Cervical rotation ROM was measured in a position of full cervical flexion for both tests. No significant difference was observed between right and left sides for cervical rotation ROM during the FRT-P nor the FRT-A when performed by asymptomatic participants.

In patients with CH, a significant difference was observed between sides for the FRT-P ( $P=0.014$ ); however, the FRT-A failed to reveal bilateral discrepancy in rotation ROM.

Keywords: Flexion rotation test, Headache diagnosis, Range of motion, Upper cervical

### 13. CRANIUM/TMJ

#### TMJ education in MT

##### **The status of temporomandibular and cervical spine education in credentialed orthopedic manual physical therapy fellowship programs: a comparison of didactic and clinical education exposure**

Stephen M. Shaffer<sup>1</sup>; Jean-Michel Brismée<sup>1</sup>; Carol A. Courtney<sup>2</sup>; Phillip S. Sizer<sup>1</sup>

Author Affiliations

Keywords: Temporomandibular disorders, Physical therapy specialty, Professional education

DOI: <http://dx.doi.org/10.1179/2042618614Y.0000000087>

JMMT Volume 23, Issue 1 (February 2015), pp. 51-56

Abstract

Objective:

The purpose of this investigation was to establish a baseline of physical therapist education on temporomandibular disorders (TMD)-related topics during credentialed orthopedic manual physical therapy fellowship training and compare it to cervical spine disorders education.

Method:

An online survey was distributed electronically to each fellowship program credentialed by the American Physical Therapy Association (APTA) and recognized by the Academy of Orthopedic Manual Physical Therapists (AAOMPT). Data were analyzed to compare overall exposure to TMD educational content, including a direct comparison of TMD and cervical spine disorders education.

Results:

The response rate was 79%. Thirteen programs (87%) reported providing both didactic and clinical training on both TMD and cervical spine disorders. Didactic education for cervical spine disorders ranged from 16–20 hours to over 25 hours, whereas TMD hours ranged from 0 to 6–10 hours. Clinical education for cervical spine disorders ranged from 11–15 hours to over 25 hours, whereas TMD hours ranged from 0 to 6–10 hours. The number of hours of exposure during didactic training and the number of patients exposed to during clinical training were significantly different when comparing TMD to cervical spine disorders exposure ( $P < 0.0001$ ).

Discussion:

The data indicate a lack of uniformity between credentialed fellowship programs in orthopedic manual physical therapy with respect to the extent to which programs expose trainees to evaluation and management of TMD. There is consistency in that all programs provided more training on cervical spine disorders than TMD. Despite a high level of clinical specialization, fellows-in-training receive minimal TMD education.

Keywords: Temporomandibular disorders, Physical therapy specialty, Professional education

## 14. HEADACHES

### Picture processing

Cephalalgia. 2015 May 21. pii: 0333102415587705.

#### **Higher, faster, worse? An event-related potentials study of affective picture processing in migraine.**

Steppacher I<sup>1</sup>, Schindler S<sup>2</sup>, Kissler J<sup>2</sup>.

Author information

Abstract

#### **BACKGROUND:**

Migraine is a disorder of periodic disabling headache. Facilitated cortical responsivity has been suggested as one predisposing factor. Although the underlying mechanisms of migraine attack onsets are not fully understood, facilitated cortical responsivity has been suggested as one predisposing factor. Here, we investigate if enhanced cortical responsivity is reflected in altered event-related potentials during processing of complex pictures.

#### **METHOD:**

Altogether, 16 migraine patients and 16 healthy volunteers participated in this study. Each patient had a diagnosed migraine and was headache- and medication-free for the study. Participants watched positive, negative and neutral pictures from the international affective picture system. An electroencephalogram was recorded during picture presentation. Afterwards, participants were asked to rate the pictures for valence and arousal.

#### **RESULTS:**

Migraine patients showed significantly more negative-going early event-related potential components from 100 ms to 180 ms to all picture categories over occipital regions as well as more positive-going late potentials over central regions. Patients and controls did not differ in valence and arousal ratings for the international-affective picture system.

#### **DISCUSSION:**

Patients with migraine seem to react cortically more intensely to all kinds of pictorial stimuli, regardless of emotional content. This facilitated processing may be related to the high cortical responsivity shown in various other event-related potential studies and might contribute to the recurring intense headache attacks.

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#### **KEYWORDS:**

Migraine; event-related potentials; international affective picture system; late-positive-potential

PMID:25997644

visual habituation

[Cephalalgia](#). 2015 Jun 8. pii: 0333102415590241.

**Correlation between habituation of visual-evoked potentials and magnetophosphene thresholds in migraine: A case-control study.**

[Ambrosini A](#)<sup>1</sup>, [Jezi E](#)<sup>2</sup>, [Perrotta A](#)<sup>3</sup>, [Kisialiou A](#)<sup>4</sup>, [Nardella A](#)<sup>2</sup>, [Berardelli A](#)<sup>5</sup>, [Pierelli F](#)<sup>6</sup>, [Schoenen J](#)<sup>7</sup>.

[Author information](#)

**Abstract**

**INTRODUCTION:**

In migraine most studies report an interictal deficit of habituation of visual-evoked potentials (VEP-hab) and reduced thresholds for phosphene induction (PT) by transcranial magnetic stimulation (TMS). We searched for a possible correlation between VEP-hab and PT in migraine patients and healthy controls to test whether they reflect the same pathophysiological abnormality.

**METHODS:**

We assessed PT and VEP-hab measured as the percentage change of N1/P1 amplitude over six blocks of 100 responses in 15 healthy volunteers (HV) and in 13 episodic migraineurs without aura (MO) between attacks. Results were compared using Mann-Whitney U test. Interrelationships were examined using Spearman's correlation.

**RESULTS:**

In MO patients VEP-hab was reduced compared to HV ( $p = 0.001$ ), while PT were not significantly different between HV and MO. There was no correlation between PT and VEP-hab in either group of participants.

**CONCLUSIONS:**

We confirm that in interictal migraine VEP habituation is deficient, but magnetophosphene threshold normal. VEP-hab and PT were not correlated with each other in healthy controls or in migraineurs. This finding suggests that they index different facets of cortical excitability in migraine, i.e. a punctual normal measure of the cortical activation threshold for PT and a dynamic response pattern to repeated stimuli for VEP habituation.

**KEYWORDS:**

Migraine; cortical excitability; habituation; magnetophosphene threshold; visual-evoked potentials

PMID: 26054364

**Migraine diagnosis**

Cephalalgia. 2015 May 22. pii: 0333102415583982.

**Improving the detection of chronic migraine: Development and validation of Identify Chronic Migraine (ID-CM).**

Lipton RB<sup>1</sup>, Serrano D<sup>2</sup>, Buse DC<sup>3</sup>, Pavlovic JM<sup>3</sup>, Blumenfeld AM<sup>4</sup>, Dodick DW<sup>5</sup>, Aurora SK<sup>6</sup>, Becker WJ<sup>7</sup>, Diener HC<sup>8</sup>, Wang SJ<sup>9</sup>, Vincent MB<sup>10</sup>, Hindiyeh NA<sup>6</sup>, Starling AJ<sup>5</sup>, Gillard PJ<sup>11</sup>, Varon SF<sup>11</sup>, Reed ML<sup>12</sup>.

Author information

**Abstract****BACKGROUND:**

Migraine, particularly chronic migraine (CM), is underdiagnosed and undertreated worldwide. Our objective was to develop and validate a self-administered tool (ID-CM) to identify migraine and CM.

**METHODS:**

ID-CM was developed in four stages. (1) Expert clinicians suggested candidate items from existing instruments and experience (Delphi Panel method). (2) Candidate items were reviewed by people with CM during cognitive debriefing interviews. (3) Items were administered to a Web panel of people with severe headache to assess psychometric properties and refine ID-CM. (4) Classification accuracy was assessed using an ICHD-3 $\beta$  gold-standard clinician diagnosis.

**RESULTS:**

Stages 1 and 2 identified 20 items selected for psychometric validation in stage 3 (n = 1562). The 12 psychometrically robust items from stage 3 underwent validity testing in stage 4. A scoring algorithm applied to four symptom items (moderate/severe pain intensity, photophobia, phonophobia, nausea) accurately classified most migraine cases among 111 people (sensitivity = 83.5%, specificity = 88.5%). Augmenting this algorithm with eight items assessing headache frequency, disability, medication use, and planning disruption correctly classified most CM cases (sensitivity = 80.6%, specificity = 88.6%).

**DISCUSSION:**

ID-CM is a simple yet accurate tool that correctly classifies most individuals with migraine and CM. Further testing in other settings will also be valuable.

**KEYWORDS:**

Chronic migraine; case-finding; diagnosis; migraine; screening; sensitivity; specificity; validation studies

PMID:26002700

**Perivascular spaces**

Cephalalgia. 2015 May 29. pii: 0333102415587691.

**Perivascular spaces and headache: A population-based imaging study (HUNT-MRI).**

Husøy AK<sup>1</sup>, Indergaard MK<sup>2</sup>, Honningsvåg LM<sup>2</sup>, Håberg AK<sup>3</sup>, Hagen K<sup>4</sup>, Linde M<sup>4</sup>, Gårseth M<sup>5</sup>, Stovner LJ<sup>4</sup>.

Author information

Abstract

**BACKGROUND:**

In four previous clinic-based MRI studies headache sufferers (in particular migraineurs) had more perivascular spaces (PVS) than individuals who were headache-free.

**METHODS:**

The present study was part of a large longitudinal, epidemiological study (Nord-Trøndelag Health Survey (HUNT)). The 1006 participants, age 50-65 years at inclusion, had participated in all previous HUNT surveys (1-3), and been randomly selected to a population-based imaging study of the head (HUNT-MRI, 2007-2009). The number of visible PVS in the basal ganglia (BG) and hemispheric white matter (HWM) was compared in headache sufferers (migraine with and without aura, non-migrainous headache) and people who were headache-free.

**RESULTS:**

The results showed in general small differences between headache sufferers and headache-free participants. In the cross-sectional analysis migraineurs without aura had fewer PVS than headache-free individuals in BG (OR = 0.84, 95% CI = 0.76--0.94, p value = 0.003) and in BG and HWM together (OR = 0.97, 95% CI = 0.95-1.00, p value = 0.046). No difference between long-term headache sufferers and long-term headache-free individuals with regard to number of PVS was found.

