



PAIN MANAGEMENT FEBRUARY 2003

Akowuah, E., et al. "Less pain with flexible fluted silicone chest drains than with conventional rigid chest tubes after cardiac surgery." *Journal of Thoracic & Cardiovascular Surgery*. 124, no. 5(2002): 1027-8 UI 12407390.

Alexandre, N. M., et al. "Predictors of compliance with short-term treatment among patients with back pain." *Pan American Journal of Public Health*. 12, no. 2(2002): 86-94 UI 12243693.

OBJECTIVE: Great efforts have been made to find effective treatments for back pain. Nevertheless, the effectiveness of a particular treatment can depend on patient compliance. The objective of this study was to prospectively investigate whether patients' demographic factors, clinical factors, external barriers in following the treatment, and perceptions of disability, quality of life, depression, and control over health were predictive of compliance with a physical therapy program carried out with patients with low back pain. **METHODS:** This was an exploratory prospective cohort study that was carried out in New York City during 1999. All study participants answered a questionnaire at the initial clinical evaluation by a physical therapist and were followed during the treatment. The study assessed compliance with the three treatment regimens that were prescribed for every patient: attending scheduled physical therapy sessions, following a program of home exercises, and watching back-education videotapes. Depending on the individual patient, the planned treatment program could last from 2 to 6 weeks. The study employed a battery of instruments to measure patient characteristics that included perceived functional limitations, perceived quality of life, depression, and their beliefs about their health. Student's t tests and chi-square tests were used to determine if non- and low-compliant patients differed significantly from high-compliant patients. Logistic regression was used to estimate adjusted odds ratios expressing the association of selected variables with compliance. **RESULTS:** We found that 51% of the patients were either noncompliant or low-compliant overall with the low back pain treatment program. There were differences in compliance behavior among the three treatment regimens, with compliance being highest for watching the back-education videotapes and lowest for doing the home exercises. Poor compliance overall was positively associated with the expectation of barriers in following the proposed treatment, with comorbidity, and with longer duration of treatment in this program. **CONCLUSIONS:** The findings of our study indicate that patient compliance with back pain treatment is a serious and complex problem. Nevertheless, while this study was only an exploratory one, we believe that the results of this study can be used by care providers to identify patients likely to become noncompliant and also by researchers to plan specific studies on the effectiveness of treatment programs for patients with low back pain.

Allcock, N., J. McGarry, and R. Elkan. "Management of pain in older people within the nursing home: a preliminary study." *Health & Social Care in the Community*. 10, no. 6(2002): 464-71 UI 12485133.

The provision of continuing care for older people has largely shifted from the hospital setting to the community, and nursing homes increasingly provide support for older people, many of whom exhibit multiple pathology and complex health and social care needs. However, the quality of pain management within this setting has been identified as an issue of concern. It has been estimated that approximately two-thirds of people aged 65 years and over experience chronic pain, and that the prevalence of chronic pain in nursing home residents is between 45% and 80%. However, there exist a number of barriers to the identification and management of chronic pain among older people resident in nursing homes, including sensory impairments in older people themselves and educational deficits among professionals. Such barriers need to be overcome if pain management is to be improved. The present study involved administering a pre-piloted postal questionnaire to the managers of 121 nursing homes within a geographically defined area. Sixty-eight (56%) were completed and returned. The questionnaire broadly covered the following: prevalence of chronic pain and use of interventions; assessment and management strategies; education and training; and communication barriers. Overall, 37% of nursing home residents were identified as experiencing chronic non-malignant pain (pain lasting longer than 3 months not caused by cancer) and 2% were reported as experiencing chronic malignant pain (pain lasting for more than 3 months caused by cancer). Paracetamol was identified as the most 'often' used analgesia for both pain modalities. Sixty-nine per cent of nursing homes did not have a written policy regarding pain management and 75% did not use a standardised pain assessment tool. Forty-four per cent of nursing homes provided education or training sessions for qualified staff and 34% provided this for care assistants. Forty per cent of qualified staff and 85% of care assistants had no specialist knowledge regarding the management of pain in older people. The present study confirms the need for the development of effective pain management strategies underpinned by appropriate training and education in order to meet the particular needs of older people.

Aslam, M. S., et al. "Pharmacokinetics of intravenous/subcutaneous Enoxaparin in patients with acute coronary syndrome undergoing percutaneous coronary interventions." *Catheterization & Cardiovascular Interventions*. 57, no. 2(2002): 187-90 UI 12357518.

Plasma anti-Xa activity after Enoxaparin administration in patients with acute coronary syndrome (ACS) undergoing coronary angiography and percutaneous coronary intervention (PCI) has not been well established. Patients presenting with non-ST-elevation ACS received an initial dose (0.75 mg/kg) of Enoxaparin intravenously (IV), with subsequent doses (1 mg/kg) subcutaneously (SC) beginning 8 hr following the IV dose. Patients who underwent PCI within 4 hr of the IV dose or 8 hr of the SC dose did not receive additional Enoxaparin. All others received 0.3-0.4 mg/kg additional IV Enoxaparin at the time of PCI. All patients undergoing PCI received a glycoprotein IIb/IIIa inhibitor and clopidogrel. Mean plasma anti-Xa activity (units/ml) 10 min and 2, 4, 6, and 8 hr after IV dose was 2.29 +/- 0.39, 0.99 +/- 0.29, 0.58 +/- 0.14, 0.36 +/- 0.13, 0.24 +/- 0.11, respectively. Mean Plasma anti-Xa activity 2, 4, 6, 8, 10, and 12 hr after SC dose was 1.01 +/- 0.22, 1.13 +/- 0.27, 1.1 +/- 0.41, 0.84 +/- 0.19, 0.62 +/- 0.24, and 0.46 +/- 0.21, respectively. Mean plasma anti-Xa activity at the start and end of PCI was 1.27 +/- 0.41 and 1.07 +/- 0.42, respectively. In conclusion, adequate anticoagulation with Enoxaparin may be achieved within 10 min after an IV dose of 0.75 mg/kg. High-risk ACS patients requiring urgent PCI may benefit from this approach. PCI may be performed without additional anticoagulation within 4 hr of IV or 8 hr of SC

Enoxaparin. PCI 4-8 hr after IV dose or 8-12 hr after SC dose will require additional IV Enoxaparin 0.3-0.4 mg/kg to ensure therapeutic anti-Xa activity. Copyright 2002 Wiley-Liss, Inc.

Bailie, G. R., and C. A. Johnson. "Safety of propoxyphene in dialysis patients." *Seminars in Dialysis*. 15, no. 5(2002): 375 UI 12358644.

Barnard, D. "World Health Organization guidelines for national narcotics control policies.[comment]." *Journal of Palliative Medicine*. 5, no. 4(2002): 575-7 UI 12243685.

Battista, E. M. "The assessment and management of chronic pain in the elderly. A guide for practice." *Advance for Nurse Practitioners*. 10, no. 11(2002): 28-32; quiz 32-3 UI 12478944.

Baxt, W. G., et al. "A neural network aid for the early diagnosis of cardiac ischemia in patients presenting to the emergency department with chest pain.[comment]." *Annals of Emergency Medicine*. 40, no. 6(2002): 575-83 UI 12447333.

STUDY OBJECTIVE: Chest pain is the second most common chief complaint presented to the emergency department. Although the causes of chest pain span the clinical spectrum from the trivial to the life threatening, it is often difficult to identify which patients have the most common life-threatening cause, cardiac ischemia. Because of the potential for poor outcome if this diagnosis is missed, physicians have had a low threshold for admitting patients with chest pain to the hospital, the vast majority of whom are found not to have cardiac ischemia. In an earlier study with a large chest pain patient registry, an artificial neural network was shown to be able to identify the subset of patients who present to the ED with chest pain who have sustained acute myocardial infarction. The objective of this study was to use the same registry to determine whether a network could be trained accurately to identify the larger subset of patients who have cardiac ischemia. METHODS: Two thousand two hundred four adult patients presenting to the ED with chest pain who received an ECG were used to train and test an artificial neural network to recognize the presence of cardiac ischemia. Only the data available at the time of initial patient contact were used to replicate the conditions of real-time evaluation. Forty variables from patient history, physical examination, ECG, and the first set of chemical cardiac marker determinations were used to train and subsequently test the network. The network was trained and tested by using the jackknife variance technique to allow for the network to be trained on as many of the features of the small subset of ischemic patients as possible. Network accuracy was compared with 2 existing aids to the diagnosis of cardiac ischemia, as well as a derived regression model.

RESULTS: The network had a sensitivity of 88.1% (95% confidence interval [CI] 84.8% to 91.4%) and a specificity of 86.2% (95% CI 84.6% to 87.7%) for cardiac ischemia despite the fact that a mean of 5% of all required network input data and 41% of cardiac chemical marker data were missing. The network also performed more accurately than the 3 other tested approaches. CONCLUSION: These data suggest that an artificial neural network might be able to identify which patients who present to the ED with chest pain have cardiac ischemia with useful sensitivities and specificities.

Bercovitch, M., A. Waller, and A. Adunsky. "Multidimensional continuous pain assessment chart (MCPAC) for terminal cancer patients: a preliminary report." *American Journal of Hospice & Palliative Care*. 19, no. 6(2002): 419-25 UI 12442980.

Current use of pain measures is limited in clinical practice. The common pain measures neither target nor monitor the changes that occur with time with regard to

the effect of other parameters associated with pain control. Changes in parameters, such as pain type, various pharmacological and nonpharmacological interventions, dosage of medications, and use of rescue doses, usually complicate pain control in terminal cancer patients. The authors propose use of a multidimensional, continuous pain chart that permits better assessment and control of pain. The chart integrates visual analogue pain assessment, special treatment techniques, regular medications and rescue doses, co-analgesics, pain categories, parameters relating to quality of life, sleep, and mobility. A total of 1,178 assessments were performed in 100 consecutive patients with full compliance. The chart permitted a continuous monitoring of patients' most important needs concerned with pain control and was easily integrated into the hospice daily routines. We conclude that the chart represents an effective and friendly graphic tool to monitor pain and associated parameters that relate to the quality of the broad spectrum of pain control. The hope is that this tool may improve pain control by hospice professionals and facilitate communication between patients and the interdisciplinary team members.

Bergs, L. "Pain control = big challenge.[comment]." *Journal of Gerontological Nursing*. 28, no. 11(2002): 3; author reply 3 UI 12465195.

Berry, C., K. P. Balachandran, and K. G. Oldroyd. "The RITA 3 trial." *Lancet*. 360, no. 9349(2002): 1974 UI 12493288.

Bird, A., and M. Wallis. "Nursing knowledge and assessment skills in the management of patients receiving analgesia via epidural infusion." *Journal of Advanced Nursing*. 40, no. 5(2002): 522-31 UI 12437601.

BACKGROUND: In Australian hospitals, epidural infusions are commonly used for the management of post-operative pain in maternity and surgical patients, with little research evidence to indicate the efficacy of the educational preparation of nurses undertaking pain management. AIMS: To describe nurses' assessment skills and knowledge related to the management of a patient with an epidural infusion and to explore relationships between these variables and the levels of education/clinical experience of the nurses. METHODS: This descriptive correlational study used a convenience sample of surgical and obstetric unit registered nurses to explore relationships between the knowledge and skill in epidural management and the educational preparation of the nurse. Data were collected via survey and observation, using instruments developed by the research team. RESULTS: The nurses had a good knowledge base for the performance of sensory blockade assessment but scored less well in motor blockade assessment and clinical decision-making. Nurses who had clinical experience, had completed a self-directed learning package and who worked in surgical areas scored higher on the survey than other nurses. Observation scores revealed a range of performance outcomes. There was only a weak correlation between knowledge and skill performance. There were no differences in scores for the observation exercise for different groups of nurses. CONCLUSION: The results of this study indicated that the nurses' theoretical knowledge outweighed their clinical skill performance and clinical decision-making. Education for nurses regarding the management of epidural infusions needs to be comprehensive, context specific and have the capacity to develop the nurse's autonomous critical thinking and clinical decision-making skills. Strategies for this include self-directed learning packages best supplemented by a demonstration of clinical skills and supervised practice.

Borg-Stein, J. "Management of peripheral pain generators in fibromyalgia." *Rheumatic Diseases Clinics of North America*. 28, no. 2(2002): 305-17 UI 12122919.

Fibromyalgia is a widespread chronic pain disorder that is characterized in part by central sensitization and increased pain response to peripheral nociceptive and non-nociceptive stimuli. Part of the comprehensive pain management of patients with fibromyalgia should include a thoughtful evaluation and search for peripheral pain generators that either are associated with fibromyalgia or are coincidentally present. The identification and treatment of these pain generators lessens the total pain burden, facilitates rehabilitation and decreases the stimuli for ongoing central sensitization. [References: 72]

Campbell, S. M., et al. "Quality assessment for three common conditions in primary care: validity and reliability of review criteria developed by expert panels for angina, asthma and type 2 diabetes." *Quality & Safety in Health Care*. 11, no. 2(2002): 125-30 UI 12448803.

OBJECTIVES: To field test the reliability, validity, and acceptability of review criteria for angina, asthma, and type 2 diabetes which had been developed by expert panels using a systematic process to combine evidence with expert opinion. **DESIGN:** Statistical analysis of data derived from a clinical audit, and postal questionnaire and semi-structured interviews with general practitioners and practice nurses in a representative sample of general practices in England. **SETTING:** 60 general practices in England. **MAIN OUTCOME MEASURES:** Clinical audit results for angina, asthma, and type 2 diabetes. General practitioner and practice nurse validity ratings from the postal questionnaire. **RESULTS:** 54%, 59%, and 70% of relevant criteria rated valid by the expert panels for angina, asthma, and type 2 diabetes, respectively, were found to be usable, valid, reliable, and acceptable for assessing quality of care. General practitioners and practice nurses agreed with panellists that these criteria were valid but not that they should always be recorded in the medical record. **CONCLUSION:** Quality measures derived using expert panels need field testing before they can be considered valid, reliable, and acceptable for use in quality assessment. These findings provide additional evidence that the RAND panel method develops valid and reliable review criteria for assessing clinical quality of care.

Cardone, D. A., and A. F. Tallia. "Diagnostic and therapeutic injection of the elbow region." *American Family Physician*. 66, no. 11(2002): 2097-100 UI 12484691.

Joint injection of the elbow is a useful diagnostic and therapeutic tool for the family physician. In this article, the injection procedures for the elbow joint, medial and lateral epicondylitis, and olecranon bursitis are reviewed. Persistent pain related to inflammatory conditions responds well to injection in the region. Indications for elbow joint injection include osteoarthritis and rheumatoid arthritis. Corticosteroid injection is an accepted treatment option for medial and lateral epicondylitis. Olecranon bursa aspiration and injection are useful when that bursa is inflamed. The proper techniques, choice and quantity of pharmaceuticals, and appropriate follow-up essential for effective outcomes are discussed. [References: 13]

Casarett, D. J., et al. "Is satisfaction with pain management a valid and reliable quality indicator for use in nursing homes?" *Journal of the American Geriatrics Society*. 50, no. 12(2002): 2029-34 UI 12473017.

OBJECTIVES: To determine whether satisfaction with pain management can be measured reliably in nursing homes and to gather preliminary data about the validity of satisfaction assessments in this population. **DESIGN:** Cross-sectional interview study. **SETTING:** Two urban nursing homes. **PARTICIPANTS:** Sixty-six nursing home residents with pain. **MEASUREMENTS:** Overall satisfaction with pain management, satisfaction with pain medication, experiences related to pain management, cognitive function, depressive symptoms, and retest reliability of overall satisfaction rating. **RESULTS:** Most residents (60/66; 91%) could rate their overall satisfaction with pain

management. Overall satisfaction was weakly correlated with pain severity at the time of the interview (Spearman correlation coefficient = -0.28; P = .033) and over the past week (-0.27; P = .038). Overall satisfaction was also negatively associated with the Geriatric Depression Scale score (-0.50; P < .001). Satisfaction with pain medication was associated with several ratings of the medication's beneficial effects, including improved activity, sleep, and speed of relief, but not with the frequency with which it caused side effects. Ratings of overall satisfaction showed good reliability overall (kappa = 0.62; P < .001) and for those with Mini-Mental State Examination scores greater than 21 (kappa = 0.70; P < .001) and 21 or less (kappa = 0.54; P = .004). CONCLUSION: These results suggest that satisfaction with pain management can be measured reliably when residents are able to report their pain, but further research is needed before satisfaction with pain management can be incorporated into routine assessments in nursing homes.

Cevik, I., et al. "Lack of effect of intrarectal lidocaine for pain control during transrectal prostate biopsy: a randomized prospective study." *European Urology*. 42, no. 3(2002): 217-20 UI 12234505.

INTRODUCTION AND OBJECTIVES: Transrectal ultrasound guided biopsy is an essential part in the diagnosis of prostate cancer. Although this procedure is well tolerated by most patients, sometimes it can result in some uneasiness. In this randomised double-blind placebo controlled study, we evaluated the effectiveness of intrarectal lidocaine during TRUS guided biopsy. MATERIALS AND METHODS: 100 consecutive eligible patients who had elevated total prostate specific antigen (tPSA) and/or abnormal digital rectal examination (DRE) were included into this study. Patients were randomised into two groups. Group I received 20 cc of 2% intrarectal lidocaine 20 minutes before transrectal ultrasound guided biopsy and Group II received same amount of serum physiologic. Pain was assessed using a 10 point modified visual analog scale. RESULTS: Mean patient age was 65.5+/-2.5 and 64.5+/-11.5 years, mean tPSA was 12.3+/-3.6 and 11.3+/-1.7 ng/ml, mean biopsy duration was 6.8+/-2.5 and 6.6+/-2.2 minutes, mean pain score during transrectal ultrasound guided biopsy was 4.8+/-2.2 and 4.4+/-2.1 in Groups I and II, respectively. No statistically significant difference was observed with respect to age, tPSA, mean biopsy duration and pain score between these groups. There was only one patient who could not tolerate the procedure at all, and he was paradoxically in the lidocaine group. CONCLUSION: The use of intrarectal lidocaine is not superior to placebo during transrectal prostate biopsy for pain control.

Chandler, B., et al. "To leave or not to leave? A retrospective review of appendectomy during diagnostic laparoscopy for chronic pelvic pain." *Missouri Medicine*. 99, no. 9(2002): 502-4 UI 12462943.

Chronic pelvic pain in females is a common symptom encountered by family practitioners, gynecologists, gastroenterologists, and general surgeons. In this study, we retrospectively reviewed the charts of 22 female patients who had chronic pelvic pain or acute exacerbation of chronic pelvic pain. None had signs of appendicitis. All were treated with a diagnostic laparoscopy with appendectomy. Of the 22 patients, 20 had complete relief of their pain; 17 had an abnormal histopathological diagnosis of their appendices.

Chang, M. C., et al. "Overcoming patient-related barriers to cancer pain management for home care patients. A pilot study." *Cancer Nursing*. 25, no. 6(2002): 470-6 UI 12464839.