**DISCUSSION:**

In contrast to previous studies, the present large, blinded, population-based study showed no increase in number of dilated PVS among headache sufferers. Fewer PVS among those with migraine without aura may be a spurious finding.

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**KEYWORDS:**

Virchow-Robin spaces; epidemiology; headache; magnetic resonance imaging; migraine; population-based

PMID: 26024925

### Differentiating HA's from Vestibular

Curr Pain Headache Rep. 2015 Jul;19(7):502. doi: 10.1007/s11916-015-0502-3.

#### **Headache and Dizziness: How to Differentiate Vestibular Migraine from Other Conditions.**

Cohen JM<sup>1</sup>, Escasena CA.

Author information

#### Abstract

Headache and dizziness are two of the most common symptoms prompting medical evaluation and may be seen in many primary and secondary headache and dizziness syndromes. Many of these disease processes share common characteristics making determination of the diagnosis extremely challenging. As more is understood about the concurrence of these symptoms, new diagnostic considerations have emerged, and the beta version of the latest edition of the International Classification of Headache Disorders describes a new entity termed vestibular migraine that may affect many patients presenting with headache and dizziness.

This article examines the epidemiology of headache and dizziness, describes the presenting features of patients with conditions which often express these two symptoms, discusses recommendations for evaluation and testing for these patients, and serves to aid in the differentiation between vestibular migraine and other potential diagnoses.

PMID: 26049771

### Myofascial headaches

Curr Pain Headache Rep. 2015 Jul;19(7):503. doi: 10.1007/s11916-015-0503-2.

#### **Myofascial Head Pain.**

Fernández-de-Las-Peñas C<sup>1</sup>.

Author information

#### Abstract

Muscle nociception is mainly characterized by local tenderness and referred pain. The neurophysiological basis of muscle pain supports a role of sensitization mechanisms. From a clinical viewpoint, muscle pain is represented by the presence of myofascial trigger points (TrPs). Evidence suggests that TrPs are able to start a peripheral nociceptive mechanism and hence contributing to changes in the central nervous system. Several studies demonstrated that the referred pain elicited by TrPs reproduces the headache pattern in patients with tension-type headache (TTH), migraine, cervicogenic headache and, in some individuals, with cluster headache.

In fact, sensitization of nociceptive pain pathways in the central nervous system due to prolonged nociceptive stimuli from TrPs seems to be responsible for the conversion of episodic to chronic TTH. In other headaches, TrPs may be able to stimulate the trigeminal nucleus caudalis and hence triggering a migraine or cluster headache attack. Proper treatment directed towards TrP inactivation has documented positive effects in individuals with these headaches; however, longitudinal studies are needed to further determine the role of TrPs in head pain.

PMID: 26049772

**Cerebellar involvement**

Cephalalgia. 2015 May 22. pii: 0333102415588328.

**Volumetric differences suggest involvement of cerebellum and brainstem in chronic migraine.**

Bilgiç B<sup>1</sup>, Kocaman G<sup>2</sup>, Arslan AB<sup>3</sup>, Noyan H<sup>4</sup>, Sherifov R<sup>5</sup>, Alkan A<sup>5</sup>, Asil T<sup>2</sup>, Parman Y<sup>6</sup>, Baykan B<sup>6</sup>.

Author information

## Abstract

**BACKGROUND:**

Chronic migraine (CM) is a disabling neurologic condition that often evolves from episodic migraine. There has been mounting evidence on the volumetric changes detected by magnetic resonance imaging (MRI) technique in migraineurs. These studies mainly focused on episodic migraine patients and less is known about the differences in CM patients.

**METHOD:**

A total of 24 CM patients and 24 healthy control individuals (all females) were included in this study. All participants underwent neurological examination and MRI. High-resolution anatomical MRI images were processed with an automated segmentation method (FreeSurfer). White-matter abnormalities of the brain were also evaluated with the Age-Related White-Matter-Changes Scale.

**RESULTS:**

The volumes of the cerebellum and brainstem were found to be smaller in CM patients compared to healthy controls. White-matter abnormalities were also found in CM patients, specifically in the bilateral parieto-occipital areas. There was no correlation between the clinical variables and volume decrease in these regions.

**CONCLUSION:**

CM patients showed significant volume differences in infratentorial areas and white-matter abnormalities in the posterior part of the brain. It is currently unclear whether the structural brain changes seen in migraine patients are the cause or the result of headaches. Longitudinal volumetric neuroimaging studies with larger groups, especially on the chronification of migraine, are needed to shed light on this topic.

**KEYWORDS:** Chronic migraine; brainstem; cerebellum; magnetic resonance imaging

PMID:26002699

### 15. VESTIBULAR

Differentiating HA's from Vestibular

Curr Pain Headache Rep. 2015 Jul;19(7):502. doi: 10.1007/s11916-015-0502-3.

#### **Headache and Dizziness: How to Differentiate Vestibular Migraine from Other Conditions.**

Cohen JM<sup>1</sup>, Escasena CA.

Author information

Abstract

Headache and dizziness are two of the most common symptoms prompting medical evaluation and may be seen in many primary and secondary headache and dizziness syndromes. Many of these disease processes share common characteristics making determination of the diagnosis extremely challenging. As more is understood about the concurrence of these symptoms, new diagnostic considerations have emerged, and the beta version of the latest edition of the International Classification of Headache Disorders describes a new entity termed vestibular migraine that may affect many patients presenting with headache and dizziness.

This article examines the epidemiology of headache and dizziness, describes the presenting features of patients with conditions which often express these two symptoms, discusses recommendations for evaluation and testing for these patients, and serves to aid in the differentiation between vestibular migraine and other potential diagnoses.

PMID: 26049771

### 16. CONCUSSIONS

#### Concussions update

Curr Pain Headache Rep. 2015 Jul;19(7):506. doi: 10.1007/s11916-015-0506-z.

#### **Update on the Epidemiology of Concussion/Mild Traumatic Brain Injury.**

Voss JD<sup>1</sup>, Connolly J, Schwab KA, Scher AI.

[Author information](#)

#### Abstract

Mild traumatic injuries to the brain (e.g., concussion) are common and have been recognized since antiquity, although definitions have varied historically. Nonetheless, studying the epidemiology of concussion helps clarify the overall importance, risk factors, and at-risk populations for this injury. The present review will focus on recent findings related to the epidemiology of concussion including definition controversies, incidence, and patterns in the population overall and in the military and athlete populations specifically. Finally, as this is an area of active research, we will discuss how future epidemiologic observations hold promise for gaining greater clarity about concussion and mild traumatic brain injury.

PMID: 26049775

**23. SURGERY****Labral repair in 60 and older**

[Arthroscopy](#). 2015 May 18. pii: S0749-8063(15)00259-5. doi: 10.1016/j.arthro.2015.03.032.

**Arthroscopic Treatment of Labral Tears in Patients Aged 60 Years or Older.**

[Redmond JM](#)<sup>1</sup>, [Gupta A](#)<sup>2</sup>, [Cregar WM](#)<sup>2</sup>, [Hammarstedt JE](#)<sup>2</sup>, [Gui C](#)<sup>2</sup>, [Domb BG](#)<sup>3</sup>.

[Author information](#)

Abstract

**PURPOSE:**

The purpose of this study was to (1) evaluate the clinical outcomes of a series of patients aged 60 years or older who underwent hip arthroscopy for labral tears with minimum 2-year follow-up and (2) identify risk factors for conversion to total hip arthroplasty (THA).

**METHODS:**

Outcome data were prospectively collected and retrospectively reviewed in patients aged 60 years or older who underwent hip arthroscopy between April 2008 and May 2012. Four patient-reported outcome (PRO) scores, pain scores, and satisfaction ratings were collected. Conversion to THA and revision surgery rates were recorded. A subgroup analysis compared survivors with patients requiring THA.

**RESULTS:**

Minimum 2-year follow-up was available for 30 patients with a mean age of 63.9 years. The 2-year survivorship rate was 70%, with 9 patients undergoing conversion to THA at a mean of 1.1 years after hip arthroscopy. Two patients required additional surgery during the study period, for a reoperation rate of 37% (11 of 30 patients). The remaining cohort showed mean improvements in all PRO scores. All scores, except the sports-related PRO ( $P = .12$ ), improved significantly from the preoperative baseline scores. Visual analog scale scores for pain decreased from a mean of 5.0 preoperatively to 2.7 postoperatively ( $P = .003$ ). Patients who required conversion to THA had lower preoperative modified Harris Hip Scores ( $P = .015$ ), lower preoperative Hip Outcome Score-Activity of Daily Living values ( $P = .01$ ), higher pain scores ( $P = .05$ ), greater acetabular inclination ( $P = .023$ ), and more severe chondral damage ( $P = .033$ ).

**CONCLUSIONS:**

Arthroscopic treatment of labral tears in patients aged 60 years or older should be approached with caution. Patients in this age group had an overall 2-year survivorship rate of 70% and should be counseled before surgery on the possibility of subsequent conversion to THA. Patients aged 60 years or older with poor preoperative PRO scores, high pain scores, radiographic evidence of borderline dysplasia, and severe chondral damage may be poor candidates for hip arthroscopy.

**LEVEL OF EVIDENCE:** Level IV, therapeutic case series.

PMID: 25998015

### 24. ELBOW

#### Management of medial epicondylitis

J Am Acad Orthop Surg. 2015 Jun;23(6):348-355.

#### **Medial Epicondylitis: Evaluation and Management.**

Amin NH, Kumar NS, Schickendantz MS.

#### Abstract

Medial epicondylitis, often referred to as "golfer's elbow," is a common pathology. Flexor-pronator tendon degeneration occurs with repetitive forced wrist extension and forearm supination during activities involving wrist flexion and forearm pronation. A staged process of pathologic change in the tendon can result in structural breakdown and irreparable fibrosis or calcification. Patients typically report persistent medial-sided elbow pain that is exacerbated by daily activities. Athletes may be particularly symptomatic during the late cocking or early acceleration phases of the throwing motion. Nonsurgical supportive care includes activity modification, NSAIDs, and corticosteroid injections. Once the acute symptomology is alleviated, focus is turned to flexor-pronator mass rehabilitation and injury prevention. Surgical treatment via open techniques is typically reserved for patients with persistent symptoms.