The purpose of this pilot study was to explore the effectiveness of a pain education program to overcome patient-related barriers in managing cancer pain for Taiwanese home care patients with cancer. The pain education program was developed based on previous studies of Taiwanese patient-related barriers to cancer

pain management. The Barriers Questionnaire-Taiwan form, the Brief Pain Inventory, the Medication Adherence Questionnaire, and a demographic questionnaire were used for data collection. The sample consisted of 18 patients in the experimental group and 19 patients in the control group. Descriptive statistics, tests, and paired tests were used to analyze the data. Results of this study revealed that patients who received the pain educational program had significantly greater reduction in Barriers Questionnaire-Taiwan form scores and more improvement in medication adherence compared with patients who did not participate in the program. When compared to pretest scores, patients scores after receiving the pain education intervention showed significant improvement on the Barriers Questionnaire-Taiwan form, medication adherence, pain intensity, and pain interference. The results of this study support the effectiveness of the pain education program on overcoming the barriers to cancer pain management for Taiwanese home care patients with cancer.

Charles, H. "Venous leg ulcer pain and its characteristics." *Journal of Tissue Viability*. 12, no. 4(2002): 154-8 UI 12476504.

This study investigated the prevalence, severity and characteristics of pain associated with venous leg ulceration. Sixty-five patients suffering with venous leg ulceration were randomised to one of three treatment groups over a 12-week treatment period. All patients received short-stretch compression bandaging. Data were collected by use of a visual analogue scale and the McGill Pain Questionnaire. Seventy per cent of patients reported pain on entry to the study and within 2 weeks of effective treatment initial pain was dramatically reduced. Patients typically described their pain as throbbing, sharp, itchy, sore and tender. The affective nature of pain was often described as tiring and patients evaluated their pain as being annoying and nagging. This study highlights the importance of pain associated with venous leg ulceration.

Chaudhuri, K. R., et al. "The Parkinson's disease sleep scale: a new instrument for assessing sleep and nocturnal disability in Parkinson's disease." *Journal of Neurology, Neurosurgery & Psychiatry*. 73, no. 6(2002): 629-35 UI 12438461.

BACKGROUND: No formal instruments are available for quantifying sleep problems in Parkinson's disease. OBJECTIVE: To develop a new sleep scale to quantify the various aspects of nocturnal sleep problems in Parkinson's disease, which may occur in up to 96% of affected individuals. METHODS: Employing a multidisciplinary team approach, a visual analogue scale was devised addressing 15 commonly reported symptoms associated with sleep disturbance in Parkinson's disease-the Parkinson's disease sleep scale (PDSS). In all, 143 patients with Parkinson's disease completed the PDSS, covering the entire spectrum of disease from newly diagnosed to advanced stage. As controls, 137 age healthy matched subjects also completed the scale. Test-retest reliability was assessed in a subgroup of subjects. The Epworth sleepiness scale was also satisfactorily completed by 103 of the patients with Parkinson's disease. RESULTS: PDSS scores in the Parkinson group were significantly different from the healthy controls. Patients with advanced Parkinson's disease had impaired scores compared with early/moderate disease. Individual items of the scale showed good discriminatory power between Parkinson's disease and healthy controls. Relevant items of the PDSS correlated with excessive daytime sleepiness. The scale showed robust test-retest reliability. CONCLUSIONS: This appears to be the first description of a simple bedside screening instrument for evaluation of sleep disturbances in Parkinson's disease. A combination of subitems may help identify specific aspects of sleep disturbance, which in turn may help target treatment.

Chelly, J. E., et al. "Outpatient lower extremity infusions." *Best Practice & Research. Clinical Anaesthesiology*. 16, no. 2(2002): 311-20 UI 12491560.

The considerable development of ambulatory surgery has led to an increase in the number of lower extremity procedures performed in an outpatient setting. More recently, the availability of disposable pumps has allowed us to extend the indications of continuous nerve blocks for ambulatory post-operative pain management. Indications for lumbar plexus continuous blocks include anterior cruciate ligament (ACL) reconstruction and patella repairs as well as frozen knee, whereas continuous sciatic blocks are indicated for major foot and ankle surgery. Different modes of local anaesthetic administration have been applied, including the use of repeated bolus, continuous administration and, more recently, patient-controlled perineural infusions. This latter technique seems to be the preferred mode because it offers the advantage of tailoring the amount of local anaesthetics, mostly 0.2% ropivacaine, to the individual need and also maximizes the duration of infusion for a given volume of local anaesthetic. Although the preliminary reports indicate that lower extremity continuous blocks provide effective post-operative ambulatory analgesia and are safe, especially as a part of a multimodal approach, appropriate training in these techniques represents one of the most important limiting factors of the placement of perineural catheters. Additional research is required to determine the optimal conditions in which these techniques are indicated. [References: 26]

Chu, J., B. S. Gozon, and I. Schwartz. "Twitch-obtaining intramuscular stimulation in reflex sympathetic dystrophy." *Electromyography & Clinical Neurophysiology*. 42, no. 5(2002): 259-66 UI 12168246.

BACKGROUND: Reflex Sympathetic Dystrophy (RSD) remains a painful disease entity of undetermined etiology and variable response to therapy. FINDINGS: Presented is a patient with left leg early RSD and chronic musculoskeletal back pain who received automated and electrical twitch-obtaining intramuscular stimulation (ATOIMS & ETOIMS) treatments. Diagnosis combined clinical symptoms of pain and allodynia, signs of motor/trophic changes and electromyographic evidence of especially of left L5 root level irritation, with chronic bilateral, multiple level partial lumbosacral nerve root involvement. Signs and symptoms of early RSD resolved with therapy. CONCLUSIONS: ATOIMS-ETOIMS have a promising role in the treatment of early RSD associated with neuropathic pain resulting from spondylotic radiculopathy.

Chua, S. K. "Epidural morphine alone is inadequate for postthoracotomy pain relief.[comment]." *Anesthesia & Analgesia*. 95, no. 6(2002): 1825; author reply 1825 UI 12456478.

Clark, C. E., and R. J. Powell. "The differential blood pressure sign in general practice: prevalence and prognostic value." *Family Practice*. 19, no. 5(2002): 439-41 UI 12356690.

BACKGROUND: Patients sometimes have differences of $>$ or $=20/10$ mmHg in their blood pressure depending on which arm is measured. The prevalence and prognostic value of this finding in general practice are unknown. If these differences are due to peripheral vascular disease, these patients may be at increased risk of cardiovascular or cerebrovascular events. OBJECTIVE: Our aim was to establish the frequency and prognostic value of a blood pressure difference between arms in one rural general practice. METHODS: Paired blood pressure readings were collected from patients attending the surgery. The outcome measures of myocardial infarction, new diagnosis of angina, a cerebrovascular event or death were recorded prospectively. RESULTS: A total of 280 patients were examined, and of these 13.6% had a systolic blood pressure difference (SBPD) of $>$ or $=20$ mmHg, and 23.2% a diastolic blood pressure difference (DBPD) of $>$ or $=10$ mmHg. Eighty-three patients were followed-up for 5.6 years. Patients with a DBPD of $>$ or $=10$ mmHg showed a mean event-free survival of 3.3 years [95% confidence interval (CI) 2.2-4.4] compared with 5.0 years (95% CI 4.7-5.3) for those with a DBPD of <10 mmHg ($P < 0.0001$). Patients

with an SBPD of ≥ 20 mmHg showed a mean event-free survival of 3.5 years (95% CI 2.3-4.7) compared with 4.9 years (95% CI 4.5-5.2) for an SBPD of < 20 mmHg ($P = 0.043$). CONCLUSIONS: During a single assessment of blood pressure, there will be a minority of patients with a difference of $\geq 20/10$ mmHg between their right and left arms. Measurement of both arms is therefore necessary to diagnose and treat hypertension accurately. This study suggests an association between blood pressure difference and increased morbidity and mortality. Priority should be given to managing other risk factors aggressively in those patients with a reproducible blood pressure difference of $\geq 20/10$ mmHg.

Cohen, M., et al. "Impact of intra-aortic balloon counterpulsation with different balloon volumes on cardiac performance in humans." *Catheterization & Cardiovascular Interventions*. 57, no. 2(2002): 199-204 UI 12357520.

Intra-aortic balloon (IAB) counterpulsation can augment the cardiac output. However, the effect of different IAB volumes on cardiac performance has not been adequately evaluated in humans. Eighty-two patients (52 males [63%]; mean age, 65 \pm 12 years; mean body surface area [BSA], 1.8 \pm 0.2 m²) had IAB counterpulsation for cardiogenic shock, refractory angina, and preoperatively for high-risk cardiac surgery. Cardiac hemodynamics were prospectively studied during IAB with inflation volumes of 32 vs. 40 cc. Hemodynamic data collected included aortic pressure, pulmonary artery pressure, systemic and mixed venous oxygen saturations, and cardiac output (by Fick). Transthoracic echocardiography (TTE) was used to obtain both velocity time integrals (VTIs) and the area of the left ventricular outflow tract (LVOT). Left ventricular stroke volume was then calculated as LVOT area \times VTI. Cardiac output (CO) determined by the Fick method and VTI did not differ significantly ($P = NS$) between the two inflation volumes ($y = 0.002 + 0.97x$). In a subgroup of 33 patients with BSA ≤ 1.8 m², the CO (by VTI) was slightly lower with IAB inflation volume of 32 vs. 40 cc ($P = 0.05$). Overall, smaller IAB inflation volumes do not affect the hemodynamic improvement seen during IAB counterpulsation. However, in patients with smaller BSA, larger inflation volumes may further augment CO. Copyright 2002 Wiley-Liss, Inc.

Cook, K. F., et al. "Reliability by surgical status of self-reported outcomes in patients who have shoulder pathologies." *Journal of Orthopaedic & Sports Physical Therapy*. 32, no. 7(2002): 336-46 UI 12113468.

STUDY DESIGN: A test-retest design was used to evaluate the reliability of the self-report sections of 4 shoulder pain and disability scales. OBJECTIVE: The objective of the study was to compare interitem consistency and test-retest reliability by surgical status (postoperative versus nonoperative) and to evaluate the effect of surgical status in the prediction of retest scores. BACKGROUND: Patients and healthcare providers evaluate shoulder status based on self-evaluations of pain and disability. Shoulder outcome measures have been developed that include self-reports, but the properties of these measures have not been assessed by surgical status. METHODS AND MEASURES: A questionnaire containing self-report sections of 4 shoulder scales was administered to study participants twice with 1 week between administrations. The outcome measures examined were the: (1) University of California at Los Angeles (UCLA) Shoulder Score; (2) Constant-Murley Scale (CMS); (3) American Shoulder and Elbow Society (ASES) Shoulder Index; and (4) Shoulder Pain and Disability Index (SPADI). Intraclass correlation coefficients (ICC) were calculated to estimate the test-retest reliability of each of the scales and subscales. The interitem consistencies of the multi-item subscales were assessed using Cronbach's alpha. The effect of surgical status on shoulder outcome scale reliability was evaluated using a general linear models approach. RESULTS: The interitem consistency estimates for the multi-item scales were high with both operative and nonoperative participants (0.88 to 0.96). With the exception of the satisfaction

subscale of the UCLA Shoulder Score for the nonsurgical group, the estimated intraclass coefficients ranged from 0.51 to 0.91. The prediction of UCLA-satisfaction and ASES-disability, pain, and total retest scores was improved with the addition of surgical status into a regression model. CONCLUSIONS: The examined scales exhibited good internal consistency across surgical status. The postsurgical sample's reproducibility estimates tended to be higher than those of the nonsurgical sample. Reliability of shoulder outcome scales can be affected by patient surgical status.

Coward, K. "Volts and salts in pain relief." *Biologist*. 49, no. 5(2002): 209-12 UI 12391411.

Many pharmaceutical companies are pursuing the 'holy grail' of an effective pain relief drug that has no harmful side effects. The voltage-gated sodium channel family offers some promising targets.

de Vet, H. C., et al. "Episodes of low back pain: a proposal for uniform definitions to be used in research." *Spine. Online*. 27, no. 21(2002): 2409-16 UI 12438991.

STUDY DESIGN: Literature review and group discussions. OBJECTIVE: To propose uniform definitions for low back pain episodes to be used in research. BACKGROUND: Different definitions of episodes have been used in low back pain studies. This hampers comparison of study results. Definitions are proposed for episodes of low back pain, care for low back pain, and work absence because of low back pain. METHODS: In a Medline search, we identified about 1200 papers, of which 81 possibly contained a definition of episodes. In group discussions, we decided which definitions to propose and discussed their applicability. RESULTS: We found few definitions in the literature. In the group discussions we decided to define an episode of LBP as a period of pain in the lower back lasting for more than 24 hours, preceded and followed by a period of at least 1 month without low back pain. An episode of care for low back pain was defined as a consultation or a series of consultations for low back pain, preceded and followed by at least 3 months without consultation for low back pain. An episode of work absence due to low back pain was defined as a period of work absence due to low back pain, preceded and followed by a period of at least 1 day at work. CONCLUSIONS: In many studies, episodes of low back pain are mentioned without a clear definition. We consider our proposed definitions of episodes to be arbitrary but well considered. We advise that they be tested for use in future research. [References: 48]

DeAngelis, C. D. "Pain management: a call for papers." *Archives of Internal Medicine*. 162, no. 22(2002): 2524 UI 12456223.

Deviren, V., et al. "Predictors of flexibility and pain patterns in thoracolumbar and lumbar idiopathic scoliosis." *Spine. Online*. 27, no. 21(2002): 2346-9 UI 12438982.

STUDY DESIGN: A retrospective evaluation of radiographs in patients with idiopathic scoliosis was undertaken to assess predictors of flexibility. OBJECTIVE: To evaluate potential predictors of flexibility in patients with thoracolumbar and lumbar scoliosis. SUMMARY OF BACKGROUND DATA: Curve flexibility is an important consideration in the operative management of idiopathic scoliosis. Flexibility of the major curve is a useful predictor of expected surgical correction, and flexibility of compensatory curves determines whether they are structural or nonstructural. An accurate assessment of curve flexibility has important implications on surgical approaches and planning for deformity correction. The role of age and curve magnitude in predicting curve flexibility has not been well defined. A quantitative assessment of changes in curve flexibility with age and progression of deformity may yield important insight into the change in surgical management options over time. METHODS: A retrospective review of 75 patients with idiopathic thoracolumbar and

lumbar scoliosis (age range 13-78 years) was undertaken. Preoperative standing and side-bending radiographs of thoracolumbar and lumbar curves were evaluated. Cobb angles of structural and fractional curves, curve flexibility, presence of lateral listhesis, and axial and radicular pain were documented. Predictors of structural and fractional curve flexibility were evaluated with correlation and regression analysis. Correlation analysis was used to demonstrate an association between radiographic findings and the clinical presentation. RESULTS: Seventy-five patients had an average major curve magnitude of 56 degrees (range 34-82 degrees) with flexibility averaging 55% (range 20-93%). Structural curve flexibility was highly inversely correlated with both curve magnitude ($r = -0.7$; $P < 0.001$) and with age ($r = -0.6$; $P < 0.001$). Lumbar fractional curve (L4-S1) flexibility showed a high inverse correlation with age ($r = -0.65$; $P < 0.001$) but did not show correlation with Cobb angle. Thoracic compensatory curves showed a moderate correlation with Cobb angle ($r = 0.53$). Structural and fractional curve flexibility showed high correlation with each other ($r = 0.5-0.66$). Regression analysis yielded a formula to predict the flexibility of the structural curve (FSC): $FSC = 130 - (Cobb + Age/2)$. Axial pain was correlated with age ($r = 0.63$); however, it was not correlated with curve magnitude. CONCLUSION: We have shown that curve magnitude and patient age are the main predictors of structural flexibility. Every 10 degrees increase in curve magnitude over 40 degrees results in a 10% decrease in flexibility; every 10-year increase in age decreases flexibility of the structural curve by 5% and the lumbosacral fractional curve by 10%. Curve magnitude and age of the patients are significant predictors of curve flexibility. The demonstration of this association offers useful information in estimating how surgical options for deformity correction may change over time.

Dirks, J., et al. "Mechanisms of postoperative pain: clinical indications for a contribution of central neuronal sensitization." *Anesthesiology*. 97, no. 6(2002): 1591-6 UI 12459689.

BACKGROUND: The relative importance of different nociceptive mechanisms for the intensity, duration, and character of postoperative pain is not well established. It has been suggested that sensitization of dorsal horn neurones may contribute to pain in the postoperative period. We hypothesized that wound hyperalgesia in postoperative patients and experimentally heat-induced secondary hyperalgesia share a common mechanism, sensitization of central neurones, and consequently, that the short-acting opioid remifentanil would have comparable effects on hyperalgesia in both conditions. METHODS: In a randomized, controlled, double-blind trial, we assessed mechanical hyperalgesia in skin bordering the surgical wound, and an area of experimentally heat-induced secondary hyperalgesia on the thigh, in 12 patients who underwent abdominal hysterectomy within 5 days prior to the investigation. Observations were made before and during a drug challenge with remifentanil, which has been demonstrated to reduce the area of heat-induced secondary hyperalgesia in volunteers. RESULTS: The area of skin with surgically-induced mechanical hyperalgesia, the area of heat-induced secondary hyperalgesia, and pain during cough, were significantly reduced during remifentanil infusion compared with placebo ($P = 0.008$, $P = 0.006$, and $P = 0.002$, respectively). The relative reduction (% of baseline) of the area of skin with surgically-induced hyperalgesia and heat-induced secondary hyperalgesia during infusion of remifentanil was significantly associated ($R^2 = 0.72$, $P = 0.001$). CONCLUSIONS: Although remifentanil is not a highly targeted "antihyperalgesic," these results support the hypothesis that both wound hyperalgesia in postoperative patients and experimentally heat-induced secondary hyperalgesia may share common mechanisms, and that central neuronal sensitization may contribute to some aspects of postoperative pain. Antihyperalgesic drugs should be further developed and evaluated in clinical trials of postoperative pain.

Dodes, J. E. "TENS revisited.[comment]." *Journal of the American Dental Association*. 133, no. 10(2002): 1324; author reply 1324, 1326 UI 12403533.

Donaldson, G. A., M. E. Donaldson-Hugh, and P. D. Chumas. "Cauda equina syndrome following traction for acute sciatica." *British Journal of Neurosurgery*. 16, no. 4(2002): 370-2 UI 12389890.

A case report of a patient who developed cauda equina syndrome following pelvic traction for acute sciatica is presented. A good outcome was obtained with prompt surgical decompression. This case illustrates the potential dangers of traction, which is frequently employed in the management of acute back pain.

Dronfield, M. W. "The RITA 3 trial.[comment]." *Lancet*. 360, no. 9349(2002): 1972-3; author reply 1973-4 UI 12493285.

Duggleby, W. "The language of pain at the end of life." *Pain Management Nursing*. 3, no. 4(2002): 154-60 UI 12454807.