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PMID: 26001427

**PT cortisone for lateral epicondylitis**

*BMC Musculoskelet Disord.* 2015 May 20;16(1):122. doi: 10.1186/s12891-015-0582-6.

Corticosteroid or placebo injection combined with deep transverse friction massage, Mills manipulation, stretching and eccentric exercise for acute lateral epicondylitis: a randomised, controlled trial.

Olaussen M<sup>1</sup>, Holmedal Ø<sup>2</sup>, Mdala I<sup>3</sup>, Brage S<sup>4</sup>, Lindbæk M<sup>5</sup>.

[Author information](#)

**Abstract****BACKGROUND:**

Lateral epicondylitis of the elbow is a frequent condition with long-lasting symptoms. Corticosteroid injection is increasingly discouraged and there is little knowledge on the combined effect of corticosteroid injection and physiotherapy for acute conditions. We wanted to investigate the efficacy of physiotherapy alone and combined with corticosteroid injection for acute lateral epicondylitis.

**METHODS:**

A randomized, controlled study with one-year follow-up was conducted in a general practice setting in Sarpsborg, Norway. We included 177 men and women aged 18 to 70 with clinically diagnosed lateral epicondylitis of recent onset (2 weeks to 3 months). They were randomly assigned to one of three treatments: physiotherapy with two corticosteroid injections, physiotherapy with two placebo injections or wait-and-see (control). Physiotherapy consisted of deep transverse friction massage, Mills manipulation, stretching, and eccentric exercises. We used double blind injection of corticosteroid and single blind assessments. The main outcome measure was treatment success defined as patients rating themselves completely recovered or much better on a six-point scale.

**RESULTS:**

One hundred fifty-seven patients (89 %) completed the trial. Placebo injection with physiotherapy showed no significant difference compared to control or to corticosteroid injection with physiotherapy at any follow-up. Corticosteroid injection with physiotherapy had a 10.6 times larger odds for success at six weeks (odds ratio 10.60,  $p < 0.01$ ) compared to control (NNT = 3, 99 % CI 1.5 to 4.2). At 12 weeks there was no significant difference between these groups, but at 26 weeks the odds for success were 91 % lower (OR 0.09,  $p < 0.01$ ) compared to control, showing a large negative effect (NNT = 5, 99 % CI 2.1 to 67.4). At 52 weeks there was no significant difference. Both control and placebo injection with physiotherapy showed a gradual increase in success.

**CONCLUSIONS:**

Acute lateral epicondylitis is a self-limiting condition where 3/4 of patients recover within 52 weeks. Physiotherapy with deep transverse friction massage, Mills manipulation, stretching, and eccentric exercises showed no clear benefit, and corticosteroid injection gave no added effect. Corticosteroid injections combined with physiotherapy might be considered for patients needing a quick improvement, but intermediate (12 to 26 weeks) worsening of symptoms makes the treatment difficult to recommend.

**TRIAL REGISTRATION:**

ClinicalTrials.gov Identifier: NCT00826462.

PMID: 25989985

### 28. REPLACEMENTS

#### **Sit-to-stand biomechanics before and after total hip arthroplasty**

Journal of Arthroplasty, 06/09/2015 Abujaber S, et al.

**T**he purpose of this study was to evaluate changes in movement patterns during a sit-to-stand (STS) task before and after total hip arthroplasty (THA), and to compare biomechanical outcomes after THA to a control group. Although there were significant improvements in movement symmetry 3 months after THA, patients continued to demonstrate lower VGRF and smaller moments on the operated limb compared to non-operated and to controls limbs. Future studies should identify the contributions of physical impairments and the influence of surgical approach on STS biomechanics.

**30 A. IMPINGEMENT****PRP and surgery**

Arthroscopy. 2015 May 15. pii: S0749-8063(15)00252-2. doi: 10.1016/j.arthro.2015.03.025.

Platelet-Rich Plasma Augmentation of Arthroscopic Hip Surgery for Femoroacetabular Impingement: A Prospective Study With 24-Month Follow-Up.

Rafols C<sup>1</sup>, Monckeberg JE<sup>2</sup>, Numair J<sup>1</sup>, Botello J<sup>1</sup>, Rosales J<sup>1</sup>.

Author information

Abstract

**PURPOSE:**

The objective of this study is to evaluate the clinical and immunologic effects of intra-articular doses of platelet-rich plasma (PRP) in arthroscopic hip surgery for femoroacetabular impingement.

**METHODS:**

Preoperatively, patients were randomized either to receive an intra-articular injection of PRP (group I, n = 30) or not to receive PRP (group II, n = 27) at the end of hip arthroscopic surgery. To evaluate the clinical outcome and follow-up, we used the modified Harris Hip Score (mHHS) 3, 6, and 24 months after surgery. Pain was evaluated using a visual analog scale 24 hours, 48 hours, 3 months, and 6 months after surgery. The radiologic outcome was analyzed using radiographs and magnetic resonance imaging (MRI) obtained before surgery and 6 months after surgery. Labral integration and joint effusion were evaluated with MRI at 6 months. For statistical analysis, an independent t test and the Wilcoxon rank sum test were used (P < .05 was considered statistically significant).

**RESULTS:**

The visual analog scale score 48 hours after surgery was 3.04 in group I compared with 5.28 in group II (P < .05). At the 3-month follow-up, the mHHS was 91.79 in group I versus 90.97 in group II (P = .65). At the 24-month follow-up, the mHHS was 93.41 in group I (P = .56) versus 92.32 in group II (P = .52). At the 6-month follow-up, MRI showed no effusion in 36.7% of patients in group I versus 21.1% of patients in group II (P = .013). Regarding labral integration, no statistical differences were observed between the groups (P = .76).

**CONCLUSIONS:**

In this randomized study, PRP resulted in lower postoperative pain scores at 48 hours and fewer joint effusions at 6 months. These findings suggest that PRP may have a benefit regarding postoperative inflammation; however, the long-term clinical benefit is unclear.

**LEVEL OF EVIDENCE:**

Level II, lesser-quality randomized controlled trial.

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PMID:25980923

**32 A. KNEE/ACL**

return to activities

Arch Orthop Trauma Surg. 2015 May 22.**Return to recreational sports activity after anterior cruciate ligament reconstruction: a one-to six-year follow-up study.**Rodríguez-Roiz JM<sup>1</sup>, Caballero M, Ares O, Sastre S, Lozano L, Popescu D.  
Author information

Abstract

**INTRODUCTION:**

The aim of this study was to evaluate mid-term return to recreational sport in general population and identify factors related with sports return.

**METHODS:**

Retrospective evaluation of 99 recreational sports players (Tegner score of 6) with ACL arthroscopic reconstructions with hamstring autograft, between 2006-2011. 74 male and 25 female with middle age of 30 years (14-52). We made a questionnaire focused on sports level before injury and after surgery, and different scales: Lysholm, Tegner Activity Level, IKDC and a Likert scale for quantify their motivation for return to sports.

**RESULTS:**

With a medium follow-up of 36 months, 90 patients (91.9 %) had returned to recreational sport. 51 (51.52 %) had returned to sports at the same level, and these are those with lower BMI (average 23), higher IKDC and Lysholm scores ( $p < 0.01$ ) and also they believe that sport is an important activity. Only 9 % of patients left sports. They were principally male athletes (88 %), with higher medium age (32), lesser time between injury and surgery (22 months), higher BMI (26), in comparison with athletes that return to sports.

**CONCLUSIONS:**

The results suggest good mid-term return to recreational sports in general population. The following factors had a statistically significant influence on the return to sports activity: type of sport, sex and functional state of the operated knee (IKDC-Lysholm). Psychological and social factors may have a fundamental influence on return to sports activity.

PMID: 25997812

**35. KNEE/TOTAL****Balance**

Phys Ther. 2015 Apr 16.

**Assessing Balance Function in Patients With Total Knee Arthroplasty.**

Chan AC<sup>1</sup>, Pang MY<sup>2</sup>.

Author information

Abstract

**BACKGROUND:**

The Balance Evaluation Systems Test (BESTest) is a relatively new balance assessment tool. Recently, the Mini-BESTest and the Brief-BESTest, which are shortened versions of the BESTest, were developed.

**OBJECTIVE:**

The purpose of this study was to estimate interrater and intrarater-interoccasion reliability, internal consistency, concurrent and convergent validity, and floor and ceiling effects of the 3 BESTests and other related measures, namely, the Berg Balance Scale (BBS), Functional Gait Assessment (FGA), and Activities-specific Balance Confidence (ABC) Scale, among patients with total knee arthroplasty (TKA).

**DESIGN:**

This was an observational measurement study.

**METHODS:**

To establish interrater reliability, the 3 BESTests were administered by 3 independent raters to 25 participants with TKA. Intrarater-interoccasion reliability was evaluated in 46 participants with TKA (including the 25 individuals who participated in the interrater reliability experiments) by repeating the 3 BESTests, BBS, and FGA within 1 week by the same rater. Internal consistency of each test also was assessed with Cronbach alpha. Validity was assessed in another 46 patients with TKA by correlating the 3 BESTests with BBS, FGA, and ABC. The floor and ceiling effects also were examined.

**RESULTS:**

The 3 BESTests demonstrated excellent interrater reliability (intraclass correlation coefficient [ICC] [2,1]=.96-.99), intrarater-interoccasion reliability (ICC [2,1]=.92-.96), and internal consistency (Cronbach alpha=.96-.98). These values were comparable to those for the BBS and FGA. The 3 BESTests also showed moderate-to-strong correlations with the BBS, FGA, and ABC ( $r=.35-.81$ ), thus demonstrating good concurrent and convergent validity. No significant floor and ceiling effects were observed, except for the BBS.

**LIMITATIONS:**

The results are generalizable only to patients with TKA due to end-stage knee osteoarthritis.

**CONCLUSIONS:**

The 3 BESTests have good reliability and validity for evaluating balance in people with TKA. The Brief-BESTest is least time-consuming and may be more useful clinically.

PMID: 25882482

**Total knee management**

Orthop Nurs. 2015 May-Jun;34(3):148-53. doi: 10.1097/NOR.0000000000000143.