The effective management of pain at the end of life relies on the accurate assessment of pain. Language is the mechanism through which pain is assessed using self-report pain tools. The purpose of this study was to explore how elderly hospice patients describe their pain and to compare their descriptions with three commonly used pain assessment tools (i.e., McGill Pain Questionnaire, Memorial Pain Assessment Card, and the Visual Analogue Scale). Eleven elderly hospice patients with cancer were interviewed in their homes using open-ended unstructured questions. Data were analyzed line by line to identify descriptors of pain. These descriptors were then compared to standardized language used in the three pain assessment tools. In describing their pain, participants used many words, emphasized their pain by repeating those words, and used similes to describe their pain. The participants used approximately 30% of the standardized language found in three commonly used self-report instruments. These findings suggest that in conjunction with self-report instruments, the patient's own verbal descriptions should be used in the assessment of pain. Copyright 2002 by the American Society of Pain Management Nurses

Eray, O., et al. "Intravenous single-dose tramadol versus meperidine for pain relief in renal colic." *European Journal of Anaesthesiology*. 19, no. 5(2002): 368-70 UI 12095018.

BACKGROUND AND OBJECTIVE: Comparison of the effectiveness of tramadol with meperidine given intravenously to emergency patients with suspected renal colic. **METHODS:** A double-blind, randomized clinical trial was performed in the Emergency Department of a tertiary-care university hospital. Consecutive patients with suspected renal colic (n = 47) were randomized to receive intravenously an initial dose of tramadol 50 mg (n = 23) or meperidine 50 mg (n = 24). After 30 min, additional doses of meperidine 50 mg were given intravenously as a rescue medication in an open fashion. Pain relief was assessed using a 10 cm visual analogue scale, the primary outcomes being pain relief at 15 and 30 min after the analgesics. Secondary outcomes were the frequency of rescue meperidine use and the development of side-effects. **RESULTS:** Visual analogue scale pain scores after 15 and 30 min decreased in both tramadol and meperidine groups (P < 0.05). However, pain relief was better in the meperidine group at the 15 and 30 min evaluations (P < 0.05). Only 11 patients (48%), initially receiving meperidine, needed more meperidine compared with 16 patients (67%) initially receiving tramadol. Both drugs were well tolerated with no adverse effects occurring in either group. **CONCLUSIONS:** Meperidine 50 mg was superior to tramadol 50 mg for acute pain relief in patients with suspected renal colic when given intravenously. Because many patients in both groups received supplemental meperidine and the response to

tramadol alone cannot be predicted, clinicians may want to choose higher doses of meperidine alone or other alternative combinations.

Evans, R., et al. "Two-year follow-up of a randomized clinical trial of spinal manipulation and two types of exercise for patients with chronic neck pain." *Spine. Online.* 27, no. 21(2002): 2383-9 UI 12438988.

STUDY DESIGN: Randomized clinical trial. OBJECTIVES: To compare the effects of spinal manipulation combined with low-tech rehabilitative exercise, MedX rehabilitative exercise, or spinal manipulation alone in patient self-reported outcomes over a two-year follow-up period. SUMMARY OF BACKGROUND DATA: There have been few randomized clinical trials of spinal manipulation and rehabilitative exercise for patients with neck pain, and most have only reported short-term outcomes. METHODS: One hundred ninety-one patients with chronic neck pain were randomized to 11 weeks of one of the three treatments. Patient self-report questionnaires measuring pain, disability, general health status, improvement, satisfaction, and OTC medication use were collected after 5 and 11 weeks of treatment and 3, 6, 12, and 24 months after treatment. Data were analyzed taking into account all time points using repeated measures analyses. RESULTS: Ninety-three percent (178) of randomized patients completed the 11-week intervention phase, and 76% (145) provided data at all evaluation time points over the two-year follow-up period. A difference in patient-rated pain with no group-time interaction was observed in favor of the two exercise groups [$F(2,141) = 3.2$; $P = 0.04$]. There was also a group difference in satisfaction with care [$F(2,143) = 7.7$; $P = 0.001$], with spinal manipulation combined with low-tech rehabilitative exercise superior to MedX rehabilitative exercise ($P = 0.02$) and spinal manipulation alone ($P < 0.001$). No significant group differences were found for neck disability, general health status, improvement, and OTC medication use, although the trend over time was in favor of the two exercise groups. CONCLUSION: The results of this study demonstrate an advantage of spinal manipulation combined with low-tech rehabilitative exercise and MedX rehabilitative exercise versus spinal manipulation alone over two years and are similar in magnitude to those observed after one-year follow-up. These results suggest that treatments including supervised rehabilitative exercise should be considered for chronic neck pain sufferers. Further studies are needed to examine the cost effectiveness of these therapies and how spinal manipulation compares to no treatment or minimal intervention.

Farella, M., et al. "Myofascial pain syndrome misdiagnosed as odontogenic pain: a case report." *Cranio.* 20, no. 4(2002): 307-11 UI 12403190.

The aim of this report is to illustrate the case of a patient whose myofascial pain syndrome was misdiagnosed as odontogenic pain, and who was treated using irreversible dental procedures. Even if dental pain commonly has an odontogenic etiology, it is also possible that pain arising from different orofacial sites such as jaw muscles, maxillary sinus, or nervous structures can be referred to the teeth. When the etiology of a dental pain condition cannot be clearly identified, it is necessary to consider all possible causes of dental pain, which may also be nonodontogenic. The need for comprehensive examination and careful diagnosis before irreversible dental treatment is emphasized.

Fesmire, F. M., et al. "The Erlanger chest pain evaluation protocol: a one-year experience with serial 12-lead ECG monitoring, two-hour delta serum marker measurements, and selective nuclear stress testing to identify and exclude acute coronary syndromes.[comment]." *Annals of Emergency Medicine.* 40, no. 6(2002): 584-94 UI 12447334.

STUDY OBJECTIVE: We determine the overall use of a 6-step accelerated chest pain protocol to identify and exclude acute coronary syndrome (ACS) and to confirm

previous findings of the use of serial 12-lead ECG monitoring (SECG) in conjunction with 2-hour delta serum marker measurements to identify and exclude acute myocardial infarction (AMI). METHODS: A prospective observational study was conducted over a 1-year period from January 1, 1999, through December 31, 1999, in 2,074 consecutive patients with chest pain who underwent our accelerated evaluation protocol, which includes 2-hour delta serum marker determinations in conjunction with automated SECG for the early identification and exclusion of AMI and selective nuclear stress testing for identification and exclusion of ACS. In patients not undergoing emergency reperfusion therapy, physician judgment was used to determine patient disposition at the completion of the 2-hour evaluation period: admit for ACS, discharge or admit for non-ACS condition, or immediate emergency department nuclear stress scan for possible ACS. A positive protocol was defined as a positive result in 1 or more of the 6 incremental steps in our chest pain evaluation protocol: (1) initial ECG diagnostic of acute injury or reciprocal injury; (2) baseline creatine kinase (CK)-MB level of 10 ng/mL or greater and index of 5% or greater or cardiac troponin I level of 2 ng/mL or greater; (3) new/evolving injury or new/evolving ischemia on SECG; (4) increase in CK-MB level of +1.5 ng/mL or greater or cardiac troponin I level of +0.2 ng/mL or greater in 2 hours; (5) clinical diagnosis of ACS despite a negative 2-hour evaluation; and (6) reversible perfusion defect on stress scan compared with on resting scan. All patients were followed up for 30-day ACS, which was defined as myocardial infarction (MI), percutaneous coronary intervention/coronary artery bypass grafting, coronary arteriography revealing stenosis of major coronary artery of 70% or greater not amenable to percutaneous coronary intervention/coronary artery bypass grafting, life-threatening complication, or cardiac death within 30 days of ED presentation. RESULTS: Discharge diagnosis in the 2,074 study patients consisted of 179 (8.6%) patients with AMI, 26 (1.3%) patients with recent AMI (decreasing curve of CK-MB), and 327 (15.8%) patients with 30-day ACS. At 2 hours, sensitivity and specificity for MI (AMI or recent AMI) of SECG plus delta serum marker measurements was 93.2% and 93.9%, respectively (positive likelihood ratio 15.3; negative likelihood ratio 0.07). At the completion of the full ED evaluation protocol (positive result in ≥ 1 of the 6 incremental steps), sensitivity and specificity for 30-day ACS was 99.1% and 87.4%, respectively (positive likelihood ratio 7.9; negative likelihood ratio 0.01). CONCLUSION: An accelerated chest pain evaluation strategy consisting of SECG, 2-hour delta serum marker measurements, and selective nuclear stress testing in conjunction with physician judgment identifies and excludes MI and 30-day ACS during the initial evaluation of patients with chest pain.

Gibbons, R. J., et al. "ACC/AHA 2002 guideline update for the management of patients with chronic stable angina--summary article: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee on the Management of Patients With Chronic Stable Angina)." *Circulation*. 107, no. 1(2003): 149-58 UI 12515758.

Glaser, R., et al. "Benefit of an early invasive management strategy in women with acute coronary syndromes.[comment]." *Jama*. 288, no. 24(2002): 3124-9 UI 12495392.

CONTEXT: Women who present with acute coronary syndromes (ACSs) have different characteristics than men. Reports have conflicted about whether different outcomes exist for women with use of a routine invasive management strategy. However, these studies were performed prior to the widespread use of platelet glycoprotein IIb/IIIa inhibitors and intracoronary stents. OBJECTIVE: To determine sex differences in baseline characteristics and outcomes in ACS and whether women benefit from a contemporary early invasive management strategy. DESIGN AND SETTING: Prospective analysis of women and men enrolled in the TACTICS-TIMI 18

randomized trial, conducted December 1997 to December 1999 in 169 centers in 9 countries in North America and Europe, with follow-up at 1 and 6 months. PARTICIPANTS: A total of 2220 patients (757 women and 1463 men) with ACS. INTERVENTIONS: All patients received aspirin, 325 mg/d; intravenous unfractionated heparin; and tirofiban for 48 hours or until revascularization, with tirofiban administered for at least 12 hours after percutaneous coronary revascularization. Patients assigned to the early invasive strategy (n = 1114) underwent coronary angiography 4 to 48 hours after randomization and revascularization when appropriate. Patients assigned to the early conservative strategy (n = 1106) were treated medically and underwent coronary angiography and appropriate revascularization only if they met specified criteria. MAIN OUTCOME MEASURES: Baseline characteristics and the primary composite end point of death, myocardial infarction, or rehospitalization for ACS at 6 months in women and men assigned to early invasive vs conservative management. RESULTS: Women were older and more frequently had hypertension (P<.001 for both). Women less frequently had previous myocardial infarction, coronary artery bypass grafting, and elevations in cardiac markers (P<.001 for all), but there was no difference in distribution of TIMI risk scores (P =.76). Angiography and intervention rates were similar, but women had less severe coronary artery disease, including no critical lesions in 17% of women vs 9% of men (P<.001). Women had a 28% odds reduction in the primary end point with an early invasive strategy (adjusted odds ratio [OR], 0.72; 95% confidence interval [CI], 0.47-1.11), similar to the benefit in men (adjusted OR, 0.64; 95% CI, 0.47-0.88; P =.60 for sex interaction). When adjusted for baseline characteristics, the benefit of invasive therapy in women with elevated troponin T levels was further enhanced (adjusted OR, 0.47; 95% CI, 0.26-0.83). CONCLUSIONS: Despite differences between women and men in baseline characteristics, the benefit of an early invasive strategy incorporating tirofiban and intracoronary stents was similar in women and men and was enhanced in women presenting with markers of increased risk.

Gordon, D. B., et al. "A 10-year review of quality improvement monitoring in pain management: recommendations for standardized outcome measures." *Pain Management Nursing*. 3, no. 4(2002): 116-30 UI 12454804.

Quality measurement in health care is complex and in a constant state of evolution. Different approaches are necessary depending on the purpose of the measurement (e.g., accountability, research, improvement). Recent changes in health care accreditation standards are driving increased attention to measurement of the quality of pain management for improvement purposes. The purpose of this article is to determine what indicators are being used for pain quality improvement, compare results across studies, and provide specific recommendations to simplify and standardize future measurement of quality for hospital-based pain management initiatives. Pain management quality improvement monitoring experience and data from 1992 to 2001 were analyzed from 20 studies performed at eight large hospitals in the United States. Hospitals included: the University of Wisconsin Hospital and Clinics, Madison; Texas Medical Center, Houston; McAllen Medical Center, McAllen, TX; San Francisco General Hospital, San Francisco; Rush-Presbyterian-St. Luke's Medical Center and Northwestern Memorial Hospital, Chicago, IL; Memorial Sloan Kettering Cancer Center, New York; and Kaiser Sunnyside Medical Center of Kaiser Permanente Northwest, Clackamas, OR. Analyses of data led to consensus on six quality indicators for hospital-based pain management. These indicators include: the intensity of pain is documented with a numeric or descriptive rating scale; pain intensity is documented at frequent intervals; pain is treated by a route other than intramuscular; pain is treated with regularly administered analgesics, and when possible, a multimodal approach is used; pain is prevented and controlled to a degree that facilitates function and quality of life; and patients are adequately

informed and knowledgeable about pain management. Although there are no perfect measures of quality, longitudinal data support the validity of a core set of indicators that could be used to obtain benchmark data for quality improvement in pain management in the hospital setting. Copyright 2002 by the American Society of Pain Management Nurses [References: 57]

Harmer, M. "Consent and ethics in postoperative pain management." *Anaesthesia*. 57, no. 12(2002): 1153-4 UI 12437703.

Hernandez, L., et al. "Evaluation of different scales for measurement of perceived physical strain during performance of manual tasks." *International Journal of Occupational Safety & Ergonomics*. 8, no. 4(2002): 413-32 UI 12427348.

The main objective of this study was to evaluate different scales of perceived strain during the performance of various physical tasks. A total of 52 male and female participants took part in 4 experiments to achieve the study objective. The results suggest that a bipolar comfort-discomfort scale is a more appropriate instrument than a discomfort scale for assessing cumulative physical stresses at work, especially at the beginning of the shift. For assessing discomfort at the end of the work shift, a unipolar scale may also be used. On the basis of the obtained results, red, green, and yellow zones are suggested to establish priorities for work redesign efforts in ergonomic control programs.

Herr, K. "Pain assessment in cognitively impaired older adults." *AJN, American Journal of Nursing*. 102, no. 12(2002): 65-7 UI 12473932.

Hollinworth, H. "How to alleviate pain at wound dressing changes." *Nursing Times*. 98, no. 44(2002): 51-2 UI 12451750.

Horlocker, T. T., et al. "Risk assessment of hemorrhagic complications associated with nonsteroidal antiinflammatory medications in ambulatory pain clinic patients undergoing epidural steroid injection." *Anesthesia & Analgesia*. 95, no. 6(2002): 1691-7, table of contents UI 12456441.

We prospectively studied 1035 individuals undergoing 1214 epidural steroid injections to determine the risk of hemorrhagic complications. A history of bruising or bleeding was present in 176 (15%) patients. A platelet count was assessed in 77 patients before the epidural steroid injection; none was less than $100 \times 10^9/L$. Nonsteroidal antiinflammatory drugs (NSAIDs) were reported by 383 (32%) patients, including 34 patients on multiple medications. Aspirin was the most common NSAID and was noted by 158 patients, including 104 patients on 325 mg or less per day. There were no spinal hematomas (major hemorrhagic complications). Blood was noted during needle or catheter placement in 63 (5.2%) patients (minor hemorrhagic complications). NSAIDs did not increase the frequency of minor hemorrhagic complications. However, increased age, needle gauge, needle approach, needle insertion at multiple interspaces, number of needle passes, volume of injectant, and accidental dural puncture were all significant risk factors for minor hemorrhagic complications. There were 42 patients with new neurologic symptoms or worsening of preexisting complaints that persisted more than 24 h after injection; median duration of the symptoms was 3 days (range, 1-20 days). Our results confirm those of previous studies performed in obstetric and surgical populations that document the safety of neuraxial techniques in patients receiving NSAIDs. We conclude that epidural steroid injection is safe in patients receiving aspirin-like antiplatelet medications. Minor worsening of neurologic function may occur after epidural steroid injection and must be differentiated from etiologies requiring intervention.

IMPLICATIONS: Previous studies performed in obstetric and surgical populations have demonstrated that antiplatelet therapy does not increase the risk of spinal

hematoma associated with spinal or epidural anesthesia and analgesia. We confirm the safety of epidural steroid injection in patients receiving aspirin-like medications.

Hubley-Kozey, C. L., and M. J. Vezina. "Differentiating temporal electromyographic waveforms between those with chronic low back pain and healthy controls." *Clinical Biomechanics*. 17, no. 9-10(2002): 621-9 UI 12446158.

OBJECTIVES: Temporal activation patterns from abdominal and lumbar muscles were compared between healthy control subjects and those with chronic low back pain. **STUDY DESIGN:** A cross-sectional comparative study. **BACKGROUND:** Synergist and antagonist coactivity has been considered an important neuromuscular control strategy to maintain spinal stability. Differences in onset times and amplitudes have been reported from trunk muscle EMG recordings between healthy subjects and those with low back pain; however, evaluating temporal EMG waveforms should demonstrate whether differences exist in the ability of those with and those without low back pain to respond to changing perturbations. **METHODS:** The Karhunen-Loeve expansion was applied to the ensemble-average EMG profiles recorded from four abdominal and three trunk extensor muscle sites while subjects performed a leg-lifting task aimed at challenging lumbar spine stability. The principal patterns were derived and the weighting coefficients for each pattern were the main dependent variables in a series of two-factor (group and muscle) mixed ANOVA models. **RESULTS:** Three principal patterns explained 96% of the variance in the temporal EMG profiles. The ANOVAs revealed statistically significant group and muscle main effects ($P < 0.05$) for the principal pattern and significant group by muscle interactions ($P < 0.05$) for patterns two and three. Post hoc analysis showed that patterns were not different among all muscle sites for the healthy controls, but differences were significant for the low back pain group. **CONCLUSIONS:** The healthy group coactivated all seven sites with the same temporal pattern of activation. The low back pain group used different activation patterns indicative of a lack of synergistic coactivation among the muscle sites examined. **RELEVANCE:** These results provide a foundation for developing a diagnostic classifier of neuromuscular impairment associated with low back pain, that could be used to evaluate the effectiveness of therapeutic interventions to improve muscle coactivation.

Hunt, D. G., et al. "Are components of a comprehensive medical assessment predictive of work disability after an episode of occupational low back trouble?" *Spine. Online*. 27, no. 23(2002): 2715-9 UI 12461398.

STUDY DESIGN: One hundred fifty-nine subacute low back work-injured patients completed a full medical assessment at baseline. A full repeat examination was performed 3 months later, when return-to-work status was determined. **OBJECTIVE:** To determine the prognostic value of a comprehensive medical assessment for the prediction of return-to-work status. **SUMMARY OF BACKGROUND DATA:** A systematic review of the work disability prediction literature of low back trouble prognosis revealed that no high-quality studies included a full medical history and physical examination in the design. The results of studies included in the systematic review were equivocal with respect to predictive usefulness of medical variables. **METHODS:** Participants completed medical history questionnaires and then were clinically examined by one of six experienced examiners (three physicians and three physiotherapists). Return-to-work status was measured 3 months later, and predictive validity was evaluated using logistic regression modeling. **RESULTS:** Medical variables (, medical history subscales, physical examination subscales, and lumbar range-of-motion tests) showed modest correct classification rates varying between 61.6% and 69.1% for participants. **CONCLUSIONS:** Comprehensive medical assessments play a crucial role in the early identification of serious pathology after low back trouble. We were unable to identify, however, any medical evaluation variables that would account for significant proportions of variance in return to work.