**Does the use of a brief cryotherapy intervention with analgesic administration improve pain management after total knee arthroplasty?**

Wittig-Wells D<sup>1</sup>, Johnson I, Samms-McPherson J, Thankachan S, Titus B, Jacob A, Higgins M.  
[Author information](#)

Abstract

**BACKGROUND:**

Prior studies have evaluated only the prolonged use of cryotherapy as a nonpharmacologic pain intervention.

**PURPOSE OF THE STUDY:**

The purpose of this study was to determine whether a 30-minute application of cryotherapy at the time pain medication was given after a total knee arthroplasty (TKA) provided better pain relief than analgesic drugs alone.

**METHODS:**

A pretest, posttest, randomized controlled trial study design with crossover was used to evaluate the effects of cryotherapy on postoperative pain and satisfaction with pain management. A convenience sample of postoperative knee replacement patients constituted participants in the study. Two sequential episodes of pain requiring analgesic administration were studied in each patient, one with a 30-minute cryotherapy application and the other without cryotherapy. Dependent variables were changes in pain (posttest minus pretest) and level of satisfaction with pain management. Data were analyzed with repeated-measures analysis of variance, with  $p < .05$  considered significant.

**RESULTS:**

During two sequential treatments for postoperative pain, a total of 29 TKA patients received analgesic medication administration alone for one pain episode and analgesic medication administration with a brief cryotherapy administration for the other pain episode. No significant difference between the two treatments was found for changes in pain scores after the treatments or patient satisfaction with pain management ( $p > .05$ ). The order in which the treatments were provided was found to be significant ( $p = .02$ ) for scores on patient satisfaction with pain management, with cryotherapy as the treatment for the second pain episode having higher scores than when delivered for the first pain episode. Sixty minutes after analgesic administration with or without cryotherapy, average pain scores remained greater than 7.

**CONCLUSION:**

In TKA patients, the short-term application of cryotherapy with analgesic medication administration did not significantly decrease pain or improve patient satisfaction with pain management compared with analgesic medication administration only. Further study is necessary to determine whether short-term cryotherapy shortly after TKA is of benefit to pain relief and patient satisfaction.

PMID:25989123

**37. OSTEOARTHRITIS/KNEE****Progression of OA**

Arthritis Res Ther. 2015 Jun 8;17(1):152.

**Prognostic factors for progression of clinical osteoarthritis of the knee: a systematic review of observational studies.**

Bastick AN<sup>1</sup>, Runhaar J<sup>2</sup>, Belo JN<sup>3</sup>, Bierma-Zeinstra SM<sup>4</sup>.

Author information

Abstract

**INTRODUCTION:**

We performed a systematic review of prognostic factors for the progression of symptomatic knee osteoarthritis (OA), defined as increase in pain, decline in physical function or total joint replacement.

**METHOD:**

We searched for available observational studies up to January 2015 in Medline and Embase according to a specified search strategy. Studies that fulfilled our initial inclusion criteria were assessed for methodological quality. Data were extracted and the results were pooled, or if necessary summarized according to a best evidence synthesis.

**RESULTS:**

1,392 articles were identified and 30 articles met the inclusion criteria. 38 determinants were investigated. Pooling was not possible due to large heterogeneity between studies. The best evidence synthesis showed strong evidence that age, ethnicity, body mass index (BMI), co morbidity count, magnetic resonance imaging (MRI) detected infrapatellar synovitis, joint effusion and baseline OA severity, both radiographic and clinical, are associated with clinical knee OA progression. There was moderate evidence showing that education level, vitality, pain coping subscale resting, MRI detected medial femorotibial cartilage loss and general bone marrow lesions (BMLs) are associated with clinical knee OA progression. However, evidence for the majority of determinants was limited (including knee range of motion (ROM) or markers) or conflicting (including age, gender and joint line tenderness).

**CONCLUSION:**

Strong evidence was found for multiple prognostic factors for progression of clinical knee OA. A large variety in definitions of clinical knee OA (progression) remains, which makes it impossible to summarize the evidence through meta-analyses. More research on prognostic factors for knee OA is needed using symptom progression as outcome measure. Remarkably, only few studies have been performed using pain progression as an outcome measure. The pathophysiology of radiographic factors and their relation with symptoms should be further explored.

PMID: 26050740

**45 A. MANUAL THERAPY LUMBAR****McKenzie and AS**

McKenzie training in patients with early stages of Ankylosing spondylitis: Results of a 24-week controlled study

European Journal of Physical and Rehabilitation Medicine, 06/13/2015

**R**osu OM, et al. – The main aim of the study was to demonstrate the benefits of a specific, McKenzie training focusing on pain, spine flexibility, disease activity and function, as well as chest expansion in ankylosing spondylitis (AS). A specific McKenzie training should be included in the standard-care of AS aiming to improve pain, posture and function, especially in early axial disease.

**Methods**

Prospective 24-week controlled study in 52 patients with early AS (modified 1984 New York criteria) randomly assigned to perform either McKenzie training (28 AS) or classic kinetic exercises (24 AS).

Efficacy parameters comprising pain, lumbar spine mobility (modified Schober test, mST; finger-to-floor distance, FFD; BASMI), chest expansion (CE), disease activity (BASDAI) and function (BASFI) were evaluated during three visits (week 0, 12 and 24 after the initiation of the kinetic program).

The exercise protocol consisted of 50-minute sessions performed 3 times weekly for 24 weeks, with a 12-week learning module assisted by a trained physical therapist in the outpatient rheumatology and rehabilitation department, and a 12-week module performed individually at home.

Only subjects attending the kinetic program on a regular basis (at least 2 times weekly, at least 60 attended sessions during the study) were and accepted for the final evaluation.

**Results**

After 12 and 24 weeks of exercises authors reported significant improvement in pain ( $P=0.015$  and  $P=0.003$ ), metrology (mST:  $P=0.001$  and  $P=0.001$ ; FFD:  $P=0.002$  and  $P=0.001$ ; BASMI:  $P=0.001$  and  $P=0.001$ ), disease activity (BASDAI:  $P=0.004$  and  $P=0.001$ ) and function (BASFI:  $P=0.001$  at both visits) in the McKenzie group.

mST, BASDAI, BASFI and BASMI also improved at both visits in controls ( $P<0.05$ ), while CE and FFD significantly changed only in long-term assessment ( $P<0.05$ ).

Intergroup analysis demonstrated significant differences in all measurements including favoring AS in the McKenzie exercises ( $P=0.001$ ).

**Clinical reasoning****Establishing assessment criteria for clinical reasoning in orthopedic manual physical therapy: a consensus-building study**

Euson Yeung<sup>1</sup>; Nicole Woods<sup>1</sup>; Adam Dubrowski<sup>2</sup>; Brian Hodges<sup>1</sup>; Heather Carnahan<sup>1,2</sup>

Author Affiliations

\*Corresponding author: [euson.yeung@utoronto.ca](mailto:euson.yeung@utoronto.ca)

1: University of Toronto, Toronto, Canada

2: Memorial University of Newfoundland, St John's, Canada

Keywords: Manual therapy, Clinical reasoning, Assessment, Consensus

DOI: <http://dx.doi.org/10.1179/2042618613Y.0000000051>

JMMT Volume 23, Issue 1 (February 2015), pp. 27-36

**Abstract****Objectives:**

Clinical reasoning (CR) represents one of the core components of clinical competence in Orthopaedic Manual Physical Therapy (OMPT). While education standards have been developed to guide curricular design, assessment of CR has not yet been standardized. Without theory-informed and rigorously developed measures, the certification of OMPTs lacks credibility and is less defensible. The purpose of this study was to use a theory-informed approach to generate assessment criteria for developing new assessment tools to evaluate CR in OMPT.

**Methods:**

A list of assessment criteria was generated based on international education standards and multiple theoretical perspectives. A modified Delphi method was used to gain expert consensus on the importance of these assessment criteria for the assessment of CR in OMPT. The OMPTs from 22 countries with experience in assessing CR were invited to participate in three rounds of online questionnaires to rate their level of agreement with these criteria. Responses were tabulated to analyze degree of consensus and internal consistency.

**Results:**

Representatives from almost half of the OMPT member organizations (MO) participated in three rounds of the Delphi. High levels of agreement were found among respondents regarding the importance and feasibility of most assessment criteria. There was high internal consistency among items within the proposed item subgroupings.

**Discussion:**

A list of assessment criteria has been established that will serve as a framework for developing new assessment tools for CR assessment in OMPT. These criteria will be important for guiding the design of certification processes in OMPT as well as other episodes of CR assessment throughout OMPT training.

Keywords: Manual therapy, Clinical reasoning, Assessment, Consensus

## EBP care

**Physical therapists' treatment choices for non-specific low back pain in Florida: an electronic survey**

Carlos E. Ladeira 1 ; M. Samuel Cheng 2 ; Cheryl J. Hill 3

Author Affiliations

Keywords: Low back pain, Practice description, Evidence-based practice, Clinical guidelines, Physical therapy

DOI: <http://dx.doi.org/10.1179/2042618613Y.0000000065>

JMMT Volume 23, Issue 2 (May 2015), pp. 109-118

**Abstract****Objectives:**

No study has described low back pain (LBP) treatment choices among physical therapists (PTs) in the United States (US) in the new millennium. Intervention for LBP in the new millennium is largely based on evidence-based practice (EBP) recommendations. The purpose of this study was twofold: (a) to describe PTs' preferences for treating acute and subacute non-specific LBP in Florida and to compare these preferences to EBP guideline recommendations and (b) to compare outpatient musculoskeletal therapist (MSPT) choices for management of acute and subacute LBP to non-outpatient musculoskeletal therapist (NMSPT) choices.

**Methods:**

The data were collected with an electronic survey. Study participants selected treatment choices for acute and subacute LBP clinical vignettes.

**Results:**

A total of 327 PTs participated in the study, of which 128 worked in outpatient musculoskeletal settings. The most common treatment choices for acute and subacute LBP were home exercise program, exercise in the clinic, back care education, joint mobilization, ice/heat, and interferential current. The EBP adherence rate for acute LBP was 30% for MSPTs and 15% for NMSPTs. Thirty-seven percent (37%) of MSPTs and 30% of NMSPTs adhered to EBP guidelines for subacute LBP.

**Discussion:**

The EBP adherence rate for management of acute and subacute LBP was low. Spinal manipulation was underutilized for management of acute LBP, and passive therapeutic procedures were overutilized for subacute LBP. Physical Therapy schools and professional associations should reemphasize the benefits of spinal manipulation to manage non-specific acute LBP and active interventional procedures to manage subacute LBP.

Keywords: Low back pain, Practice description, Evidence-based practice, Clinical guidelines, Physical therapy

**45 B. MANUAL THERAPY CERVICAL****TMJ education in MT****The status of temporomandibular and cervical spine education in credentialed orthopedic manual physical therapy fellowship programs: a comparison of didactic and clinical education exposure**

Stephen M. Shaffer<sup>1</sup>; Jean-Michel Brismée<sup>1</sup>; Carol A. Courtney<sup>2</sup>; Phillip S. Sizer<sup>1</sup>

Author Affiliations

Keywords: Temporomandibular disorders, Physical therapy specialty, Professional education

DOI: <http://dx.doi.org/10.1179/2042618614Y.0000000087>

JMMT Volume 23, Issue 1 (February 2015), pp. 51-56

Abstract

Objective:

The purpose of this investigation was to establish a baseline of physical therapist education on temporomandibular disorders (TMD)-related topics during credentialed orthopedic manual physical therapy fellowship training and compare it to cervical spine disorders education.

Method:

An online survey was distributed electronically to each fellowship program credentialed by the American Physical Therapy Association (APTA) and recognized by the Academy of Orthopedic Manual Physical Therapists (AAOMPT). Data were analyzed to compare overall exposure to TMD educational content, including a direct comparison of TMD and cervical spine disorders education.

Results:

The response rate was 79%. Thirteen programs (87%) reported providing both didactic and clinical training on both TMD and cervical spine disorders. Didactic education for cervical spine disorders ranged from 16–20 hours to over 25 hours, whereas TMD hours ranged from 0 to 6–10 hours. Clinical education for cervical spine disorders ranged from 11–15 hours to over 25 hours, whereas TMD hours ranged from 0 to 6–10 hours. The number of hours of exposure during didactic training and the number of patients exposed to during clinical training were significantly different when comparing TMD to cervical spine disorders exposure ( $P < 0.0001$ ).

Discussion:

The data indicate a lack of uniformity between credentialed fellowship programs in orthopedic manual physical therapy with respect to the extent to which programs expose trainees to evaluation and management of TMD. There is consistency in that all programs provided more training on cervical spine disorders than TMD. Despite a high level of clinical specialization, fellows-in-training receive minimal TMD education.

Keywords: Temporomandibular disorders, Physical therapy specialty, Professional education

**45 C. MANUAL THERAPY THORACIC****T spine manip and desensitization****Immediate effects of upper thoracic spine manipulation on hypertensive individuals**

John Ward<sup>1</sup>; Ken Tyer<sup>2</sup>; Jesse Coats<sup>3</sup>; Gabrielle Williams<sup>1</sup>; Kristina Kulcak<sup>1</sup>

Author Affiliations

Keywords: Blood pressure, Chiropractic, Manipulation, Heart rate

DOI: <http://dx.doi.org/10.1179/1066981714Z.000000000106>

JMMT Volume 23, Issue 1 (February 2015), pp. 43-50

Abstract

**Purpose:**

The aims of this study were to determine if there were any statistically significant immediate effects of upper thoracic spinal manipulative therapy (SMT) on cardiovascular physiology in hypertensive individuals.

**Introduction:**

Preliminary research suggests that SMT to various regions of the spine may be capable of lowering systolic and diastolic blood pressure in hypertensive individuals. Further studies are warranted to corroborate or refute these findings as well as measure how other attributes of cardiovascular physiology are impacted by SMT.

**Methods:**

Fifty hypertensive participants (age=45.5±13.9 years, height=1.69±0.10 m, body mass=93.9±21.5 kg: mean±standard deviation (SD)) were equally randomized into a single-blind, controlled trial involving two study groups: supine diversified anterior upper thoracic SMT of T1–4, or a ‘no T-spine contact’ control. Outcome measures were electrocardiogram, bilateral pulse oximetry, and bilateral blood pressure measurement performed at baseline, post 1-minute intervention, and post 10-minute intervention. An independent samples t-test was used to compare between-group differences at baseline. A repeated measures ANOVA was used to compare within-group changes over time.

**Results:**

Within-group changes in PR interval and QRS duration demonstrated that the atria were transiently less active post-SMT and the ventricles were more active post-SMT, however the changes were clinically minimal.

**Conclusion:**

The results of this study, and the limited existing normotensive, thoracic-specific SMT research in this field, suggest that cardiovascular physiology, short-term, is not affected by upper thoracic spine SMT in hypertensive individuals to a clinically relevant level.

Keywords: Blood pressure, Chiropractic, Manipulation, Heart rate

**T spine manip for c spine care****A preliminary study comparing the use of cervical/upper thoracic mobilization and manipulation for individuals with mechanical neck pain**

David Griswold ; Ken Learman ; Bryan O'Halloran ; Josh Cleland

Author Affiliations

\*Corresponding author: [dwgriswold@ysu.edu](mailto:dwgriswold@ysu.edu)

Youngstown State University, OH, USA

Volume 23, Issue 2 (May 2015), pp. 75-83 JMMT

Keywords: Mobilizations, Manipulation, Neck pain

DOI: <http://dx.doi.org/10.1179/2042618614Y.0000000095>

Abstract

**Objectives:**

Neck pain is routinely managed using manual therapy (MT) to the cervical and thoracic spines. While both mobilizations and manipulations to these areas have been shown to reduce neck pain, increase cervical range of motion, and reduce disability, the most effective option remains elusive. The purpose of this preliminary trial was to compare the pragmatic use of cervical and thoracic mobilizations vs. manipulation for mechanical neck pain.

**Methods:**

This trial included 20 patients with mechanical neck pain. Each patient was randomized to receive either mobilization or manipulation to both the cervical and thoracic spines during their plan of care. Within-group analyses were made with Wilcoxon signed-rank tests and between-group analyses were made with Mann–Whitney U.

**Results:**

There were no between-group differences for any of the dependent variables including cervical active range of motion (CAROM) ( $P=0.18$ ), deep cervical flexion (DCF) endurance ( $P=0.06$ ), numerical pain rating scale (NPRS) ( $P=0.26$ ), the neck disability index (NDI,  $P=0.33$ ), patient-specific functional scale (PSFS,  $P=0.20$ ), or the global rating of change (GROC) scale ( $P=0.94$ ). Within-group results were significant for all outcome variables ( $P<0.001$ ) from initial evaluation to discharge for both groups.

**Discussion:**

These findings were consistent with other trials previously conducted that applied the MT techniques in a pragmatic fashion, but varied from previous trials where the treatment was standardized. A larger experimental study is necessary to further examine the differences between mobilization and manipulation for neck pain.

**Keywords:** Mobilizations, Manipulation, Neck pain

**45 D. MANUAL THERAPY EXTREMITIES****MT and shoulder pain****Short-term effects of thoracic spinal manipulations and message conveyed by clinicians to patients with musculoskeletal shoulder symptoms: a randomized clinical trial**

Sean P. Riley<sup>1</sup>; Mark P. Cote<sup>1</sup>; Robin R. Leger<sup>2</sup>; Brian T. Swanson<sup>3</sup>; Vincent Tafuto<sup>1</sup>; Phillip S. Sizer<sup>4</sup>; Jean-Michel Brismée<sup>4</sup>

Author Affiliations

Keywords: Physical therapy, Manipulation, Thoracic spine, Shoulder pain

DOI: <http://dx.doi.org/10.1179/2042618613Y.0000000066>

JMMT Volume 23, Issue 1 (February 2015), pp. 3-11

Abstract

**Study design:**

Randomized clinical trial.

**Objectives:**

To evaluate the effects of high-velocity, low-amplitude thrust manipulations (HVLATMs) and various messages on patients with musculoskeletal shoulder symptoms.

**Background:**

Previous studies indicated that HVLATM directed at the thoracic spine and ribs resulted in improvements of shoulder range of motion, pain, and disability in patients with musculoskeletal shoulder symptoms. These studies did not explore if the outcome was dependent on thrust location, clinician communication with the patient, or if there were any lasting effects.

**Methods:**

A consecutive sample of 100 patients with shoulder pain was randomized into four groups. Patients received one intervention session including: six thoracic HVLATM (spine versus scapula), a message about HVLATM (neutral versus positive), and standardized home exercises. Outcome measures included shoulder Numeric Pain Rating Scale (NPRS), NPRS with impingement testing, and Shoulder Pain and Disability Index (SPADI). Measurements were recorded prior to intervention, immediately following intervention, and at short-term follow-up. Kruskal–Wallis statistics were used for between-group comparisons and Wilcoxon signed ranks for within-group comparisons.

**Results:**

Eighty-eight patients (22 per group) completed the study. Statistically significant differences were found for within-group comparisons for most time points assessed. No statistical differences were found for between-group comparisons.

**Conclusion:**

Patients improved following the interventions. Neither the type of HVLATM nor the message conveyed to the patients had a significant effect on the patients' improvements.

Level of evidence:

1b

**Keywords:** Physical therapy, Manipulation, Thoracic spine, Shoulder pain

**48 B. TRIGGER POINTS NEEDLING****Trigger points and HA's**

Curr Pain Headache Rep. 2015 Jul;19(7):503. doi: 10.1007/s11916-015-0503-2.

**Myofascial Head Pain.**

Fernández-de-Las-Peñas C<sup>1</sup>.

Author information

**Abstract**

Muscle nociception is mainly characterized by local tenderness and referred pain. The neurophysiological basis of muscle pain supports a role of sensitization mechanisms. From a clinical viewpoint, muscle pain is represented by the presence of myofascial trigger points (TrPs). Evidence suggests that TrPs are able to start a peripheral nociceptive mechanism and hence contributing to changes in the central nervous system. Several studies demonstrated that the referred pain elicited by TrPs reproduces the headache pattern in patients with tension-type headache (TTH), migraine, cervicogenic headache and, in some individuals, with cluster headache.

In fact, sensitization of nociceptive pain pathways in the central nervous system due to prolonged nociceptive stimuli from TrPs seems to be responsible for the conversion of episodic to chronic TTH. In other headaches, TrPs may be able to stimulate the trigeminal nucleus caudalis and hence triggering a migraine or cluster headache attack. Proper treatment directed towards TrP inactivation has documented positive effects in individuals with these headaches; however, longitudinal studies are needed to further determine the role of TrPs in head pain.