The weight of evidence obtained in this study suggests that injured workers' subjective interpretations and appraisals may be more powerful predictors of the course of postinjury recovery than exclusively medical assessments.

Iwamoto, J., T. Takeda, and S. Ichimura. "Transient relief of metastatic cancer bone pain by oral administration of etidronate." *Journal of Bone & Mineral Metabolism*. 20, no. 4(2002): 228-34 UI 12115069.

The aims of the present study were to determine whether patients with painful bone metastases from primary cancer sites showed a higher level of a bone resorption marker than those with no evidence of skeletal-related events, and to clarify the efficacy of oral administration of etidronate for pain due to bone metastases and bone resorption. Thirty outpatients with cancer were recruited: 10 with pain due to bone metastasis from the primary cancer site; lung (4), prostate (3), and breast (3) (M group), and 20 with primary cancer of the stomach (11), colon (4), breast (3), lung (1), and bladder (1) with no such evidence of skeletal-related events (non-M group). None of the patients in the M group either needed morphine for pain relief or had hypercalcemia, although all of them had been taking nonsteroidal anti-inflammatory drugs (NSAIDs). During the study, they continued taking NSAIDs, as they had before the study. The level of urinary cross-linked N-telopeptides of type I collagen (NTx) at baseline was significantly higher in the M group than in the non-M group ($P < 0.01$). Oral administration of etidronate (400 mg/day for 2 weeks) to patients in the M group significantly reduced bone pain 2 and 12 weeks after the start of treatment; however, the pain relief effect was diminished 12 weeks after the start of treatment, despite a significant decrease in urinary NTx level ($P < 0.05$ by one-way analysis of variance [ANOVA] with repeated measurements). The present study provides evidence suggesting that patients with painful bone metastases from primary cancer sites may have a higher level of urinary NTx than those with no evidence of skeletal-related events, and that oral administration of etidronate at the dose we used may have the potential to transiently relieve their bone pain by decreasing abnormally raised bone resorption. Although the present study had a small sample size, and had no placebo controls, the results may be useful, especially as they raise additional questions that could stimulate further research in Japan.

Kampe, S., et al. "Current practice in postoperative epidural analgesia: a German survey." *Anesthesia & Analgesia*. 95, no. 6(2002): 1767-9, table of contents UI 12456455.

We surveyed current German practice in postoperative epidural analgesia (EA). Of 300 questionnaires sent anonymously, 147 (49%) were returned fully completed. A 24-h acute pain service (APS) was offered in 41% of German hospitals. Seventy percent of the large teaching hospitals (>1000 beds) offered an APS, whereas just 9% of the hospitals of <500 beds provided an APS. Small-size hospitals (<200 beds) preferred ropivacaine as the local anesthetic (LA) in contrast to large teaching hospitals using more bupivacaine than ropivacaine. In the general ward setting, 36% of the respondents used plain LA, and 64% combined the LA with an opioid. If ropivacaine was used, 0.2% was the most popular concentration (78%), combined with morphine (17%), fentanyl (14%), or sufentanil (75%). If bupivacaine was used, 0.25% was the preferred concentration (30%), combined with morphine (40%), fentanyl (8%), or sufentanil (60%). On wards, 58% of German anesthetic departments used continuous epidural infusion, 57% bolus doses, and 20% patient-controlled EA mode. We conclude that the availability of a 24-h APS (41%) in German hospitals corresponds favorably to international data. EA with the combination of LAs and opioids was the most common modality in the ward setting. IMPLICATIONS: We surveyed current German practice in postoperative epidural analgesia. We found that the availability of a 24-h acute pain service (41%) in

German hospitals corresponds favorably to international practice. Epidural analgesia with the combination of local anesthetics and opioids was the most common modality in the ward setting.

Keefe, F. J., and S. Smith. "The assessment of pain behavior: implications for applied psychophysiology and future research directions." *Applied Psychophysiology & Biofeedback*. 27, no. 2(2002): 117-27 UI 12206046.

Persons who have pain engage in behaviors such as resting in bed, taking medication, moving in a guarded fashion, or grimacing that communicate the fact that pain is being experienced. Pain-related behaviors increasingly are viewed as an important target in pain assessment. Traditionally, pain behavior has been assessed through interview or self-recording methods (e.g. diary records). Pain behaviors, however, are overt and can be recorded through direct observation. Over the past 20 years, observation methods have been developed to assess pain behavior in patients having persistent pain conditions. Although these methods are not widely used in applied psychophysiological settings, they potentially could be quite useful. The purpose of this paper is to review the literature on such observation methods. The paper is divided into five parts. The first part provides a description of the basic elements of pain behavior observation protocols. The second part presents information on the psychometric properties of the most commonly used protocols. The third part highlights applications of pain behavior observation protocols. The fourth part briefly describes the strengths and limitations of pain behavior observation. The paper concludes with a discussion of the implications of pain behavior observation for applied psychophysiology and future directions for research and practice in this area. [References: 42]

Kelley-England, J. D. "Did I help Bobby kill himself?" *Medical Economics*. 79, no. 17(2002): 79-80 UI 12298133.

Kemper, J. A. "Pain management of older adults after discharge from outpatient surgery." *Pain Management Nursing*. 3, no. 4(2002): 141-53 UI 12454806.

Older adults manage their pain at home after outpatient surgery. Yet the experience and management of postoperative pain outside the hospital is largely unknown. The purpose of this study was to examine older adults' experiences of postoperative pain and their methods of pain management after discharge from outpatient surgery. A telephone-based interview of 93 older adults (ages 60-84) showed that pain intensity reached a level of 5 (0 to 10 scale) for 66% of participants on the first morning and for 42% on the third evening after discharge. Pain interfered with activities for almost one-fourth of the participants. Reasons for high pain intensity scores included improper and inadequate dosage of pain medication. More than half of the participants chose to take only one pain tablet at a time and 66% waited until their pain intensity reached a rating of 5 or above before taking their analgesic medication. The participants who took pain medications at higher levels of pain intensity reported taking larger amounts of medication but receiving less pain relief. This finding substantiates the idea that it takes a larger dose of pain medication to decrease severe pain. Pain management instructions did not make a difference in the way pain was managed. Overall, findings indicate that older postoperative patients are not adequately medicating themselves for pain after discharge. Furthermore, when participants were asked, "From this list of nonpharmacologic activities, which activities helped relieve pain?" the most frequently selected answer was "to stay still or not move." This finding requires further investigation to determine if older adults are using immobility as a way to control their pain. Copyright 2002 by the American Society of Pain Management Nurses

Keogh, C., et al. "Musculoskeletal case 25. Morton's neuroma." *Canadian Journal of Surgery*. 45, no. 6(2002): 448, 467-8 UI 12500922.

Kong, S. K., et al. "Use of intrathecal morphine for postoperative pain relief after elective laparoscopic colorectal surgery." *Anaesthesia*. 57, no. 12(2002): 1168-73 UI 12437707.

Laparoscopic surgery has become popular in recent years, but few studies have addressed analgesia for this type of surgery. We conducted a prospective double-blind randomised trial on 36 cases of laparoscopic colorectal surgery to determine the influence of intrathecal morphine on postoperative pain relief. All patients received a subarachnoid block with local anaesthetic in addition to general anaesthesia. One group also received intrathecal morphine. A patient-controlled analgesic (PCA) device was prescribed for pain control postoperatively and the visual analogue score (VAS) was used for pain assessment. The group who received intrathecal morphine used significantly less morphine. There were no adverse cardiovascular effects of the combined anaesthetic technique. Nausea and vomiting remained the main side-effect of intrathecal morphine but this was easily treated with anti-emetics.

Kratz, A., et al. "Positive predictive value of a point-of-care testing strategy on first-draw specimens for the emergency department-based detection of acute coronary syndromes." *Archives of Pathology & Laboratory Medicine*. 126, no. 12(2002): 1487-93 UI 12456209.

CONTEXT: The rapid and accurate diagnosis of the etiology of chest pain is of central importance in the triage of patients presenting to emergency departments. The "first-draw" sensitivity of serum cardiac markers is known to be low on initial presentation; however, less is understood regarding the predictive value of a positive test in this situation. OBJECTIVE: To determine the ability of a critical pathway combining medical history and physical examination, electrocardiographic findings, point-of-care testing, and central laboratory data to accurately predict the presence of acute coronary ischemia. METHODS: We investigated the positive predictive value of a testing algorithm for first-draw specimens in clinical practice, combining a qualitative, point-of-care, triple-screen testing panel for cardiac markers, including myoglobin, creatine kinase-MB, and cardiac troponin I, with confirmation of the rapid assay in the central hospital laboratory by quantitative assays for creatine kinase-MB and cardiac troponin T. RESULTS: While a positive result on any of the individual cardiac markers of the point-of-care test had a positive predictive value for the acute coronary syndrome of only 36% (creatin kinase-MB, 41%; myoglobin, 36%; and troponin I, 65%), the positive predictive value for the diagnosis of acute coronary syndrome increased to 76% if all 3 point-of-care markers were simultaneously positive. The positive predictive value for acute coronary syndrome for a positive confirmatory result in the hospital laboratory for either creatine kinase-MB or cardiac troponin T was 61%. Among those patients with a positive marker on both the point-of-care test and the laboratory test, a careful retrospective review of the clinical history (with exclusion of patients with nonischemic cardiac pathologies and renal insufficiency) increased the positive predictive value of this algorithm to 98%. CONCLUSIONS: Our data suggest that qualitative, point-of-care, triple-screen cardiac marker testing of patients with chest pain at initial presentation may exhibit relatively low positive predictive values. Positive predictive value can be significantly improved by rapid confirmation in the hospital laboratory and careful review of clinical findings.

Kuiper, J. I., et al. "Physical workload of student nurses and serum markers of collagen metabolism." *Scandinavian Journal of Work, Environment & Health*. 28, no. 3(2002): 168-75 UI 12109556.

OBJECTIVES: This study explored the association between biomarkers of type I collagen metabolism and exposure to physical workload. **METHODS:** In a prospective cohort study, serum concentrations of markers of type I collagen synthesis and degradation were assessed monthly for student nurses who worked as nurses for a period of 6 months and compared with those of a reference group. The number of patient-handling activities was estimated from observations at the workplace. Linear generalized estimating equations were used to analyze differences in the serum concentrations of the biomarkers between the exposed group and reference group, as well as to analyze whether the number of patient-handling activities was associated with serum concentrations of the biomarkers. **RESULTS:** Serum concentrations of the biomarkers were found to differ between the groups. The biomarkers reflected a higher anabolism of type I collagen in the exposed group when compared with that of the reference group. An analysis of the effect of the number of patient-handling activities revealed that a higher exposure was associated with higher effective type I collagen synthesis within the exposed group. **CONCLUSIONS:** These results indicate that serum concentrations of these biomarkers of type I collagen metabolism can reflect differences in exposure between contrasting groups, and also varying levels of exposure between persons within an occupation.

Kumar, A. M., and X. L. Wen. "Acupuncture treatment for osteoarthritic pain and inflammation of the knee." *Alternative Therapies in Health & Medicine*. 8, no. 6(2002): 128, 126 UI 12440848.

Kumar, B., K. G. Sriram, and C. George. "Osteophyte at the sacroiliac joint as a cause of sciatica: a report of four cases." *Journal of Orthopaedic Surgery*. 10, no. 1(2002): 73-6 UI 12401925.

Four cases of sciatica due to osteophytes impinging on the sciatic nerve at the sacroiliac joint are reported. Of these 4 cases, 2 were treated conservatively and the other 2 required surgical excision of the osteophyte. The report highlights the importance of keeping this uncommon etiology in the differential diagnosis of sciatica.

Lake, A. P., and M. E. Phipps. "Multimodal analgesia and intravenous nutrition after surgery.[comment]." *Regional Anesthesia & Pain Medicine*. 27, no. 5(2002): 535; author reply 535-6 UI 12373711.

Lampl, C., K. Yazdi, and C. Roper. "Amitriptyline in the prophylaxis of central poststroke pain. Preliminary results of 39 patients in a placebo-controlled, long-term study." *Stroke*. 33, no. 12(2002): 3030-2 UI 12468808.

BACKGROUND AND PURPOSE: We performed a double-blind, placebo-controlled study to investigate the effectiveness of amitriptyline for the prophylactic treatment of patients with acute thalamic stroke in preventing central poststroke pain. **METHODS:** Subject received, in a randomized sequence, either amitriptyline titrated from 10 to 75 mg in extended-release form or placebo over a therapy period of 365 days. We documented the time when pain developed; the intensity, type, site, and distribution of pain; and the presence/absence and type of allodynia. **RESULTS:** Thirty-nine patients (23 women and 16 men; age range, 36 to 68 years) with central poststroke pain participated. The placebo group showed a pain rate of 21% within 1 year after the diagnosis of thalamic stroke compared with 17% in the group under prophylactic treatment with amitriptyline. Average (SE) time to pain was 318 (23) days for patients in the placebo group and 324 (24) days for patients in the amitriptyline group. **CONCLUSIONS:** With the achieved sample sizes of this study and a pain rate of approximately 21% in the placebo group, any near-perfect pain protection would have been detected. Near-perfect pain protection, in this context,

refers to pain in <2.4% of the recruited patients treated with amitriptyline or in approximately 89% of placebo-treated patients. Larger studies are recommended to test the hypothesis that prophylactic amitriptyline reduces but does not completely prevent central poststroke pain.

Langdon, D. E. "Abdominal wall pain will be missed until examinations change! [comment]." *American Journal of Gastroenterology*. 97, no. 12(2002): 3207-8 UI 12492218.

Lanzkron, S., et al. "Polymerized human Hb use in acute chest syndrome: a case report." *Transfusion*. 42, no. 11(2002): 1422-7 UI 12421214.

BACKGROUND: Acute chest syndrome (ACS) is a complication of sickle cell disease that can cause significant morbidity. Transfusion therapy has been shown to significantly increase oxygenation in patients with ACS and RBC exchange is considered the standard of care in patients at high risk of respiratory failure. CASE REPORT: A patient with ACS and several high-risk features, including thrombocytopenia, profound anemia, bilateral pulmonary infiltrates, staphylococcal sepsis, and pulmonary embolism is presented. The patient refused transfusion on religious grounds and received 12 units of human polymerized Hb solution (poly SFH-P injection, PolyHeme, Northfield Laboratories) over the course of 13 days. The patient's respiratory status improved and she was discharged home without receiving RBC transfusions. CONCLUSION: This is the first reported case that describes the use of PolyHeme in a patient with sickle cell disease, ACS, and sepsis. This therapy is thought to have been lifesaving for this patient.

Larroy, C. "Comparing visual-analog and numeric scales for assessing menstrual pain." *Behavioral Medicine*. 27, no. 4(2002): 179-81 UI 12165972.

Measurements from visual-analog (VAS) and numeric scales were used to assess menstrual pain in a prevalence study of 1,387 women in Madrid, Spain. The data obtained from these 2 scales were compared to determine if significant differences existed between the 2 rating methods. Findings indicated that both scales are useful for assessing menstrual pain. A high degree of correlation was found between the 2 scales; larger rating differences were seen in only a small percentage of the sample. The numeric scale is easier and more convenient to use than the VAS and is recommended in epidemiologic and prevalence studies such as this one.

Larsen, I. K., et al. "Continuous evaluation of patient satisfaction in endoscopy centres." *Scandinavian Journal of Gastroenterology*. 37, no. 7(2002): 850-5 UI 12190102.

BACKGROUND: A randomized sample of 14,000 men and women, aged 55-64 years, resident in the City of Oslo and Telemark County, were drawn from the population registry to be offered a flexible sigmoidoscopy (FS) screening examination. A questionnaire was designed to modify routines and evaluate patient satisfaction. METHODS: Consecutive participants (4956) were given a questionnaire immediately after the FS to be filled in and returned by mail on the following day. Participants were asked questions about service, practical issues, and the level of pain during the FS and post-examination discomfort. They were also encouraged to give their comments in free text. RESULTS: Questionnaire replies were received from 4574 (92%) out of 4956 participants. The vast majority reported to have experienced no (70%) or slight (21%) pain during the examination. Women reported pain and post-examination discomfort more often than men. Pain was also associated with age of the patient and length of bowel examined, but not with total examination time. The proportion of painless examinations varied between endoscopists from 62% to 81%. For all endoscopists collectively, this improved during the study period, irrespective of past experience, but trainees seemed to

adopt the score of their masters. CONCLUSIONS: The study demonstrated that the use of feedback information in an endoscopy screening unit may be useful in improving standards, including the performance of endoscopists. It is possible that the introduction of similar feedback systems in routine endoscopy laboratories may in the long run improve the reputation of gastrointestinal endoscopy.

Le Goff, P., and P. Bourgeois. "Should we accept to stop using chymopapain nucleolysis?" *Joint, Bone, Spine: Revue du Rhumatisme*. 69, no. 3(2002): 241-3 UI 12102267.

Li, W., W. Liu, and H. Jiang. "Point injection for treating nephritic colic." *Journal of Traditional Chinese Medicine*. 22, no. 2(2002): 114 UI 12125482.

Lifford, K. L., and R. L. Barbieri. "Diagnosis and management of chronic pelvic pain." *Urologic Clinics of North America*. 29, no. 3(2002): 637-47 UI 12476527.

Chronic pelvic pain is difficult to diagnose and to treat [81] because of the multiple and often overlapping causes [82]. A systematic approach aids in the thorough evaluation and appropriate therapy. At the initial visit(s), a thorough history should be taken and complete physical examination performed. Screening for co-existing conditions, such as depression, narcotic dependency, and physical, sexual, or emotional abuse is crucial so these issues may be addressed immediately while additional causes for pelvic pain are evaluated. The relative likelihood of gastrointestinal, urologic, musculoskeletal, or gynecologic etiology must be considered to guide a more thorough initial evaluation. With gynecologic chronic pelvic pain, differentiation between hormonally responsive and nonresponsive conditions is helpful for diagnosis and treatment. Therapy can then be instituted or an appropriate referral made. [References: 82]

Loder, E., et al. "Rehabilitation hospital staff knowledge and attitudes regarding pain." *American Journal of Physical Medicine & Rehabilitation*. 82, no. 1(2003): 65-8 UI 12510187.