PMID: 26049772

### 51. CFS/BET

#### Sit to stand with total hip

#### **Sit-to-stand biomechanics before and after total hip arthroplasty**

Journal of Arthroplasty, 06/09/2015 Abujaber S, et al.

The purpose of this study was to evaluate changes in movement patterns during a sit-to-stand (STS) task before and after total hip arthroplasty (THA), and to compare biomechanical outcomes after THA to a control group. Although there were significant improvements in movement symmetry 3 months after THA, patients continued to demonstrate lower VGRF and smaller moments on the operated limb compared to non-operated and to controls limbs. Future studies should identify the contributions of physical impairments and the influence of surgical approach on STS biomechanics.

**56. ATHLETICS****Adolescent exercise**

*Br J Sports Med.* 2015 Jun;49(11):730-6. doi: 10.1136/bjsports-2013-093190. Epub 2013 Nov 22.

**Change in objectively measured physical activity during the transition to adolescence.**

Corder K<sup>1</sup>, Sharp SJ<sup>1</sup>, Atkin AJ<sup>1</sup>, Griffin SJ<sup>1</sup>, Jones AP<sup>2</sup>, Ekelund U<sup>3</sup>, van Sluijs EM<sup>1</sup>.

Author information

Abstract

**BACKGROUND:**

Physical activity (PA) declines during adolescence but change in different PA intensities across population subgroups is rarely explored. We describe change in sedentary (SED) time, light (LPA), moderate (MPA) and vigorous PA (VPA) assessed at three time points over 4 years.

**METHODS:**

Accelerometer-assessed PA (min) was obtained at baseline (N=2064), 1 and 4 years later among British children (baseline mean±SD 10.2±0.3-year-old; 42.5% male). Change in SED (<100 counts/min (cpm)), LPA (101-1999 cpm), MPA (2000-3999 cpm) and VPA (≥4000 cpm) was studied using three-level (age, individual and school) mixed-effects linear regression including participants with data at ≥2 time points (N=990). Differences in change by sex, home location and weight status were explored with interactions for SED, LPA and moderate and vigorous PA (MVPA).

**RESULTS:**

SED increased by 10.6 (95% CI 9.1 to 12.2) min/day/year. MPA and VPA decreased by 1.4 (1.0 to 1.8) and 1.5 (1.1 to 1.8) min/day/year, respectively. VPA decreased more than MPA as a percentage of the baseline value. MVPA declined more steeply among boys (3.9 (3.0 to 4.8)) versus girls (2.0 (1.2 to 2.7) min/day/year) despite lower MVPA among girls at all ages; rural (4.4 (3.5 to 5.2)) versus urban individuals (1.3 (0.4 to 2.3) min/day/year) and on weekends (6.7 (5.2 to 8.1)) versus weekdays (2.8 (1.9 to 3.7) min/day/year). MVPA was consistently lower among overweight/obese individuals (-17.5 (-3.9 to -2.5) min/day/year).

**CONCLUSIONS:**

PA decreases and is replaced by SED during early adolescence in British youth. Results indicate the urgency of PA promotion among all adolescents but especially girls and in rural areas. Increasing VPA and targeting PA promotion during weekends appear important.

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**KEYWORDS:**

Adolescents; Health Promotion Through Physical Activity; Physical Activity Promotion in Primary Care

PMID: 24273308

**57. GAIT****Movement analysis**

*BMC Musculoskelet Disord.* 2015 May 29;16(1):131. doi: 10.1186/s12891-015-0591-5.

**The effect of changing movement and posture using motion-sensor biofeedback, versus guidelines-based care, on the clinical outcomes of people with sub-acute or chronic low back pain-a multicentre, cluster-randomised, placebo-controlled, pilot trial.**

Kent P<sup>1,2</sup>, Laird R<sup>3</sup>, Haines T<sup>4,5</sup>.

Author information

## Abstract

**BACKGROUND:**

The aims of this pilot trial were to (i) test the hypothesis that modifying patterns of painful lumbo-pelvic movement using motion-sensor biofeedback in people with low back pain would lead to reduced pain and activity limitation compared with guidelines-based care, and (ii) facilitate sample size calculations for a fully powered trial.

**METHODS:**

A multicentre (8 clinics), cluster-randomised, placebo-controlled pilot trial compared two groups of patients seeking medical or physiotherapy primary care for sub-acute and chronic back pain. It was powered for longitudinal analysis, but not for adjusted single-time point comparisons. The intervention group (n = 58) received modification of movement patterns augmented by motion-sensor movement biofeedback (ViMove, dorsaVi.com) plus guidelines-based medical or physiotherapy care. The control group (n = 54) received a placebo (wearing the motion-sensors without biofeedback) plus guidelines-based medical or physiotherapy care. Primary outcomes were self-reported pain intensity (VAS) and activity limitation (Roland Morris Disability Questionnaire (RMDQ), Patient Specific Functional Scale (PSFS)), all on 0-100 scales. Both groups received 6-8 treatment sessions. Outcomes were measured seven times during 10-weeks of treatment and at 12, 26 and 52 week follow-up, with 17.0 % dropout. Patients were not informed of group allocation or the study hypothesis.

**RESULTS:**

Across one-year, there were significant between-group differences favouring the intervention group [generalized linear model coefficient (95 % CI): group effect RMDQ -7.1 (95 % CI-12.6;-1.6), PSFS -10.3 (-16.6; -3.9), QVAS -7.7 (-13.0; -2.4); and group by time effect differences (per 100 days) RMDQ -3.5 (-5.2; -2.2), PSFS -4.7 (-7.0; -2.5), QVAS -4.8 (-6.1; -3.5)], all p < 0.001. Risk ratios between groups of probability of improving by >30 % at 12-months = RMDQ 2.4 (95 % CI 1.5; 4.1), PSFS 2.5 (1.5; 4.0), QVAS 3.3 (1.8; 5.9). The only device-related side-effects involved transient skin irritation from tape used to mount motion sensors.

**CONCLUSIONS:**

Individualised movement retraining using motion-sensor biofeedback resulted in significant and sustained improvements in pain and activity limitation that persisted after treatment finished. This pilot trial also refined the procedures and sample size requirements for a fully powered RCT. This trial (Australian New Zealand Clinical Trials Registry NCT01572779) was equally funded by dorsaVi P/L and the Victorian State Government.

PMID: 26022102

**59. PAIN****Pain and disability**

Pain. 2015 Jun;156(6):988-97. doi: 10.1097/j.pain.000000000000146.

**How does pain lead to disability? A systematic review and meta-analysis of mediation studies in people with back and neck pain.**

Lee H<sup>1</sup>, Hübscher M, Moseley GL, Kamper SJ, Traeger AC, Mansell G, McAuley JH.  
Author information

## Abstract

Disability is an important outcome from a clinical and public health perspective. However, it is unclear how disability develops in people with low back pain or neck pain. More specifically, the mechanisms by which pain leads to disability are not well understood. Mediation analysis is a way of investigating these mechanisms by examining the extent to which an intermediate variable explains the effect of an exposure on an outcome. This systematic review and meta-analysis aimed to identify and examine the extent to which putative mediators explain the effect of pain on disability in people with low back pain or neck pain. Five electronic databases were searched. We found 12 studies (N = 2961) that examined how pain leads to disability with mediation analysis. Standardized regression coefficients ( $\beta$ ) of the indirect and total paths were pooled. We found evidence to show that self-efficacy ( $\beta = 0.23$ , 95% confidence interval [CI] = 0.10 to 0.34), psychological distress ( $\beta = 0.10$ , 95% CI = 0.01 to 0.18), and fear ( $\beta = 0.08$ , 95% CI = 0.01 to 0.14) mediated the relationship between pain and disability, but catastrophizing did not ( $\beta = 0.07$ , 95% CI = -0.06 to 0.19). The methodological quality of these studies was low, and we highlight potential areas for development.

Nonetheless, the results suggest that there are significant mediating effects of self-efficacy, psychological distress, and fear, which underpins the direct targeting of these constructs in treatment.

PMID: 25760473

Placebo analgesia

**Placebo analgesia enhances descending pain-related effective connectivity: a dynamic causal modeling study of endogenous pain modulation**

The Journal of Pain, 06/12/2015 Sevel LS, et al.

The use of placebo to reduce pain is well documented; however, knowledge of the neural mechanisms underlying placebo analgesia (PA) remains incomplete. The findings highlight the differences between pain processing and modulation at the network level. The results suggest that small placebo effects may be better characterized via changes in the temporal dynamics among pain modulatory regions rather than only changes in the magnitude of BOLD activation.

Cognitive Behavioral therapy and chronic pain

Clin J Pain. 2015 Jul;31(7):603-11. doi: 10.1097/AJP.000000000000141.

**Does Change Occur for the Reasons We Think It Does? A Test of Specific Therapeutic Operations During Cognitive-Behavioral Treatment of Chronic Pain.**

Burns JW<sup>1</sup>, Nielson WR, Jensen MP, Heapy A, Czlapiński R, Kerns RD.

Author information

Abstract

**OBJECTIVE:**

To examine the relative validity of 2 conceptual models-Specific, General-by which therapeutic mechanisms in cognitive-behavioral therapy (CBT) for chronic pain achieve favorable outcomes.

**METHODS:**

As part of a clinical trial of enhanced versus standard CBT, people with chronic pain received treatment consisting of 3 pain coping skill modules. In secondary analyses of a subsample (n=56), we examined pretreatment to session 4 (of 10 sessions) changes in Chronic Pain Coping Inventory subscales that corresponded to receipt of one of 3 modules; namely Relaxation, Exercise, and Cognitive Coping modules.

**RESULTS:**

Findings indicated that: (1) participants receiving the Relaxation module improved more than other groups in relaxation skills, and improved substantially on other coping skills, as well; (2) participants receiving Exercise and Cognitive Coping modules showed mixed improvements and did not improve more than other groups on exercise use or cognitive coping, respectively; and (3) measures of patient-therapist working alliance and patient expectations of treatment benefit at session three correlated significantly with some coping skills changes.

**DISCUSSION:**

Change with CBT may occur both by theory-specified mechanisms and general mechanisms. However, the results provide the most support for a General Mechanism model in which changes on coping skills have spreading effects on the use of other coping skills. Significant relationships between some skill changes and indexes of patient-therapist working alliance and outcome expectations suggest that nonspecific factors also play a role in treatment-related changes in the use of pain coping strategies.

PMID: 25119513

### Pain evidence

Phys Ther. 2015 Apr 30.

#### **Interpreting Effectiveness Evidence in Pain: Short Tour of Contemporary Issues.**

O'Connell NE<sup>1</sup>, Moseley GL<sup>2</sup>, McAuley JH<sup>3</sup>, Wand BM<sup>4</sup>, Herbert RD<sup>5</sup>.

Author information

#### Abstract

There is no shortage of treatment approaches offered to people with pain. The maze of options presents patients and clinicians with difficult choices. Key to making those choices is evidence of treatment effectiveness provided by clinical trials and systematic reviews. Recent growth in the number of clinical trials and systematic reviews, of both high and low quality, makes it vital that users of this evidence—clinicians, researchers, patients, and policy makers—have the skills and knowledge to critically interpret these studies. In this review, we discuss some contemporary issues regarding evidence of effectiveness derived from clinical trials and systematic reviews—issues that we think are critical to understanding the field. We focus on evidence of treatment effectiveness in pain, although many of these issues are relevant to and transferable across the spectrum of evidence-based practice.

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PMID: 25929527

### 60. COMPLEX REGIONAL PAIN

#### Adolescents and CRP

#### **Complex regional pain syndrome in children: a multidisciplinary approach and invasive techniques for the management of nonresponders**

Pain Practice, 06/12/2015Rodriguez Lopez MJ, et al. –

#### Abstract

Complex regional pain syndrome (CRPS) is multifactorial condition with complex pathogenesis characterized by spontaneous or stimulus-induced pain that is disproportionate to the inciting event. It is also commonly accompanied by a myriad of autonomic and motor disturbances in highly variable combinations. This condition has been underreported in children until recently. Consequently, the management of CRPS in the pediatric population presents an even greater challenge than in adults, partly because there is a lack of clinical data concerning the efficacy of the diverse treatment methods available, and partly because successful treatment of CRPS involves a multidisciplinary approach. In this retrospective case series, a multidisciplinary management plan is presented in 10 children for whom the standard noninvasive treatment was unsuccessful. Within this management plan, novel drugs were included such as the capsaicin 8% patch, in addition to invasive techniques in patients who did not respond to noninvasive therapies.

## 61. FIBROMYALGIA

### Fatigue and FM

*Arthritis Care Res (Hoboken)*. 2015 May 27. doi: 10.1002/acr.22626.

#### **Understanding the association of fatigue with other symptoms of fibromyalgia: Development of a cluster model.**

Lukkahatai N<sup>1,2</sup>, Walitt B<sup>2,3</sup>, Espina A<sup>2</sup>, Gelio A<sup>4</sup>, Saligan LN<sup>2</sup>.

Author information

Abstract

#### **OBJECTIVE:**

The study's purpose was to develop symptoms cluster model that can describe factors of FMS associated with fatigue severity as reported by the sample. The study will also explore FMS clinical symptom sub-clusters based on varying symptom intensities.

#### **METHODS:**

FMS individuals (n = 120; 82% between 31-60 years of age, 90% women, 59% Caucasian) diagnosed with the 1990 or 2010 American College of Rheumatology diagnostic criteria were enrolled. Participants completed multiple validated self-report questionnaires to measure fatigue, pain, depression, anxiety, pain catastrophizing, daytime sleepiness, cognitive function, and FMS-related polysymptomatic distress. Cluster analysis using SPSS 19.0 and Structural Equation Modeling using AMOS 17.0 were used.

#### **RESULTS:**

Final Structural Equation Modeling symptoms cluster model showed good fit and revealed that FMS fatigue was associated with widespread pain, symptoms severity, pain intensity, pain interference, cognitive dysfunction, catastrophizing, anxiety, and depression ( $\chi^2 = 121.72$ , df = 98,  $p > 0.05$ ,  $\chi^2 / df = 1.242$ , CFI = 0.982, RMSEA = 0.045). Two distinct clinical symptom sub-clusters emerged; sub-cluster 1 (78% of total subjects) defined by widespread pain, unrefreshed waking, and somatic symptoms and sub-cluster 2 (22% of total subjects) defined by fatigue and cognitive dysfunction with pain being a less severe and less widespread complaint.

#### **CONCLUSION:**

Overall, sub-cluster 1 had more intense symptoms than sub-cluster 2. FMS symptoms may be categorized into two clinical sub-clusters. These findings have implications for an illness whose diagnosis and management are symptom-dependent. A longitudinal study capturing the variability in symptom experience of FMS subjects is warranted. This article is protected by copyright. All rights reserved.

PMID: 26017904

## HA's and FM

Headache. 2015 May 21. doi: 10.1111/head.12590.

**Frequency of Migraine Headaches in Patients With Fibromyalgia.**

Vij B<sup>1</sup>, Whipple MO<sup>2</sup>, Tepper SJ<sup>1</sup>, Mohabbat AB<sup>2</sup>, Stillman M<sup>1</sup>, Vincent A<sup>2</sup>.  
Author information

Abstract

**OBJECTIVE:**

The purpose of this study was to evaluate the frequency of migraine headache in a large cohort of patients with fibromyalgia using a brief migraine headache-screening tool.

**BACKGROUND:**

Several studies report a high prevalence of fibromyalgia among patients with migraine headaches, but there is a dearth of research evaluating the frequency of migraine headaches in patients with fibromyalgia, despite clinical observations suggesting that migraine headaches are common in patients with fibromyalgia.

**DESIGN AND METHODS:**

This was a cross-sectional survey study. Patients (N = 3717) with a previous diagnosis of fibromyalgia who were members of the Mayo Clinic Fibromyalgia Registry were contacted by electronic survey and asked to complete a brief demographic and medical history questionnaire and the validated ID-Migraine screener.

**RESULTS:**

A total of 1730 patients (46.5%) completed the electronic survey. The majority of participants were white (97.2%), female (92.5%), with a mean age of 56.2 ( $\pm$ 13.1) years. Of the respondents, 966 (55.8%) met criteria for migraine headaches. Hypertension (309 [32.3%] vs 294 [40.1%], P = .004), asthma (312 [32.5%] vs 189 [25.9%], P = .011), irritable bowel syndrome (520 [54.6%] vs 348 [47.6], P = .017), chronic fatigue syndrome (486 [50.7%] vs 271 [37.1], P < .0001), depression (634 [66.5%] vs 413 [56.7%], P = .0002), anxiety (415 [43.5%] vs 252 [34.7%], P = .0011), and post-traumatic stress disorder (172 [18.0%] vs 96 [13.2%], P = .006) were all significantly more common in those who met criteria for migraine headaches than those who did not.

**CONCLUSION:**

The results of this study suggest that migraine headaches are common in patients with fibromyalgia. Clinicians who care for either population must be aware that these conditions commonly overlap and can significantly increase a patient's cumulative disease burden.

**KEYWORDS:** ID-Migraine; central sensitization; chronic pain; fibromyalgia; headache; migraine

PMID: 25994041

**62 A. NUTRITION/VITAMINS****Surgery drinks**

*J Hepatol.* 2015 May 29. pii: S0168-8278(15)00240-8. doi: 10.1016/j.jhep.2015.03.032.

**Sugar-sweetened beverage, diet soda, and fatty liver disease in the Framingham Heart Study cohorts.**

Ma J<sup>1</sup>, Fox CS<sup>2</sup>, Jacques PF<sup>1</sup>, Speliotes EK<sup>3</sup>, Hoffmann U<sup>4</sup>, Smith CE<sup>1</sup>, Saltzman E<sup>1</sup>, McKeown NM<sup>5</sup>.

[Author information](#)

Abstract

**BACKGROUND & AIMS:**

Non-alcoholic fatty liver disease affects ~30% of US adults, yet the role of sugar-sweetened beverages and diet soda on these diseases remains unknown. We examined the cross-sectional association between intake of sugar-sweetened beverages or diet soda and fatty liver disease in participants of the Framingham Offspring and Third Generation cohorts.

**METHODS:**

Fatty liver disease was defined using liver attenuation measurements generated from computed tomography in 2634 participants. Alanine transaminase concentration, a crude marker of fatty liver disease, was measured in 5908 participants. Sugar-sweetened beverage and diet soda intake were estimated using a food frequency questionnaire. Participants were categorized as either non-consumers or consumers (3 categories: 1 serving/month to <1 serving/week, 1 serving/week to <1 serving/day, and  $\geq 1$  serving/day) of sugar-sweetened beverages or diet soda.

**RESULTS:**

After adjustment for age, sex, smoking status, Framingham cohort, energy intake, alcohol, dietary fiber, fat (% energy), protein (% energy), diet soda intake, and body mass index, the odds ratios of fatty liver disease were 1, 1.16 (0.88, 1.54), 1.32 (0.93, 1.86), and 1.61 (1.04, 2.49) across sugar-sweetened beverage consumption categories (p trend=0.04). Sugar-sweetened beverage consumption was also positively associated with alanine transaminase levels (p trend=0.007). We observed no significant association between diet soda intake and measures of fatty liver disease.

**CONCLUSION:**

In conclusion, we observed that regular sugar-sweetened beverage consumption was associated with greater risk of fatty liver disease, particularly in overweight and obese individuals, whereas diet soda intake was not associated with measures of fatty liver disease.

**KEYWORDS:** Alanine transaminase; Diet soda; Fatty liver disease; Sugar-sweetened beverages  
PMID: 26055949

**62 B. CRYOTHERAPY****Total knee management**

Orthop Nurs. 2015 May-Jun;34(3):148-53. doi: 10.1097/NOR.000000000000143.

**Does the use of a brief cryotherapy intervention with analgesic administration improve pain management after total knee arthroplasty?**

Wittig-Wells D<sup>1</sup>, Johnson I, Samms-McPherson J, Thankachan S, Titus B, Jacob A, Higgins M.  
Author information

Abstract

**BACKGROUND:**

Prior studies have evaluated only the prolonged use of cryotherapy as a nonpharmacologic pain intervention.

**PURPOSE OF THE STUDY:**

The purpose of this study was to determine whether a 30-minute application of cryotherapy at the time pain medication was given after a total knee arthroplasty (TKA) provided better pain relief than analgesic drugs alone.