No published studies exist that document pain-related knowledge, attitudes, or educational needs of clinical staff in a rehabilitation hospital; the purpose of this study was to obtain such information to aid in the development of an institutional pain care improvement project. A survey regarding knowledge and attitudes about pain and perceived areas of educational need was administered to all staff with inpatient care responsibilities. Results show that rehabilitation hospital staff hold generally progressive attitudes toward the treatment of pain but with a substantial degree of ambivalence about the use of opioids in the treatment of pain. Staff rate their own lack of education about pain management as one of the chief barriers to effective pain management, and a large percentage report feeling uncomfortable with various technical aspects of pain care. We discuss the implications of this survey for understanding and improving pain care in rehabilitation settings.

Louis, M., and S. D. Kowalski. "Use of aromatherapy with hospice patients to decrease pain, anxiety, and depression and to promote an increased sense of well-being." *American Journal of Hospice & Palliative Care*. 19, no. 6(2002): 381-6 UI 12442972.

This study measured the responses of 17 cancer hospice patients to humidified essential lavender oil aromatherapy. Vital signs as well as levels of pain, anxiety, depression, and sense of well-being were measured (using 11-point verbal analogs). Each subject was measured on three different days before and after a 60-minute session consisting of (1) no treatment (control); (2) water humidification (control); or (3) 3-percent lavender aromatherapy. Results reflected a positive, yet small, change in blood pressure and pulse, pain, anxiety, depression, and sense of well-

being after both the humidified water treatment and the lavender treatment. Following the control session (no treatment), there was also slight improvement in vital signs, depression, and sense of well-being, but not in pain or anxiety levels.

Lund, T., et al. "Is there a connection between the clinical response after an external fixation test or a subsequent lumbar fusion and the pre-test intervertebral kinematics?" *Spine. Online.* 27, no. 23(2002): 2726-33 UI 12461400.

STUDY DESIGN: Evaluation of a possible correlation of clinical symptoms of chronic low back pain (LBP) patients before and after application of external spinal fixation (ESF) with three-dimensional motion patterns. OBJECTIVE: To determine whether the intervertebral kinematics in chronic LBP patients correlate with pain relief after stabilization of the suspected painful segments. SUMMARY OF BACKGROUND DATA: Chronic LBP is a complex clinical entity with mechanical, biochemical, and psychosocial components. Although clinically controversial, ESF has been shown to reduce intervertebral motion, and thus, it provides a mechanism to investigate the mechanical aspect of LBP. METHODS: Thirty-four chronic LBP patients were tested with ESF of the suspected painful segments. The subjective pain relief experienced by the patients during the test and 2 years after spinal fusion surgery was determined, along with the Oswestry Disability Index. Before removal of ESF, the three-dimensional intervertebral kinematics of the painful segments (specifically range of motion, coupling patterns, and motion asymmetries) were analyzed with a precision optoelectronic camera system during active trunk motions. A series of linear correlations were performed between the clinical measures and the motion parameters. RESULTS: The subjective pain relief during the ESF test was nominally, but not significantly, associated with lateral bending asymmetry ($r = 0.22$) and "abnormal" axial rotation-lateral bending coupling ($r = 0.13$). The improvement in the Oswestry Disability Index both post-test and at 2 years after lumbar fusion surgery was significantly correlated with the extension range of motion ($r = 0.049$ and $r = 0.036$, respectively) and the extension-to-flexion range of motion ratio ($r = 0.035$ and $r = 0.044$, respectively). CONCLUSIONS: The "abnormal" motion patterns of chronic LBP patients did not correlate with subjective pain relief after ESF of the suspected symptomatic levels or with the midterm outcome of subsequent lumbar fusion surgery. The results suggest that preserved motion of the symptomatic segments before surgery is positively correlated with the clinical result of the subsequent spinal fusion in case of a positive ESF test result.

Mahli, A., et al. "Alcohol neurolysis for persistent pain caused by superior cluneal nerves injury after iliac crest bone graft harvesting in orthopedic surgery: report of four cases and review of the literature." *Spine. Online.* 27, no. 22(2002): E478-81 UI 12436006.

STUDY DESIGN: Harvesting of autologous bone graft from the posterior iliac crest for lumbar spinal fusions is a frequently performed procedure in orthopedic surgery. The most common complication associated with this procedure is an alteration in sensation over the donor site manifested as chronic pain, hyperesthesia, dysesthesia, or diminished sensitivity resulting from superior cluneal nerve (SCN) injury. OBJECTIVE: To predict the effectiveness of alcohol neurolysis in the treatment of persistent pain caused by the entrapment of superior cluneal nerves. SUMMARY AND BACKGROUND DATA: The subjects of this study were patients with intractable pain in donor area after conventional treatments using a transverse incision, which is parallel to posterior iliac crest. The study group was composed of four patients who underwent surgery in a 1-year period and experienced chronic pain resulting from superior cluneal nerve injury. METHODS: No reports describing alcohol neurolysis of the superior cluneal nerve exist in the relevant literature. All four patients in this study were treated with alcohol neurolysis of the superior cluneal nerves. RESULTS: The study patients were observed up to 4 years, and none of them reported any

problems. CONCLUSIONS: The authors suggest that conventional treatments be limited to a 2-month period, and that alcohol neurolysis be applied as soon as possible to prevent lengthy pain experiences. [References: 42]

McCaffery, M. "Interview with a quality leader. Margo McCaffery on quality in pain management. Interview by Mary A. Seisser and Sandra E. Ward." *Journal for Healthcare Quality*. 24, no. 6(2002): 19-22 UI 12432858.

McConnell, J. "Recalcitrant chronic low back and leg pain--a new theory and different approach to management." *Manual Therapy*. 7, no. 4(2002): 183-92 UI 12481782.

The management of chronic low back and leg pain has always provided a challenge for therapists. This paper examines the influence of a repetitive movement such as walking as a possible causative factor of chronic low back pain. Diminished shock absorption and limited hip extension and external rotation are hypothesized to affect the mobility of the lumbar spine. These compensatory changes can result in lumbar spine dysfunction. Treatment must therefore be directed not only at increasing the mobility of the hips and thoracic spine, but also the stability of the lumbar spine. Sometimes however, the symptoms can be exacerbated by treatment, so the neural tissue needs to be unloaded to optimize the treatment outcome. This can be achieved by taping the buttock and down the leg following the dermatome to shorten the inflamed tissue. [References: 83]

McCracken, L. M., and D. C. Turk. "Behavioral and cognitive-behavioral treatment for chronic pain: outcome, predictors of outcome, and treatment process." *Spine*. Online. 27, no. 22(2002): 2564-73 UI 12435995.

STUDY DESIGN: A literature review was conducted. OBJECTIVE: To examine the outcome of behavioral (BT) and cognitive-behavioral treatment (CBT), collectively referred to as BT-CBT, for chronic pain, to identify the predictors of treatment outcome, and to investigate the change processes associated with these treatments. SUMMARY OF BACKGROUND DATA: Numerous controlled clinical trials of BT-CBT for chronic pain, alone or more commonly in multidisciplinary treatment contexts, suggest that these treatments are effective. However, further study is needed to examine which outcome variables change, when, for whom, and how. METHODS: Published literature was gathered from Medline, PsychLit, and searches of relevant journals. RESULTS: Overall, BT-CBT for chronic pain reduces patients' pain, distress, and pain behavior, and improves their daily functioning. Differences across studies in sample characteristics, treatment features, and assessment methods seem to produce varied treatment results. Also, some patients benefit more than others. Highly distressed patients who see their pain as an uncontrollable and highly negative life event derive less benefit than other patients. Decreased negative emotional responses to pain, decreased perceptions of disability, and increased orientation toward self-management during the course of treatment predict favorable treatment outcome. CONCLUSIONS: Current BT-CBT helps many patients with chronic pain. Continuing clinical research should improve the matching of treatments with patient characteristics and refine the focus of treatments on behavior changes most associated with positive outcome. Further study of fear, attention, readiness to adopt self-management strategies, acceptance of pain, and new combinations of interdisciplinary treatments may lead to improved interventions. [References: 96]

McCrory, C., et al. "Comparison between repeat bolus intrathecal morphine and an epidurally delivered bupivacaine and fentanyl combination in the management of post-thoracotomy pain with or without cyclooxygenase inhibition." *Journal of Cardiothoracic & Vascular Anesthesia*. 16, no. 5(2002): 607-11 UI 12407615.

OBJECTIVE: To compare the analgesic efficacy of a traditional epidurally delivered bupivacaine/fentanyl combination with a repeat bolus intrathecal morphine technique in the management of post-thoracotomy pain and to assess further the effect of cyclooxygenase (COX) inhibition on both modalities. **DESIGN:** Prospective, randomized, blinded study. **SETTING:** University teaching hospital. **PARTICIPANTS:** Patients having thoracic surgery. **INTERVENTIONS:** Epidural and intrathecal catheters were inserted. Blood and urine samples were collected for analysis. COX-1 and COX-2 inhibition with ibuprofen and nimesulide (COX-2 selective) was instituted. **MEASUREMENTS AND MAIN RESULTS:** Pain was assessed at rest and coughing by visual analog scale. Peak expiratory flow rate, patient satisfaction rating, sedation score, analgesic requirements, and preoperative and postoperative urinary creatinine levels were measured. The spinal and nimesulide combination showed the lowest pain scores ($p < 0.001$), least reduction in peak expiratory flow rate ($p < 0.001$), and highest patient satisfaction rating ($p = 0.02$). COX inhibition did not affect analgesic requirements in the epidural group or increase urinary creatinine in any group. **CONCLUSION:** The intrathecal morphine and nimesulide combination offered significantly better analgesia than any other combination studied. The efficacious interaction between opioids and nonsteroidal anti-inflammatory drugs may be COX-2 mediated. Copyright 2002, Elsevier Science (USA). All rights reserved.

McGraw, J. K., et al. "Prospective evaluation of pain relief in 100 patients undergoing percutaneous vertebroplasty: results and follow-up." *Journal of Vascular & Interventional Radiology*. 13, no. 9 Pt 1(2002): 883-6 UI 12354821.

PURPOSE: To determine the efficacy and durability of percutaneous vertebroplasty for the treatment of back pain associated with vertebral body compression fractures. **MATERIALS AND METHODS:** One hundred patients (79 women, 21 men; mean age, 73.7 y) underwent 156 percutaneous injections of polymethylmethacrylate (PMMA) into a vertebra (68 thoracic and 88 lumbar) under fluoroscopic guidance over a 35-month period. Before the procedure and at follow-up, patients were asked to quantify their pain on a visual analog scale (VAS) and complete a follow-up questionnaire of our own design. **RESULTS:** The procedure was technically successful in all patients. There were two complications. One patient sustained a sternal fracture and one experienced a transient radiculopathy. Ninety-seven patients (97%) reported significant pain relief 24 hours after treatment. Mean follow-up duration was 21.5 months (6-44 mo) in 99 patients. Ninety-two patients (93%) reported significant improvement in back pain previously associated with their compression fractures as well as improved ambulatory ability. Before vertebroplasty, the VAS score for the 99 patients was 8.91 +/- 1.12 compared to a score of 2.02 +/- 1.95 at follow-up. The mean difference in VAS scores was significant ($P < .0001$). **CONCLUSION:** Percutaneous vertebroplasty of symptomatic vertebral body compression fractures is a minimally invasive procedure that provides immediate and sustained pain relief in patients with refractory pain.

Melandri, G. "The RITA 3 trial.[comment]." *Lancet*. 360, no. 9349(2002): 1971-2; author reply 1973-4 UI 12493283.

Middaugh, S. J., and K. Pawlick. "Biofeedback and behavioral treatment of persistent pain in the older adult: a review and a study." *Applied Psychophysiology & Biofeedback*. 27, no. 3(2002): 185-202 UI 12206050.

Persistent pain is a common health problem for older adults, age 60+, with a prevalence twice that in younger adults. Yet, older adults with chronic pain and headache are underrepresented in behaviorally oriented clinical programs that have proven effective for younger adults. A review of the literature indicates that older adults develop multiple pain-related problems that are similar to those of younger individuals. When offered the opportunity, older pain patients accept and benefit

from multidisciplinary pain programs, cognitive-behavioral therapies and biofeedback training. A study comparing 58 older and 59 younger adults in a multidisciplinary pain program indicates that older pain patients readily acquire the physiological self-regulation skills taught in biofeedback-assisted relaxation training, and achieve comparable decreases in pain for the pain program as a whole. [References: 73]

Mitchell, R. G., et al. "Esmolol in acute ischemic syndromes." *American Heart Journal. Online.* 144, no. 5(2002): E9 UI 12422138.

BACKGROUND: beta-Blockers have been shown to reduce both morbidity and mortality rates in patients with acute coronary syndromes. However, because of potential side effects, their use is limited in patients who might benefit the most from such therapy. It was thought that the use of an ultra-short-acting intravenous beta-blocker might produce similar results with fewer complications in those patients with relative contraindications to beta-blocker therapy. METHODS: Accordingly, we evaluated the use of esmolol in patients with acute coronary syndromes and relative contraindication to beta-blocker therapy in a prospective randomized trial. One hundred eight patients at 21 sites received an infusion of intravenous esmolol or standard therapy on admission and were followed for 6 weeks from the day of admission. The primary efficacy outcome was a composite event consisting of any of the following that occurred during the index hospitalization: death, myocardial (re)infarction, recurrent ischemia, or arrhythmia as well as silent myocardial ischemia assessed by ambulatory electrocardiographic monitoring. Safety end points including hypotension, bradyarrhythmias, new or worsening congestive heart failure, and bronchospasm were also recorded. RESULTS: Event rates for primary end points were similar in the 2 groups: death (2% in the standard care group vs 4% in the group receiving esmolol), myocardial (re)infarction (4% standard vs 7% esmolol), ischemia (12% vs 13%), arrhythmias (4% vs 2%), and silent ischemia (13% vs 15%). There was a higher incidence of transient hypotension in the group receiving esmolol (2% vs 16%), but all such events were noted to resolve after discontinuation of the esmolol infusion. There were no additional differences in safety end points: bradycardia (2% for those receiving standard care vs 9% receiving esmolol), new congestive heart failure (10% vs 16%), bronchospasm (0% vs 7%), and heart block (2% vs 2%). CONCLUSIONS: The use of an ultra-short-acting beta-blocker such as esmolol might offer an alternative to patients with contraindications to standard beta-blocker therapy. Although this trial had limited power to detect safety and efficacy differences between the 2 therapies, it was observed that safety end points, which occurred during esmolol administration, resolved readily when the infusions were decreased or discontinued. Additional testing is needed to substantiate these findings.

Moller, B. H. "The RITA 3 trial.[comment]." *Lancet.* 360, no. 9349(2002): 1972; author reply 1973-4 UI 12493284.

Motohashi, K., M. Umino, and Y. Fujii. "An experimental system for a heterotopic pain stimulation study in humans." *Brain Research. Brain Research Protocols.* 10, no. 1(2002): 31-40 UI 12379435.

So far heterotopic pain stimulation study has been performed in humans. Many studies have examined changes in subjective pain threshold and nociceptive somatic reflex. However, there are few studies using somatosensory evoked potentials (SEPs) for heterotopic pain stimulation study. Here we describe a new experimental system for a heterotopic pain stimulation study in humans. This system consists of three subsystems including the electrical test stimulation for teeth, the recording of SEP induced by electrical tooth stimulation and conditioning nerve stimulation. The preliminary experiment performed in eight healthy subjects indicated that the electrical test stimulation subsystem with the SEP recording subsystem is also very

well indicated for subjective and objective pain evaluation, including VAS estimation and the amplitude of the SEP late component induced by electrical tooth stimulation. Under the experimental system in the present study, electrical median nerve stimulation as conditioning stimulation significantly decreased both the SEP amplitude induced by electrical tooth stimulation and subjective pain expressed by the VAS. These results revealed that our experimental system works well and it is very suitable and useful for the study of the pain mechanism under heterotopic stimulation in humans. Copyright 2002 Elsevier Science B.V.

Ng, J. M., and M. H. Goh. "Problems related to epidural analgesia for postoperative pain control." *Annals of the Academy of Medicine, Singapore*. 31, no. 4(2002): 509-15 UI 12161889.

INTRODUCTION: Epidural analgesia provides excellent analgesia after major surgery but it is not without adverse effects. This retrospective study aims to evaluate the efficacy of analgesia and the problems commonly encountered postoperatively. **MATERIALS AND METHODS:** Elective surgical patients who had epidural catheters inserted perioperatively intended for postoperative analgesia over a 1-year period were studied. Anaesthetic charts and daily records of patient evaluation by the Acute Pain Service (APS) for pain relief, side effects and their subsequent management were analysed. **RESULTS:** A total of 471 patients had epidural catheters inserted for postoperative analgesia. Ninety per cent of patients received continuous local anaesthetic infusion (75% ropivacaine and 15% bupivacaine) and 10% received intermittent morphine boluses. There were few serious complications but 60% of patients required one or more interventions by the APS, mainly for inadequate analgesia. One-third of patients had their epidural analgesia terminated prematurely due to inadequate analgesia (14.2%), shortage of beds in the high-dependency unit (14%) and other complications. Only 19% of patients had no reported adverse effects. **CONCLUSION:** Although the incidence of serious complications was low, there was a high incidence of minor adverse effects especially during the first 48 hours. This emphasises the importance of close monitoring during the early postoperative period and the APS in the management of side effects, especially inadequate analgesia.

North, R. B., and F. T. Wetzel. "Spinal cord stimulation for chronic pain of spinal origin: a valuable long-term solution." *Spine. Online*. 27, no. 22(2002): 2584-91; discussion 2592 UI 12435997.

STUDY DESIGN: A literature review was conducted. **OBJECTIVE:** To review the indications and efficacy of spinal cord stimulation, particularly in reference to chronic pain of spinal origin. **SUMMARY OF BACKGROUND DATA:** The first spinal cord stimulation was implanted by Shealy in 1967 via a subarachnoid route. Early systems were plagued with a high rate of complications and technical problems. With the evolving technology, especially the advent of multichannel programmable systems and more precise epidural placement, the ability of spinal cord stimulation to treat various pain syndromes improved. This article reviews the literature on spinal cord stimulation from 1967 to the present. **METHODS:** The literature is reviewed, with a particular focus on recent studies investigating the efficacy of spinal cord stimulation for low back pain. **RESULTS:** Most studies are limited by the same flaws, namely, retrospective study design. At this writing, the few published randomized prospective studies have suggested that spinal cord stimulation may be superior to repeat surgery. Complication rates have declined to approximately 8%, and reoperation is necessary in approximately 4% of patients. When current percutaneous techniques are used, a lead migration rate lower than 3% may be achieved. For certain topographies, laminotomy leads may be superior, particularly with regard to low back pain. **CONCLUSIONS:** The ultimate efficacy of spinal cord stimulation remains to be determined, primarily because of limitations associated with the published

literature. However, on the basis of the current evidence, it may represent a valuable treatment option, particularly for patients with chronic pain of predominantly neuropathic origin and topographical distribution involving the extremities. The potential treatment of other pain topographies and etiologies by spinal cord stimulation continues to be studied. [References: 59]

Oakley, J. C., and J. P. Prager. "Spinal cord stimulation: mechanisms of action." *Spine. Online.* 27, no. 22(2002): 2574-83 UI 12435996.