**METHODS:**

A pretest, posttest, randomized controlled trial study design with crossover was used to evaluate the effects of cryotherapy on postoperative pain and satisfaction with pain management. A convenience sample of postoperative knee replacement patients constituted participants in the study. Two sequential episodes of pain requiring analgesic administration were studied in each patient, one with a 30-minute cryotherapy application and the other without cryotherapy. Dependent variables were changes in pain (posttest minus pretest) and level of satisfaction with pain management. Data were analyzed with repeated-measures analysis of variance, with  $p < .05$  considered significant.

**RESULTS:**

During two sequential treatments for postoperative pain, a total of 29 TKA patients received analgesic medication administration alone for one pain episode and analgesic medication administration with a brief cryotherapy administration for the other pain episode. No significant difference between the two treatments was found for changes in pain scores after the treatments or patient satisfaction with pain management ( $p > .05$ ). The order in which the treatments were provided was found to be significant ( $p = .02$ ) for scores on patient satisfaction with pain management, with cryotherapy as the treatment for the second pain episode having higher scores than when delivered for the first pain episode. Sixty minutes after analgesic administration with or without cryotherapy, average pain scores remained greater than 7.

**CONCLUSION:**

In TKA patients, the short-term application of cryotherapy with analgesic medication administration did not significantly decrease pain or improve patient satisfaction with pain management compared with analgesic medication administration only. Further study is necessary to determine whether short-term cryotherapy shortly after TKA is of benefit to pain relief and patient satisfaction.

PMID: 25989123

## 63. PHARMACOLOGY

### Medical Marijuana

Headache. 2015 May 25. doi: 10.1111/head.12570.

#### **Comprehensive Review of Medicinal Marijuana, Cannabinoids, and Therapeutic Implications in Medicine and Headache: What a Long Strange Trip It's Been ....**

##### Author information

Abstract

##### **BACKGROUND:**

The use of cannabis, or marijuana, for medicinal purposes is deeply rooted though history, dating back to ancient times. It once held a prominent position in the history of medicine, recommended by many eminent physicians for numerous diseases, particularly headache and migraine. Through the decades, this plant has taken a fascinating journey from a legal and frequently prescribed status to illegal, driven by political and social factors rather than by science. However, with an abundance of growing support for its multitude of medicinal uses, the misguided stigma of cannabis is fading, and there has been a dramatic push for legalizing medicinal cannabis and research. Almost half of the United States has now legalized medicinal cannabis, several states have legalized recreational use, and others have legalized cannabidiol-only use, which is one of many therapeutic cannabinoids extracted from cannabis. Physicians need to be educated on the history, pharmacology, clinical indications, and proper clinical use of cannabis, as patients will inevitably inquire about it for many diseases, including chronic pain and headache disorders for which there is some intriguing supportive evidence.

##### **OBJECTIVE:**

To review the history of medicinal cannabis use, discuss the pharmacology and physiology of the endocannabinoid system and cannabis-derived cannabinoids, perform a comprehensive literature review of the clinical uses of medicinal cannabis and cannabinoids with a focus on migraine and other headache disorders, and outline general clinical practice guidelines.

##### **CONCLUSION:**

The literature suggests that the medicinal use of cannabis may have a therapeutic role for a multitude of diseases, particularly chronic pain disorders including headache. Supporting literature suggests a role for medicinal cannabis and cannabinoids in several types of headache disorders including migraine and cluster headache, although it is primarily limited to case based, anecdotal, or laboratory-based scientific research. Cannabis contains an extensive number of pharmacological and biochemical compounds, of which only a minority are understood, so many potential therapeutic uses likely remain undiscovered. Cannabinoids appear to modulate and interact at many pathways inherent to migraine, triptan mechanisms of action, and opiate pathways, suggesting potential synergistic or similar benefits. Modulation of the endocannabinoid system through agonism or antagonism of its receptors, targeting its metabolic pathways, or combining cannabinoids with other analgesics for synergistic effects, may provide the foundation for many new classes of medications. Despite the limited evidence and research suggesting a role for cannabis and cannabinoids in some headache disorders, randomized clinical trials are lacking and necessary for confirmation and further evaluation.

**KEYWORDS:** CBD; THC; cannabidiol; cannabinoids; cannabis; delta-9-tetrahydrocannabinol; headache; hemp; medical marijuana  
PMID: 26015168

## Antidepressants

World Psychiatry. 2015 Jun;14(2):119-36. doi: 10.1002/wps.20204.

**Effects of antipsychotics, antidepressants and mood stabilizers on risk for physical diseases in people with schizophrenia, depression and bipolar disorder.**

Correll CU<sup>1,2,3,4</sup>, Detraux J<sup>5</sup>, De Lepeleire J<sup>6</sup>, De Hert M<sup>5</sup>.

Author information

## Abstract

People with severe mental illness have a considerably shorter lifespan than the general population. This excess mortality is mainly due to physical illness. Next to mental illness-related factors, unhealthy lifestyle, and disparities in health care access and utilization, psychotropic medications can contribute to the risk of physical morbidity and mortality. We systematically reviewed the effects of antipsychotics, antidepressants and mood stabilizers on physical health outcomes in people with schizophrenia, depression and bipolar disorder. Updating and expanding our prior systematic review published in this journal, we searched MEDLINE (November 2009 - November 2014), combining the MeSH terms of major physical disease categories (and/or relevant diseases within these categories) with schizophrenia, major depressive disorder and bipolar disorder, and the three major psychotropic classes which received regulatory approval for these disorders, i.e., antipsychotics, antidepressants and mood stabilizers.

We gave precedence to results from (systematic) reviews and meta-analyses wherever possible. Antipsychotics, and to a more restricted degree antidepressants and mood stabilizers, are associated with an increased risk for several physical diseases, including obesity, dyslipidemia, diabetes mellitus, thyroid disorders, hyponatremia; cardiovascular, respiratory tract, gastrointestinal, haematological, musculoskeletal and renal diseases, as well as movement and seizure disorders. Higher dosages, polypharmacy, and treatment of vulnerable (e.g., old or young) individuals are associated with greater absolute (elderly) and relative (youth) risk for most of these physical diseases.

To what degree medication-specific and patient-specific risk factors interact, and how adverse outcomes can be minimized, allowing patients to derive maximum benefits from these medications, requires adequate clinical attention and further research.

**KEYWORDS:** Physical illness; antidepressants; antipsychotics; bipolar disorder; cardiovascular; depression; endocrine; gastrointestinal; metabolic; mood stabilizers; respiratory; schizophrenia  
PMID:26043321

**64. ELECTROTHERAPY****Laser and pain and swelling**

*J Cancer Surviv.* 2015 Jun;9(2):287-304. doi: 10.1007/s11764-014-0411-1. Epub 2014 Nov 29.

**Effect of low-level laser therapy on pain and swelling in women with breast cancer-related lymphedema: a systematic review and meta-analysis.**

Smoot B<sup>1</sup>, Chiavola-Larson L, Lee J, Manibusan H, Allen DD.

Author information

Abstract

**PURPOSE:**

This study aims to examine literature on effectiveness of low-level laser therapy (LLLT) in reducing limb volume and pain in adults with breast cancer-related lymphedema (BCRL).

**METHODS:**

PubMed, PEDro, CINAHL, and Cochrane databases were searched using (lymphedema OR edema OR swelling) AND (breast cancer OR mastectomy) AND (laser OR low-level laser therapy OR LLLT OR cold laser). Intervention studies or meta-analyses reporting LLLT for BCRL were included in the search. Pooled effect sizes (ES) and 95 % confidence intervals (CI) were calculated for volume and pain. No limitations were placed on length of follow-up, publication year, or language. Final search was conducted on October 16, 2014.

**RESULTS:**

Nine studies met criteria for inclusion. Within-group pooled ES for volume (six studies) was -0.52 (-0.78, -0.25), representing a 75.7-ml reduction in limb volume after LLLT. Between-group pooled ES for volume (four studies) was -0.62 (-0.97, -0.28), representing a 90.9-ml greater reduction in volume with treatment including LLLT versus not including LLLT. Within-group pooled ES for pain reduction (three studies) was -0.62 (-1.06, -0.19), pain reduction of 13.5 mm (0-100 mm VAS). Between-group pooled ES for pain reduction (two studies) was non-significant at -1.21 (-4.51, 2.10).

**CONCLUSION:**

Moderate-strength evidence supports LLLT in the management of BCRL, with clinically relevant within-group reductions in volume and pain immediately after conclusion of LLLT treatments. Greater reductions in volume were found with the use of LLLT than in treatments without it.

**IMPLICATIONS FOR CANCER SURVIVORS:**

LLLT confers clinically meaningful reductions in arm volume and pain in women with BCRL.

PMID: 25432632

**Laser and LBP****Can intractable discogenic back pain be managed by low-level laser therapy without recourse to operative intervention?**

Journal of Pain Research, 06/08/2015 Ip D, et al.

**T**he aim of the study reported here was to investigate the possible clinical role of low-level laser therapy (LLLT) in discogenic back pain patients who failed to respond to a conventional physical therapy program to avoid recourse to operative intervention. This study suggests that LLLT is a viable option in the conservative treatment of discogenic back pain, with a positive clinical result of more than 90% efficacy, not only in the short-term but also in the long-term, with lasting benefits.

**Methods**

The study reports on the long-term mean 5-year prospective follow-up of a patient cohort of 50 unselected patients visiting the authors' tertiary referral pain center for discogenic back pain who had had a single-level lesion documented by magnetic resonance imaging followed by subsequent discography to confirm the affected disc being the pain generator.

All of the patients who entered the study had failed response to a combination of nonsteroidal anti-inflammatory agents and had had not less than 3 months of conventional physical therapy. LLLT, at a wavelength of 810 nm wavelength emitted from a GaAlAs semiconductor laser device with 5.4 J per point and a power density of 20 mW/cm<sup>2</sup>, was employed.

The treatment regimen consisted of three sessions of treatment per week for 12 consecutive weeks.

**Results**

All but one patient had significant improvement in their Oswestry Disability Index score, from a mean of 50% score to a mean of 10% score, at the end of treatment at 12 weeks.

In addition, surprisingly, the improvement was found maintained at follow-up assessments 1 year and 5 years later.

The one patient among the 50 patients who failed to respond eventually required surgery, while the others did not require surgery.