STUDY DESIGN: A literature review and synthesis were performed. OBJECTIVE: To present the current understanding of the mechanisms of spinal cord stimulation in relation to the physiology of pain. SUMMARY OF BACKGROUND DATA: Spinal cord stimulation has been used for more than 30 years in the armamentarium of the interventional pain specialist to treat a variety of pain syndromes. Traditionally used for persisting leg pain after lumbar spinal surgery, it has been applied successfully in the treatment of angina pectoris, ischemic pain in the extremity, complex regional pain syndrome Types 1 and 2, and a variety of other pain states. This review presents the current status of what is known concerning how electrical stimulation of the spinal cord may achieve pain relief. METHODS: A literature review was conducted. RESULTS: The literature supports the theory that the mechanism of spinal cord stimulation cannot be completely explained by one model. It is likely that multiple mechanisms operate sequentially or simultaneously. CONCLUSION: Some clinical or experimental support can be found in the literature for 10 specific mechanisms or proposed mechanisms of spinal cord stimulation. [References: 43]

Ogata, A., et al. "Chemotherapy did not enhance the anti-osteolytic effects of bisphosphonate in multiple myeloma bone disease." *Journal of Bone & Mineral Metabolism.* 20, no. 4(2002): 240-2 UI 12115071.

Okuyama, M., et al. "A comparison of intraoperative celiac plexus block with pharmacological therapy as a treatment for pain of unresectable pancreatic cancer." *Journal of Hepato-Biliary-Pancreatic Surgery.* 9, no. 3(2002): 372-5 UI 12353149.

BACKGROUND/PURPOSE: The efficacy of intraoperative celiac plexus block was compared with that of pharmacological therapy in the treatment of pain caused by unresectable pancreatic cancer. Methods: Twenty-one patients were included in the study: 15 patients underwent intraoperative celiac plexus block (group 1) and 6 received pharmacological therapy (group 2). The effectiveness at 1 week after treatment and from treatment to death was evaluated at follow-up by looking at mean analgesic consumption, mortality and morbidity, and any postoperative complications. Statistical analysis was performed using unpaired t-tests. RESULTS: One week after the operation, the analgesic consumption of 14 patients in group 1 was the same as that before treatment, and 1 patient's consumption had decreased. Pain in 4 patients in group 2 did not change, but in 2 patients it increased. Mean opioid consumption was significantly lower in group 1. Complications related to the block were transient diarrhea and hypotension (P not significant between groups). There was no operative mortality or major complication related to the block. The incidence of adverse drug-related effects, such as constipation, nausea, and vomiting, was significantly lower in group 1 than in group 2. CONCLUSIONS: Intraoperative celiac plexus block made pain control possible with reduced opioid consumption, representing an effective, safe, and simple tool for the treatment of pain caused by unresectable pancreatic cancer.

Omais, M., G. R. Lauretti, and C. A. Paccola. "Epidural morphine and neostigmine for postoperative analgesia after orthopedic surgery." *Anesthesia & Analgesia.* 95, no. 6(2002): 1698-701, table of contents UI 12456442.

In this study, we examined the side effects and analgesia of the combination of epidural neostigmine and morphine in patients undergoing orthopedic surgery. Sixty patients undergoing knee surgery were divided into four groups. The intrathecal anesthetic was 15 mg of bupivacaine. The epidural test drug was diluted in saline to a final volume of 10 mL. The control group received saline as the epidural test drug. The morphine group received 0.6 mg of epidural morphine. The neostigmine group (NG) received 60 micro g of epidural neostigmine. The morphine/neostigmine group received 0.6 mg of epidural morphine combined with 60 micro g of epidural neostigmine. The groups were demographically the same and did not differ in intraoperative characteristics. The visual analog scale score at first rescue analgesic and the incidence of adverse effects were similar among groups ($P > 0.05$). One patient from the NG complained of intraoperative nausea, closely related to spinal hypotension. Postoperatively, two patients from the NG had vomited once. The time (min) to first rescue analgesic was longer in the morphine/neostigmine group (approximately 11 h) compared with the other groups ($P < 0.05$). The analgesic consumption (number of analgesic administrations in 24 h) was larger in the control group compared with the other groups ($P < 0.05$). IMPLICATIONS: The combination of epidural morphine and epidural neostigmine resulted in postoperative analgesia (11 h) devoid of side effects, being an alternative analgesic technique in the population studied.

Ortiguera, C. J., and D. D. Buss. "Surgical management of the symptomatic os acromiale." *Journal of Shoulder & Elbow Surgery*. 11, no. 5(2002): 521-8 UI 12378176.

Os acromiale is an uncommon cause of shoulder pain with symptoms often resulting from an unstable meso-acromion. The associated pain may be due to impingement from the unfused fragment, a concomitant rotator cuff tear, or gross motion at the os acromiale site. Currently, initial treatment includes physical therapy, nonsteroidal anti-inflammatory agents, and subacromial corticosteroid injections. Surgical intervention is reserved for patients who do not respond to nonoperative treatment. Treatment options include open fragment excision, open reduction and internal fixation, and arthroscopic decompression. Open fragment excision can lead to persistent deltoid dysfunction and should be reserved for small fragments or after failed internal fixation. Open reduction and internal fixation allows for both preservation of large fragments and anterior deltoid function. Internal fixation is technically difficult, has led to frequent nonunion rates and often requires hardware removal as a result of postoperative irritation. Arthroscopic subacromial decompression with complete or nearly complete resection of the unstable meso-acromion can be performed without the aforementioned complications. The surgical technique requires no special instrumentation and may be performed reproducibly by those familiar with arthroscopic techniques of the shoulder. Advantages include more rapid rehabilitation, better range of motion, and shorter surgical times. Satisfactory short-term results have shown this to be an effective treatment option for the unstable meso-acromion. [References: 28]

Pandey, C. K., et al. "Gabapentin for the treatment of pain in guillain-barre syndrome: a double-blinded, placebo-controlled, crossover study." *Anesthesia & Analgesia*. 95, no. 6(2002): 1719-23, table of contents UI 12456446.

Pain syndromes of Guillain-Barre are neuropathic as well as nociceptive in origin. We aimed to evaluate the therapeutic efficacy of gabapentin in relieving the bimodal nature of pain in Guillain-Barre syndrome in a randomized, double-blinded, placebo-controlled, crossover study in 18 patients admitted to the intensive care unit for ventilatory support. Patients were assigned to receive either gabapentin (15 mg. kg(-1). d(-1) in 3 divided doses) or matching placebo as initial medication for 7 days. After a 2-day washout period, those who previously received gabapentin received

placebo, and those previously receiving placebo received gabapentin as in the initial phase. Fentanyl 2 micro g/kg was used as a rescue analgesic on patient demand or when the pain score was >5 on a numeric rating scale of 0-10. The numeric rating score, sedation score, consumption of fentanyl, and adverse effects were noted, and these observed variables were compared. The numeric pain score decreased from 7.22 +/- 0.83 to 2.33 +/- 1.67 on the second day after initiation of gabapentin therapy and remained low during the period of gabapentin therapy (2.06 +/- 0.63) (P < 0.001). There was a significant decrease in the need for fentanyl from Day 1 to Day 7 during the gabapentin therapy period (211.11 +/- 21.39 to 65.53 +/- 16.17 [micro g]) in comparison to the placebo therapy period (319.44 +/- 25.08 to 316.67 +/- 24.25 [micro g]) (P < 0.001). IMPLICATIONS: Gabapentin, an antiepileptic drug, has been used effectively for different types of pain management. This study demonstrates that gabapentin has minimal side effects and is an alternative to opioids and nonsteroidal antiinflammatory drugs for management of the bimodal nature of pain of Guillain-Barre Syndrome patients.

Papapietro, N., et al. "Cyclic sciatica related to an extrapelvic endometriosis of the sciatic nerve: new concepts in surgical therapy." *Journal of Spinal Disorders & Techniques*. 15, no. 5(2002): 436-9 UI 12394671.

Sciatic pain caused by endometriosis of the sciatic nerve is an uncommon clinical finding and seems to have been verified histologically in only a few cases. Patients complain of typical signs and symptoms of common sciatica that are cyclic in nature. Suggested compression of lumbar root or sciatic nerve or its plexus could be confirmed by electromyography, computed tomography, or magnetic resonance imaging, and by prompt response to hormonal suppression of ovarian function with regression of the radiologic findings. Patients often have required radical surgery with total hysterectomy and bilateral salpingo-oophorectomy. However, conservative surgery with excision of the endometriosis from the nerve can be successful in selected patients who wish to preserve reproductive function. We report a case of sciatic nerve involvement explored by magnetic resonance imaging, with endometriosis in contact with the nerve in the right sciatic trunk.

Pelter, M. M., M. G. Adams, and B. J. Drew. "Association of transient myocardial ischemia with adverse in-hospital outcomes for angina patients treated in a telemetry unit or a coronary care unit." *American Journal of Critical Care*. 11, no. 4(2002): 318-25 UI 12102432.

BACKGROUND: Little is known about the frequency or consequences of transient myocardial ischemia in patients admitted to a telemetry unit for treatment of angina. OBJECTIVES: To compare the rate of transient myocardial ischemia in a group of patients with angina treated in a telemetry unit with the rate in a similar group treated in a coronary care unit and to determine if transient myocardial ischemia is associated with adverse in-hospital outcomes. METHODS: Continuous 12-lead electrocardiography was used to monitor changes in the ST segment in 186 patients in the coronary care unit (1994-1996) and 186 patients in the telemetry unit (1997-2000). Transient myocardial ischemia was defined as a change from baseline of 100 microV or more in the ST segment in 1 or more leads lasting 60 seconds or longer RESULTS: The rate of transient myocardial ischemia was 15% for patients in the telemetry unit and 19% for patients in the coronary care unit. Regardless of hospital unit, patients with transient myocardial ischemia were more likely than those without this complication to experience death or acute myocardial infarction after hospital admission. Most patients did not experience signs or symptoms during transient myocardial ischemia: 71% of patients in the telemetry unit versus 58% of patients in the coronary care unit (P =.28). CONCLUSIONS: Transient myocardial ischemia is common among patients with angina treated in a telemetry unit. ST-segment

monitoring may be useful for detecting patients with ischemia who may benefit from more aggressive therapies aimed at abolishing ongoing ischemia.

Perkins, E. M. "Less morphine, or more?" *Rn.* 65, no. 11(2002): 51-4 UI 12465527.

Phillips, F. M., and B. Cunningham. "Managing chronic pain of spinal origin after lumbar surgery: the role of decompressive surgery." *Spine. Online.* 27, no. 22(2002): 2547-53; discussion 2554 UI 12435991.

STUDY DESIGN: A literature review was conducted. OBJECTIVE: To provide an evidence-based approach for patients with neurogenic symptoms after lumbar surgery. SUMMARY OF BACKGROUND DATA: Patients may present with chronic pain of spinal origin after lumbar surgery. Failure to decompress the involved neural structures adequately or progression of the underlying degenerative condition may lead to neurologic symptoms. METHODS: A literature search of peer-reviewed publications that investigate etiologies and treatments for neurogenic pain in patients who have undergone previous spinal surgery was conducted. RESULTS: In the absence of profound or progressive neurologic deficits, most patients with chronic back and leg pain who have undergone previous spinal surgery should be treated nonoperatively. Additional decompressive surgical intervention may be justified in patients with well-defined, discrete pathology amenable to surgical correction who have been refractory to conservative care. The surgery typically will include meticulous decompression of the affected neural structures and may include arthrodesis to address any deformity or instability. CONCLUSIONS: In a patient presenting with neurogenic symptoms after lumbar surgery, a meticulous workup is required to elucidate the source of these symptoms. Surgical indications are similar to those for primary lumbar spinal surgery and include a well-defined anatomic source of neural compression that is amenable to a surgical solution. [References: 47]

Portenoy, R., and K. S. Heller. "Developing an integrated Department of Pain and Palliative Medicine." *Journal of Palliative Medicine.* 5, no. 4(2002): 623-33 UI 12243688.

Prager, J. P. "Neuraxial medication delivery: the development and maturity of a concept for treating chronic pain of spinal origin." *Spine. Online.* 27, no. 22(2002): 2593-605; discussion 2606 UI 12435999.

STUDY DESIGN: A literature review and synthesis were performed. OBJECTIVE: To summarize the history, use, and innovation related to neuraxial drug delivery for the treatment of intractable back pain. SUMMARY OF BACKGROUND DATA: The discovery of opioid receptors in the early 1970s provided a rational basis for the delivery of opioid drugs intraspinally. Epidural or intrathecal infusions deliver drugs directly to opioid receptors, limit systemic exposure, and by decreasing the opioid dosage required for pain relief, generally reduce side effects. The benefits of short-term spinal analgesia led to investigation of longer-term continuous subarachnoid opioid infusions for the management of both cancer pain and noncancer pain, such as that of spinal origin. METHODS: RESULTS: Unique features of this article include an updated pain continuum, updated indications for intrathecal therapy, a detailed comparison of trial techniques, a detailed comparison of the advantages of different types of pumps, a synopsis of troubleshooting for inadequate efficacy, and an updated statement regarding intrathecal pumps and radiologic procedures, including MRI scanning. Some challenges remain. Large-scale well-controlled studies could answer some perplexing questions regarding efficacy in patients with noncancer or neuropathic pain. Patient selection criteria undoubtedly will be refined and validated as more patients are treated. In addition, further investigation of specifically

targeted medications or drug combinations for intraspinal use could increase efficacy, reduce side effects, and expand indications. CONCLUSIONS: Intraspinal medication delivery has become an effective technique for control of intractable pain in appropriately selected patients seen by spine surgeons. [References: 67]

Rao, S. S., et al. "An open-label trial of theophylline for functional chest pain." *Digestive Diseases & Sciences*. 47, no. 12(2002): 2763-8 UI 12498299.

Visceral hypersensitivity may play a role in the pathogenesis of functional chest pain, although the underlying mechanism(s) is unknown. We investigated the effects of theophylline, an adenosine receptor antagonist, on sensory perception and biomechanical properties of esophagus in patients with functional chest pain. Esophageal balloon distention was performed using impedance planimetry in 21 consecutive patients with functional chest pain. Patients found to have a hypersensitive esophagus received intravenous theophylline and balloon distention was repeated. If the hypersensitivity improved, oral theophylline was prescribed for three months as an open label trial. Balloon distention reproduced typical chest pain in 16 (76%) patients at thresholds suggestive of hypersensitivity. After theophylline infusion, pain thresholds increased in 12 (75%) patients. Median threshold pressures for discomfort and pain improved ($P < 0.01$). Cross-sectional area increased ($P < 0.05$) and the tension/strain association shifted to the right ($P < 0.01$). Seven of eight patients reported sustained improvement in pain after oral theophylline. Theophylline may ameliorate chest pain in patients with hypersensitive esophagus, possibly by altering adenosine-mediated nociception.

Rawal, N. "Incisional and intra-articular infusions." *Best Practice & Research. Clinical Anaesthesiology*. 16, no. 2(2002): 321-43 UI 12491561.

Incisional and intra-articular local anaesthetic techniques are simple, safe and inexpensive analgesic methods for the management of post-operative pain following a variety of surgical procedures. These techniques are capable of providing effective analgesia over a limited field and with minimal systemic effects. In the literature single-dose local anaesthetics have been administered in most of the studies; however, the duration of analgesia is short-lived. In recent years catheter techniques have been increasingly used as intermittent bolus or continuous infusion in the surgical wound or intra-articularly for long-lasting post-operative analgesia in both hospitalized and day-case patients. The incisional and intra-articular use of opioids and several non-opioids, either alone or in combination with local anaesthetics, has also been evaluated. This chapter reviews the current status of single dose and infusions of local anaesthetics and adjuvants for incisional and intra-articular analgesic techniques and also looks at future perspectives. [References: 119]

Rischitelli, D. G., and S. H. Karbowicz. "Safety and efficacy of controlled-release oxycodone: a systematic literature review." *Pharmacotherapy*. 22, no. 7(2002): 898-904 UI 12126222.

Prescriptions for controlled-release oxycodone, a narcotic analgesic, recently contributed to a dramatic increase in pharmacy costs for a large private insurance company. To determine whether this agent offered clinical benefits over other available drugs that would justify its significantly greater cost, a systematic review of 16 clinical trials was undertaken. The review suggested that immediate-release and controlled-release preparations of oxycodone have similar efficacy and comparable side effect profiles. Controlled-release oxycodone has the advantage of less frequent dosing than immediate-release oxycodone; however, other agents may be dosed infrequently at much lower costs. For patients requiring a controlled-release opioid treatment, controlled-release morphine and methadone should be considered because they appear to be as effective as oxycodone and cost considerably less. Controlled-release oxycodone may be appropriate for some patients, particularly if

they cannot tolerate other controlled-release or long-acting opioid analgesics.
[References: 25]

Rollins, G. "New treatment offers alternative to spinal fusion surgery." *Report on Medical Guidelines & Outcomes Research*. 13, no. 11(2002): 5-7 UI 12498172.

Rothoerl, R. D., C. Woertgen, and A. Brawanski. "When should conservative treatment for lumbar disc herniation be ceased and surgery considered?" *Neurosurgical Review*. 25, no. 3(2002): 162-5 UI 12135229.

Different authors recommend different time spans for conservative treatment before considering surgery in patients suffering from lumbar disc herniation. We analyzed the time of onset of symptoms such as pain, sensory deficit, and motor deficit in a surgically treated group in comparison to outcome after surgery in order to define a time threshold when surgical results deteriorate and operation should therefore be considered. General data, symptoms, signs, and neurological findings of 219 patients were preoperatively recorded. The outcome was evaluated according to the Prolo scale after a mean of 9.9 months. In the statistical workup, we calculated the duration of symptoms, sensory deficits, and motor deficit as continuous variables. Additionally, the population was divided into three groups of duration of symptoms, sensory deficit, or motor deficit for < or = 30 days, 30-60 days, and >60 days. Statistically significant predictors for unfavourable outcome were, for example, a longer duration of preoperative pain and motor and sensory deficit. Patients suffering for more than 60 days from disc herniation were found to have statistically worse outcome than patients suffering for 60 days or less. Findings were similar for the different time groups concerning the duration of sensory deficit but not for duration of motor deficit. The overall outcome seems to be better when patients are operated on for lumbar disc herniations within 2 months after onset of symptoms and sensory deficits. Due to these findings, we recommend conservative treatment up to 2 months and, if conservative management does not succeed, consideration of surgery.

Rousseau, G. F., et al. "Plasma lidocaine concentrations following insertion of 2% lidocaine gel into the uterine cavity after uterine balloon thermal ablation." *BJA: British Journal of Anaesthesia*. 89, no. 6(2002): 846-8 UI 12453927.

BACKGROUND: Uterine balloon thermal ablation is used to treat menorrhagia. We thought that intrauterine application of 2% lidocaine gel could reduce postoperative pain after this procedure. Before using this technique we wished to establish how much lidocaine is absorbed systemically from the uterine cavity after thermal ablation. **METHODS:** Ten ASA I-II patients (age 38-50 yr) underwent uterine balloon thermal ablation under general anaesthesia. They each had 11 ml of 2% lidocaine gel (Instillagel(TM)) inserted into the uterine cavity at the end of the procedure. Blood samples were taken at 5, 15, 30 and 60 min after insertion and lidocaine concentrations were measured using high-performance liquid chromatography. **RESULTS:** Mean (range) plasma lidocaine concentrations at 5, 15, 30 and 60 min were 40.3 (0-221.9), 66.3 (0-271.9), 64.9 (0-208) and 75 (0-212) ng ml(-1), respectively. **CONCLUSION:** There was minimal systemic absorption of lidocaine from the uterus following uterine balloon thermal ablation. Measured concentrations were well below the toxic plasma concentration for lidocaine (8-10 micro g ml(-1)).

Rubenstein, L. "Differential diagnosis and treatment of subcalcaneal heel pain: a case report." *Journal of Orthopaedic & Sports Physical Therapy*. 32, no. 7(2002): 364-5; author reply 365 UI 12113471.

Savage, C., et al. "Postthoracotomy pain management." *Chest Surgery Clinics of North America*. 12, no. 2(2002): 251-63 UI 12122825.

The following techniques appear efficacious in controlling postthoracotomy pain and reducing the amount of systemic opioids consumed: continuous intercostal blockade, paravertebral blockade, and epidural opioids and/or anesthetics. The combination of thoracic epidural opioid and local anesthetic is very effective at relieving postthoracotomy pain, however, considerable experience is required for insertion of the thoracic epidural catheter and postoperative respiratory monitoring. Intercostal and paravertebral catheters can be inserted intraoperatively under direct visualization, to reduce complications of insertion. One-time intraoperative intercostal blockade may effectively reduce postoperative pain in the first day, but is not a practical long-term method for postthoracotomy pain. The effectiveness of interpleural analgesia, even with proper technique, appears inferior to epidural and other regional techniques. We have incorporated the principles outlined in this review into our general thoracic surgery protocol, as detailed in Fig. 1. Every patient is assessed preoperatively for epidural catheter placement. Contraindications include low platelet count (< 100,000), abnormal coagulation profile, medicinal anticoagulation (aspirin and nonsteroidal anti-inflammatories are not contraindications), bony spinal abnormalities, or neurological disorders. The T5/6 interspace is our preferred level, but T10 can work well with an increased dose of bupivacaine. Upon completion of the muscle sparing, minimal-access thoracotomy, we close the wound and perform a percutaneous intercostal nerve block (two ribs above and three below the incision). We then use patient-controlled epidural analgesia, with a basal infusion of bupivacaine and hydromorphone. To supplement inadequate or nonfunctioning epidurals, intravenous patient-controlled opioids are added. When choosing an approach to postthoracotomy pain management, the thoracic surgeon and anesthesiologist must consider the following: (1) the physician's experience, familiarity and personal complication rate with specific techniques; (2) the desired extent of local and systemic pain control; (3) the presence of contraindications to specific analgesic techniques and medications; and (4) availability of appropriate facilities for patient assessment and monitoring postthoracotomy. Refinements in surgical technique including limited or muscle-sparing thoracotomy, video-assisted thoracoscopic surgery (VATS) and robotic surgery may lessen the magnitude of postthoracotomy pain. We encourage all thoracic surgeons to be knowledgeable of available techniques and maintain a protocol to generate a database for periodic assessment of safety and efficacy. [References: 50]

Schoeggel, A., et al. "Outcome after chronic sciatica as the only reason for lumbar microdiscectomy." *Journal of Spinal Disorders & Techniques*. 15, no. 5(2002): 415-9 UI 12394667.

There are only a few long-term studies on microsurgical disc operations, and none concentrated on long-term follow-up of therapy-resistant sciatica. A total of 258 patients whose only neurologic symptoms were sciatica were included in this study. Patients were operated on between 1990 and 1997. All outcome results have been performed by an independent reviewer. The mean follow-up period was 7.3 years (range 4-11 years). At follow-up 25% of the patients were free of pain, 66% demonstrated marked improvement, and 9% had either no improvement or worsening of pain. At follow-up 65% of the patients reported returning to their original occupation or being able to go into retirement without hindrance. A total of 15% required changing of profession following discectomy (75% of these patients applying for early retirement were rejected), 6% were incapacitated and unable to work, and 14% were forced into early retirement. Patients with a history of sciatica longer than 3 months acquired failed back surgery syndrome considerably more often than those <3 months ($p = 0.005$).

Sealey, L. "Nurse administration of Entonox to manage pain in ward settings." *Nursing Times*. 98, no. 46(2002): 28-9 UI 12478928.

This article provides information and advice on Entonox for ward-based nurses carrying out routine procedures that may be painful to patients. An overview of Entonox is provided and the reasons that it may be underused in a ward environment are considered. Examples of common ward procedures in which it could provide effective analgesia to patients, such as the removal of wound drains, are given. Contraindications are also explored. It is hoped that ward-based nurses may be more likely to consider using Entonox to minimise the pain experienced by their patients during common, yet painful interventions. [References: 10]

Sedlis, S. P., et al. "Percutaneous coronary intervention versus coronary bypass graft surgery for diabetic patients with unstable angina and risk factors for adverse outcomes with bypass: outcome of diabetic patients in the AWESOME randomized trial and registry." *Journal of the American College of Cardiology*. 40, no. 9(2002): 1555-66 UI 12427406.

OBJECTIVES: This study compared survival after percutaneous coronary intervention (PCI) with survival after coronary artery bypass graft surgery (CABG) among diabetics in the Veterans Affairs AWESOME (Angina With Extremely Serious Operative Mortality Evaluation) study randomized trial and registry of high-risk patients. **BACKGROUND:** Previous studies indicate that CABG may be superior to PCI for diabetics, but no comparisons have been made for diabetics at high risk for surgery. **METHODS:** Over five years (1995 to 2000), 2,431 patients with medically refractory myocardial ischemia and at least one of five risk factors (prior CABG, myocardial infarction within seven days, left ventricular ejection fraction <0.35, age >70 years, or an intra-aortic balloon being required to stabilize) were identified. A total of 781 were acceptable for CABG and PCI, and 454 consented to be randomized. The 1,650 patients not acceptable for both CABG and PCI constitute the physician-directed registry, and the 327 who were acceptable but refused to be randomized constitute the patient-choice registry. Diabetes prevalence was 32% (144) among randomized patients, 27% (89) in the patient-choice registry, and 32% (525) in the physician-directed registry. The CABG and PCI survival rates were compared using Kaplan-Meier curves and log-rank tests. **RESULTS:** The respective CABG and PCI 36-month survival rates for diabetic patients were 72% and 81% for randomized patients, 85% and 89% for patient-choice registry patients, and 73% and 71% for the physician-directed registry patients. None of the differences was statistically significant. **CONCLUSIONS:** We conclude that PCI is a relatively safe alternative to CABG for diabetic patients with medically refractory unstable angina who are at high risk for CABG.

Sengezer, M., et al. "Two in one: patient-controlled epidural analgesia (PCEA) to prevent erection and control pain in adult hypospadias-surgery patients." *British Journal of Plastic Surgery*. 55, no. 6(2002): 494-7 UI 12479423.

Following penile surgery, erections are painful and may prejudice the result, because the sutures may not withstand a rigid erection. Therefore, prevention of erection and management of pain are extremely important following hypospadias repair, especially in adult patients. In this prospective study, we aimed to achieve these goals by using an epidural block with patient-controlled analgesia. We allocated 20 adult patients scheduled for hypospadias repair randomly either to receive or not to receive epidural analgesia. Postoperative pain was scored according to a standardised scoring system, based on a 10 point visual analogue scale. In group I (n = 10), analgesia was provided by a 3 ml h(-1) continuous infusion of fentanyl (2 microg) and bupivacaine solution (0.125%) in 1 ml saline via an epidural catheter for the first 3 days. Patient-controlled epidural analgesia was administered with an additional 5 ml of the same solution when the pain score was high (> 4).

After 3 days, fentanyl was excluded from the treatment protocol, and analgesia was maintained with bupivacaine (0.125%). In group II (n = 10, control group), an epidural catheter was not inserted, and analgesia was maintained with pethidine (1 mg kg(-1)). Pain management was found to be more effective in group I. No erections occurred in group I, but the erection rate in group II was mean +/- s.d. = 1.7 +/- 0.2. The differences were found to be statistically significant (P<0.05). We highly recommend the technique described here, which offers efficient analgesia and control of erection in adult hypospadias patients.

Shapiro, H., et al. "Laser assisted delivery of topical anesthesia for intramuscular needle insertion in adults." *Lasers in Surgery & Medicine*. 31, no. 4(2002): 252-6 UI 12355570.

BACKGROUND AND OBJECTIVES: Currently there is no safe, effective, and rapid means to eliminate the pain associated with a needle insertion through the skin. It is hypothesized that ablation of the stratum corneum layer using a low energy Erbium(Er):YAG laser would allow rapid local anesthesia from a lidocaine product. **STUDY DESIGN/MATERIALS AND METHODS:** Eighty volunteers participated in a placebo-controlled, double blind, cross-over study employing the Norwood-Abbey (Chelsea Heights, Victoria, Australia) laser anesthesia device (LAD) and two lidocaine preparations. Upper-arm skin ablation was followed by a 5-minute application of study treatment. Pain scores were registered immediately following a needle insertion. **RESULTS:** Comparing the combined lidocaine preparations to placebo, there was a statistically significant reduction in pain when the LAD was employed (P < 0.001). The median pain reduction for lidocaine was 51.3% (95% CI = [40.9, 76.1]). **CONCLUSIONS:** Use of the low energy Er:YAG LAD device in combination with a 5-minute application of lidocaine significantly reduced the pain associated with a needle insertion. Copyright 2002 Wiley-Liss, Inc.

Shayani, V., C. Siegert, and P. Favia. "The role of laparoscopic adhesiolysis in the treatment of patients with chronic abdominal pain or recurrent bowel obstruction." *Journal of the Society of Laparoendoscopic Surgeons*. 6, no. 2(2002): 111-4 UI 12113412.

BACKGROUND: Major abdominal operations result in random and unpredictable scar tissue formation. Intraabdominal scar tissue may contribute to recurrent episodes of bowel obstruction, chronic abdominal pain, or both. Laparoscopic adhesiolysis may provide relief of symptoms in patients with prior abdominal surgery with chronic abdominal pain or recurrent bowel obstruction. **METHODS:** Between September 1996 and April 1999, 35 patients underwent laparoscopic adhesiolysis. Fifteen of the patients had adhesiolysis in conjunction with other major laparoscopic procedures and were excluded from the study. Twenty of the patients who underwent adhesiolysis only were retrospectively assessed for symptomatic relief as well as peri-operative morbidity and mortality. **RESULTS:** Two of 20 patients were not available for long-term follow-up. In the 18 remaining patients, laparoscopic adhesiolysis was performed on 13 patients with abdominal pain and 5 patients with recurrent bowel obstruction. The follow-up period ranged from 1 to 32 (mean 11) months. Sixteen of the 18 (88.9%) operations were completed laparoscopically. Two operations were converted to open for partial enterectomy. An additional enterotomy was repaired laparoscopically. All 3 operative complications were encountered in patients operated on during hospitalization for active bowel obstruction. No mortalities or blood transfusions occurred. One patient required rehospitalization for nonoperative management of an intraabdominal hematoma. Fourteen of the 18 (77.8%) had subjective improvement in their quality of life after operation. Only 1 patient has required repeat adhesiolysis. **CONCLUSIONS:** Laparoscopic adhesiolysis is a safe and effective management option for patients with prior abdominal surgery with chronic abdominal pain or recurrent bowel obstruction not attributed to other

intraabdominal pathology. Laparoscopic intervention in patients with active bowel obstruction may increase the risk of operative complications.

Silverman, S. L., and M. Azria. "The analgesic role of calcitonin following osteoporotic fracture." *Osteoporosis International*. 13, no. 11(2002): 858-67 UI 12415432.

Osteoporosis is a systemic skeletal condition characterized by decreased bone strength with consequent increased susceptibility to bone fracture. Fragility fractures in osteoporosis are often painful and result in loss of quality of life and disability. Salmon calcitonin (SCT) is a natural hormone that may assist in the management of osteoporotic patients following fracture by reducing fracture risk and decreasing pain. SCT is an antiresorptive agent which has been shown to reduce the risk of vertebral fractures (by 36%) in postmenopausal women with osteoporosis and previous fractures, with a safety profile comparable to placebo over long-term use. Clinical evidence suggests that SCT (with either subcutaneous and intranasal delivery) is an analgesic for the acute pain following osteoporotic fracture. Pain relief with SCT occurs after 1 week or less of treatment. Associated with this pain relief, vertebral fracture patients receiving SCT have been observed to have earlier mobilization compared with those receiving a placebo. Both preclinical and clinical data suggest a central analgesic effect for SCT. The mechanism(s) by which SCT induces pain relief has (have) not been conclusively shown. Neither a direct receptor-mediated action nor an indirect endorphin-mediated effect can be ruled out. [References: 97]

Simmons, S. F., B. A. Ferrell, and J. F. Schnelle. "Effects of a controlled exercise trial on pain in nursing home residents." *Clinical Journal of Pain*. 18, no. 6(2002): 380-5 UI 12441832.

OBJECTIVES: To report preliminary data relevant to the effects of an exercise and toileting intervention on pain among incontinent nursing home (NH) residents. **DESIGN:** A randomized controlled intervention trial. **SETTING AND PARTICIPANTS:** Fifty-one incontinent residents in one skilled NH. **INTERVENTION:** The intervention was implemented by research staff for a total of 4 times a day (every 2 hours), 5 days a week, for 32 weeks. Residents were provided with incontinence care and assistance to either walk or, if nonambulatory, wheel their chairs, and to repeat sit-to-stand movements. **MEASUREMENTS:** Pain was measured in two ways at baseline and again at 32 weeks: (1) a count of the number of verbal expressions and pain behaviors during a standardized physical performance assessment; and (2) a modified Geriatric Pain Measure administered in a one-on-one interview format. **RESULTS:** There were significant differences between intervention and control groups on all physical performance measures over time, with the intervention group remaining stable and the control group showing a significant decline in sit-to-stand, walking, and wheelchair propulsion endurance. Both groups showed mild to moderate pain at baseline according to each of the two pain measures, while there were no significant changes in pain reports between groups over time based on either measure. There was, however, a trend for pain to increase in the intervention group. **CONCLUSIONS:** No significant changes in pain reports were attributable to exercise despite significant improvements in physical performance. In fact, there was a tendency for pain reports to increase with exercise. These preliminary findings suggest that exercise alone may be ineffective for pain management among incontinent NH residents. Care providers should consider that exercise to improve physical function may increase pain symptoms, requiring preemptive analgesia, other pain control strategies, or modified exercise techniques for this frail segment of the NH population.

Singh, B., and V. Bhardwaj. "Continuous mandibular nerve block for pain relief. A report of two cases." *Canadian Journal of Anaesthesia*. 49, no. 9(2002): 951-3 UI 12419723.

PURPOSE: Mandibular nerve block allows surgery to be performed on the mandible. However, pain in the postoperative period needs to be treated with opioids or non-steroidal anti-inflammatory agents which have undesirable side effects. We examine the feasibility of continuous mandibular nerve block with 0.25% bupivacaine top-ups using a catheter for intraoperative and postoperative pain relief in two patients with a fracture of the mandible. **METHODS:** Using the lateral extraoral approach, the mandibular nerve was approached with an 18-gauge indwelling iv cannula in two patients undergoing repair of a fractured mandible under general anesthesia. After removing the needle, an 18-gauge epidural catheter was inserted into the cannula which was then removed. The catheter was tunneled subcutaneously to emerge at the lateral aspect of the forehead. Two to 4 mL bupivacaine 0.25% were injected on a 12-hr basis and the catheter was kept in place for seven days. **RESULTS:** Both patients had excellent pain relief and no parenteral or oral analgesics were required throughout the postoperative period. No side effects were noted. **CONCLUSIONS:** Continuous mandibular nerve block with 2-4 mL 0.25% bupivacaine top-ups injected twice a day through a catheter provides excellent pain relief in patients with a fracture of the mandible. This method may have implications for the management of pain of other etiology in the mandibular region.

Slosar, P. J. "Indications and outcomes of reconstructive surgery in chronic pain of spinal origin." *Spine. Online*. 27, no. 22(2002): 2555-62; discussion 2563 UI 12435993.

STUDY DESIGN: Peer-reviewed literature was reviewed and summarized. **OBJECTIVE:** To synthesize the indications and published outcomes of reconstructive lumbar spine surgery for the treatment of chronic pain of spinal origin. **METHODS:** A literature review was conducted. **RESULTS:** The most common indication for reconstructive lumbar surgery is pain that is refractory to nonsurgical treatment. Lumbar fusion has been shown to improve symptoms in carefully selected patients with incapacitating pain. **CONCLUSIONS:** A successful arthrodesis is the fundamental surgical goal for patients with chronic pain of spinal origin. However, a successful fusion does not always correlate with a successful clinical result. [References: 123]

Smith, D. W., et al. "Effects of integrating therapeutic touch into a cognitive behavioral pain treatment program. Report of a pilot clinical trial." *Journal of Holistic Nursing*. 20, no. 4(2002): 367-87 UI 12484105.

The purpose of this study was to investigate the effects of offering Therapeutic Touch (TT) as an adjunct to cognitive behavioral therapy (CBT) for people with chronic pain. Patients were randomized to relaxation training (control group) or TT plus relaxation (experimental). Subsequently, all participants attended a CBT program. Preprogram and postprogram data were examined to identify patterns of change in pain intensity, self-efficacy, unitary power, disability, and perceived distress. In addition, patterns of attrition were examined. Patients in this study who were randomized to receive TT fared better in terms of enhanced self-efficacy and unitary power, as well as having lower attrition rates. Trends associated TT with less distress and disability. This pilot study suggests that offering TT as an adjunct to CBT may help to improve clinical outcomes, reduce program attrition, and promote unitary power in those who suffer with chronic pain.

Straus, B. N. "Chronic pain of spinal origin: the costs of intervention." *Spine. Online*. 27, no. 22(2002): 2614-9; discussion 2620 UI 12436003.

The cost of chronic benign spinal pain is large and growing. The costs of interventional treatment for spinal pain were at a minimum of \$13 billion (U.S.

dollars) in 1990, and the costs are growing at least 7% per year. Medical treatment of chronic pain costs \$9000 to \$19,000 per person per year. The costs of interventional therapy is calculated. Methods of evaluating differential treatments in terms of costs are described. Cost-minimization versus cost-effectiveness approaches are described. Spinal cord stimulation and intraspinal drug infusion systems are alternatives that can be justified on a cost basis. Cost minimization analysis suggests that epidural injections under fluoroscopy may not be justified by the current literature. [References: 40]

Sun, G. "Clinical experience in application of the acupoint futu." *Journal of Traditional Chinese Medicine*. 22, no. 2(2002): 132-3 UI 12125490.

Swank, D. J., et al. "Complications and feasibility of laparoscopic adhesiolysis in patients with chronic abdominal pain. A retrospective study." *Surgical Endoscopy*. 16, no. 10(2002): 1468-73 UI 12073004.

BACKGROUND: A retrospective study was done to determine whether laparoscopic adhesiolysis benefits patients with chronic abdominal pain. Factors that influence complications and feasibility of laparoscopic adhesiolysis were evaluated. METHODS: 174 consecutive operations in 157 patients were retrospectively analyzed for factors which might influence the complication rate and the feasibility of laparoscopic adhesiolysis. RESULTS: In 128 out of 174 procedures a complete adhesiolysis was performed. We had to accept an incomplete adhesiolysis in 39 other patients and in 7 patients a primary conversion was needed. We noticed 16 major complications. Two patients died. Relief of pain was recorded in 80% of patients after short follow-up. The number of previous abdominal operations and patient age significantly affected the outcome of surgery. CONCLUSION: Laparoscopic adhesiolysis in patients with chronic abdominal pain seems to be a feasible and effective operation with considerable risk.

Tai, Q., et al. "Gabapentin in the treatment of neuropathic pain after spinal cord injury: a prospective, randomized, double-blind, crossover trial." *Journal of Spinal Cord Medicine*. 25, no. 2(2002): 100-5 UI 12137213.

BACKGROUND: Neuropathic pain is a common complaint after traumatic spinal cord injury (SCI). Gabapentin, a synthetic structural analogue of GABA, has been shown to have beneficial effects in the treatment of neuropathic pain in other diagnostic groups; however, no standardized clinical trial has been performed to evaluate its efficacy after SCI. DESIGN: A 10-week, prospective, randomized, double-blind, crossover, and placebo-controlled clinical trial. OBJECTIVE: To determine the efficacy of gabapentin in the treatment of SCI-related neuropathic pain. METHODS: Seven subjects with neuropathic pain, who were more than 30 days post-SCI, completed the study. Two groups received a 4-week course of gabapentin and placebo in a randomized crossover design with a 2-week washout period. The Neuropathic Pain Scale was used to record daily pain levels. Data were analyzed using the Wilcoxon signed rank test. RESULTS: Gabapentin has some beneficial effects on certain types of neuropathic pain. There was a significant decrease of "unpleasant feeling" and a trend toward a decrease in both the "pain intensity" and "burning sensation" at the fourth week of gabapentin treatment compared with those on the placebo. No significant difference was found among other pain descriptors during the gabapentin and placebo treatment, although this may have been limited by the small sample size and low maximum dosage of gabapentin. CONCLUSIONS: Gabapentin reduces certain types of neuropathic pain in the SCI population. Future studies with larger sample sizes, higher dosages, and quicker titration will help further determine the efficacy of gabapentin in the treatment of SCI-related neuropathic pain.

Tarzian, A. J., S. M. Davidson, and D. E. Hoffmann. "Management of cancer-related and noncancer-related chronic pain in Connecticut: successes and failures." *Connecticut Medicine*. 66, no. 11(2002): 683-9 UI 12476511.

Findings are reported from a survey of Connecticut HMO patients who had one of three conditions associated with pain: cancer, arthritis, and neuropathic diagnoses. From each group, 145 patients were randomly selected to receive a mailed survey. The overall eligible response rate was 73%. About two thirds had experienced pain for over a year, and the same percentage was experiencing pain at the time of the survey. Seventy-three percent of respondents with cancer pain (RCs) rated their pain in the moderate range, compared to 37.5% of respondents with arthritis pain (RAs) and neuropathic pain (RNPs). More RAs and RNPs (41.5%) rated their pain in the severe range. Twenty-three percent of both RCs and RAs and 31% of RNPs had received no effective treatment for their pain. The percentage of respondents using prescription narcotics at the time of the survey was low (16%), and had dropped by almost half from the proportion using them in the past (29%). Side effects of pain medications and attitudes toward opioids were implicated as reasons for discontinuing pain medications. Respondents described substantial negative impact of pain on their abilities to perform various activities, but this had improved from the time when they first experienced their pain. Overall, the findings indicate that improvements have been made in the treatment of pain, particularly for patients with cancer pain. There is still room for improvement, particularly for individuals with chronic neuropathic pain. Specific recommendations are discussed.

Thompson, D. "Toward a pharmacoeconomic model of neuropathic pain." *Clinical Journal of Pain*. 18, no. 6(2002): 366-72 UI 12441830.

BACKGROUND: Pharmacoeconomic analysis is increasingly being used to assist decision makers in getting the biggest "bang for the buck" within cost-constrained health care budgets. The tools and techniques of this science, however, have scarcely been applied to neuropathic pain. OBJECTIVE: To describe the basic principles of pharmacoeconomic analysis and set forth a preliminary pharmacoeconomic model of neuropathic pain. KEY FINDINGS: Applying the tools and techniques of pharmacoeconomic analysis to neuropathic pain yields several insights. First, because pain treatment predominantly benefits quality of life, the results of a pharmacoeconomic analysis of neuropathic pain treatment should be expressed in terms of the cost per quality-adjusted life-year (QALY)-gained metric. Second, because pain can fluctuate, a state-transition modeling approach should be used in constructing the pharmacoeconomic model to account for changes in pain status over time, particularly as relates to the effects of treatment. Finally, assessment of typical practice patterns in neuropathic pain suggests that the pharmacoeconomic model should account for multiple rounds of treatment (i.e., first-line therapy, second-line therapy, and so on), primary care to specialty care referral patterns, and differences in costs and outcomes between primary care physicians and pain specialists. CONCLUSIONS: Pharmacoeconomic analysis of neuropathic pain treatments can play an influential role in formulary committee deliberations, treatment algorithms, and decision making in the clinical setting. By describing the fundamental concepts and key challenges in this field, it is hoped that this article will represent a useful first step toward a pharmacoeconomic model of neuropathic pain.

Trame, C. "Just what are we treating--addiction or pain?" *Clinical Nurse Specialist*. 16, no. 6(2002): 295-7 UI 12464844.

Turk, D. C. "Clinical effectiveness and cost-effectiveness of treatments for patients with chronic pain." *Clinical Journal of Pain*. 18, no. 6(2002): 355-65 UI 12441829.

OBJECTIVE: Chronic pain is a prevalent and costly problem. This review addresses the question of the clinical effectiveness and cost-effectiveness of the

most common treatments for patients with chronic pain. DATA SOURCES: Representative published studies that evaluate the clinical effectiveness of pharmacological treatments, conservative (standard) care, surgery, spinal cord stimulators, implantable drug delivery systems (IDDSs), and pain rehabilitation programs (PRPs) are examined and compared. The cost-effectiveness of these treatment approaches is also considered. DATA SYNTHESIS: Outcome criteria including pain reduction, medication use, health care consumption, functional activities, and closure of disability compensation cases are examined. In addition to clinical effectiveness, the cost-effectiveness of PRPs, conservative care, surgery, spinal cord stimulators, and IDDSs are compared using costs to return a treated patient to work to illustrate the relative expenses for each of these treatments. CONCLUSIONS: There are limitations to the success of all the available treatments. The author urges caution in interpreting the results, particularly in comparisons between treatments and across studies, because there are broad differences in the pain syndromes and inclusion criteria used, the drug dosages, comparability of treatments, the definition of "chronic" used, the outcome criteria selected to determine success, and societal differences. None of the currently available treatments eliminates pain for the majority of patients. Pain rehabilitation programs provide comparable reduction in pain to alternative pain treatment modalities, but with significantly better outcomes for medication use, health care utilization, functional activities, return to work, closure of disability claims, and with substantially fewer iatrogenic consequences and adverse events. Surgery, spinal cord stimulators, and IDDSs appear to have substantial benefits on some outcome criteria for carefully selected patients. These modalities are, however, expensive. Pain rehabilitation programs are significantly more cost effective than implantation of spinal cord stimulators, IDDSs, conservative care, and surgery, even for selected patients. Research is needed to identify which patients are most likely to benefit from the available treatments and to study combinations of the available treatments since none of them appear capable of eliminating pain or significantly improving functional outcomes for all treated. [References: 75]

Underwood, M., S. O'Meara, and E. Harvey. "The acceptability to primary care staff of a multidisciplinary training package on acute back pain guidelines." *Family Practice*. 19, no. 5(2002): 511-5 UI 12356704.

BACKGROUND: Implementing clinical guidelines is more likely to be successful when the whole practice team is committed to the process. Practices from the MRC General Practice Research Framework in two distinct geographical centres in the UK (West Yorkshire and Greater Manchester) participated in the feasibility study for the UK Back pain Exercise And Manipulation (UK BEAM) trial. Practice teams were randomized to continue with their usual care for back pain patients, or to be trained in managing back pain in line with national guidelines. Those randomized to the intervention arm of the trial were invited to attend training, delivered by either a generic trainer or a back pain expert. OBJECTIVES: Our aims were to assess the general acceptability of the training package to staff, to assess the acceptability of the multidisciplinary approach and to determine if a generic primary care educator could deliver the training as effectively as a clinical back pain expert. METHODS: All staff (clinical and non-clinical) from intervention practices were invited to attend multidisciplinary training sessions on the active management of back pain. Practice staff in West Yorkshire were trained by a generic primary care educator and practice staff in Greater Manchester were trained by a clinical back pain expert. The content of sessions was standardized for both trainers and included didactic and interactive components and small group, case study discussions. Detailed notes were taken of observations made of participants during sessions, and evaluation forms were completed by all those who attended. RESULTS: The majority of participants found the training useful and said that the session had lived up to their expectations. Most

found that the session was well planned and that they had sufficient opportunity to participate in learning. The training package was well received by clinical staff, but was less acceptable to non-clinical staff. GPs dominated the small group work discussions. No differences were found between the preferences of participants for the two different trainers. CONCLUSION: The training package was appropriate for clinical staff, but did not always meet the needs of non-clinical staff and may require modification for this group. A generic educator can successfully lead multidisciplinary educational sessions addressing clinical issues.

Van Niekerk, L. M., and F. Martin. "The impact of the nurse-physician professional relationship on nurses' experience of ethical dilemmas in effective pain management." *Journal of Professional Nursing*. 18, no. 5(2002): 276-88 UI 12434321.

The aims of the current investigation were (1) to examine the ethical and professional conflicts experienced by Tasmanian registered nurses in attempting to provide optimal pain management, and (2) to examine nurse satisfaction with their professional relationship with physicians and with their level of involvement in pain management. A total of 1,015 registered nurses completed a 21-item survey examining ethical and professional conflicts encountered during patient pain management. Data also were gathered investigating nurse satisfaction with their involvement in and professional relationship with physicians during pain management. The respondents who felt adequately consulted by physicians were significantly more likely to instigate the consultation process than the respondents who felt that they were not adequately consulted by physicians about their patient's pain status. This was marked in relation to the need for increased pain relief medications. Nurses who did not feel adequately consulted by physicians were significantly more likely to experience ethical conflicts such as concerns about undermedication and patient reluctance to report pain. Nurses' concerns related to ethical conflicts concerning effective pain management are affected by their relationship with physicians. Education, for both nurses and physicians, concerning the role of the nurse in the workplace will help to ensure that these conflicts do not arise. Guidelines concerning the level of patient care at which consultation is necessary will ensure fewer conflicts and greater nurse satisfaction in the workplace. Copyright 2002, Elsevier Science (USA). All rights reserved.

von Peter, S., et al. "Survey on the use of complementary and alternative medicine among patients with headache syndromes.[comment]." *Cephalalgia*. 22, no. 5(2002): 395-400 UI 12110115.

The objective was to determine headache patients' knowledge, prevalence of use and perceived effectiveness of complementary and alternative medicine. Seventy-three patients with headache syndromes attending a head and neck pain clinic were interviewed using a standardized questionnaire. Alternative medical therapies were used by 85% of surveyed patients for the relief of their head pain. In 60%, the therapies were perceived to have a benefit. Almost 100% of the patients were familiar with one or more of the presented alternative treatments. Eighty-eight per cent perceived at least one of the complementary treatments to be an effective remedy for headache pain. Exposure to and interest in alternative treatments are common among patients with headache syndromes, despite the lack of scientific evidence of benefit and assessments of risks for many of the treatments. Neurologists and general physicians should be aware of the increasing role of alternative medicine in the healthcare system. There is still an urgent need for objective, integrative and critical research with regard to complementary and alternative medicine.

Voris, J. C., C. M. Phillips, and C. T. Voris. "Nonsteroidal antiinflammatory drug starter packs for chronic musculoskeletal pain." *Pharmacotherapy*. 22, no. 7(2002): 836-40 UI 12126217.

STUDY OBJECTIVE: To determine whether prescribing a nonsteroidal antiinflammatory drug (NSAID) starter pack for chronic musculoskeletal pain expedites the process of finding an appropriate drug for a given patient. **DESIGN:** Prospective patient interviews. **SETTING:** Veterans Affairs Medical Center. **PATIENTS:** Sixty-four patients with chronic musculoskeletal pain were prescribed NSAID starter packs. Of those, 42% were interviewed and their data evaluated. **INTERVENTION:** Between March and June 2001, patients received starter packs containing 1-week supplies of the following NSAIDs: ibuprofen, salsalate, etodolac, naproxen, sulindac, and piroxicam. The patients took one drug each week, then returned to their providers to receive a prescription for the agent that was considered most effective and tolerable. **MEASUREMENTS AND MAIN RESULTS:** Patients assessed pain each day based on a numeric pain-rating scale. During telephone interviews, seven patients reported better pain control when they were able to select a drug from the starter pack than when they were prescribed a specific drug by their providers. Providers rated the starter pack as easy to use by patients and generally effective for finding the best NSAID for a particular patient. Drugs prescribed after completing the starter pack were salsalate 25.9%, piroxicam 22.2%, etodolac 14.8%, ibuprofen 14.8%, naproxen 11.1%, celecoxib 7.4%, and an opiate 3.7%. **CONCLUSION:** The NSAID starter pack appears to be a successful method for quickly and easily finding an NSAID that is effective and tolerated.

Vranken, J. H., et al. "Continuous sacral nerve root block in the management of neuropathic cancer pain." *Anesthesia & Analgesia*. 95, no. 6(2002): 1724-5, table of contents UI 12456447.

IMPLICATIONS: Neuropathic cancer pain caused by tumor infiltration in the sacral plexus is primarily treated by nonsteroidal antiinflammatory drugs, antidepressants, anticonvulsants, and opioids. In one patient with severe pain despite pharmacotherapy, a catheter for the continuous administration of local anesthetics was inserted along the first sacral root, resulting in markedly improved analgesia.

Walker, A. E., et al. "Does pericapsular lignocaine reduce pain during transrectal ultrasonography-guided biopsy of the prostate?" *BJU International*. 90, no. 9(2002): 883-6 UI 12460350.

OBJECTIVE: To evaluate whether injection with pericapsular lignocaine before transrectal ultrasonography (TRUS)-guided biopsy reduces the perceived pain of prostatic biopsy. **PATIENTS AND METHODS:** The study included 121 patients referred for TRUS-guided biopsy of the prostate; 27 underwent biopsy with no previous injection and 94 were randomized to pericapsular injection with either 1% lignocaine or a placebo (saline). Both patient and operator were unaware of the content of the injection. The injection was delivered under TRUS guidance to the apex of the prostate. Routine sextant biopsies were taken using an 18 G needle in a spring-loaded biopsy gun. A validated pain scale, the NRS11 (0, no pain, to 10, unbearable pain), was used to record the pain of each biopsy. **RESULTS:** No significant placebo effect was detected between the 'no injection' and the placebo-injection group, with mean (95% confidence interval) pain scores of 3.58 (2.77-4.39) and 4.01 (3.46-4.51), respectively, using the unpaired Student's t-test ($P = 0.409$). There was a statistically significant lower mean pain score in the lignocaine group, at 2.54 (2.00-3.10), than in the placebo-injection group ($P < 0.001$). **CONCLUSION:** Pericapsular injection with 1% lignocaine significantly reduces the perceived pain of TRUS-guided prostatic biopsy.

Wallace, M. S., J. Braun, and G. Schulteis. "Postdelivery of alfentanil and ketamine has no effect on intradermal capsaicin-induced pain and hyperalgesia." *Clinical Journal of Pain*. 18, no. 6(2002): 373-9 UI 12441831.

OBJECTIVE: The predelivery of intravenous alfentanil (a mu opioid agonist) and ketamine (an -methyl d-aspartate antagonist) has recently been shown to decrease the secondary hyperalgesia induced by intradermal capsaicin. The focus of this study was to determine the effects of the postdelivery of intravenous alfentanil and ketamine on intradermal capsaicin-induced secondary hyperalgesia. **DESIGN:** Double-blind, placebo-controlled, randomized, crossover study. Five minutes after an intradermal capsaicin injection, alfentanil and ketamine infusions were administered for a target plasma concentration of 75 ng/ml for alfentanil and 150 ng/ml for ketamine or placebo equivalent using a computer-controlled infusion pump and maintained for the remainder of the study. The investigator recorded the magnitude of the pain score at the time of injection and at 5-minute intervals. Fifteen minutes after the intradermal capsaicin injection, the region of secondary hyperalgesia and flare response was determined. **RESULTS:** Alfentanil and ketamine plasma levels targeted after injection of intradermal capsaicin had no significant effect on pain scores, flare response, or secondary hyperalgesia. **CONCLUSIONS:** Consistent with animal studies on preemptive analgesia, this study demonstrates that alfentanil and ketamine have a differential effect when delivered before and after a painful stimulus. Because of the differential effect seen, future studies on the pharmacology of human experimental pain should evaluate both predrug and postdrug delivery.

Wallace, M. S., et al. "A randomized, double-blind, placebo-controlled trial of a glycine antagonist in neuropathic pain." *Neurology*. 59, no. 11(2002): 1694-700 UI 12473754.

BACKGROUND: Nerve injury results in increases in spinal glutamate, which opens the NMDA ionophore channel, causing an influx of calcium. A glycine-binding site must be occupied for the channel to open. GV196771 is a selective antagonist of the glycine-binding site of the NMDA ionophore. **OBJECTIVE:** To determine the efficacy of GV196771 in subjects with chronic neuropathic pain in a proof-of-concept study. **METHODS:** With informed consent, 63 subjects (31 placebo, 32 GV196771) with neuropathic pain (diabetic neuropathy, postherpetic neuralgia, complex regional pain syndrome, or peripheral nerve injury), a visual analogue score averaging ≥ 30 mm during the screening period, and a well-defined primary area of mechanical allodynia were recruited for the study. A multicenter, randomized, double-blind, placebo-controlled, parallel-group study design was utilized. Subjects came to the research center for a total of five visits over a 21-day period, which consisted of a 14-day treatment period followed by a 7-day washout period. Spontaneous and evoked pain scores, mechanical sensory testing, quantitative sensory testing, Short Form McGill Pain Questionnaire, patient global satisfaction, and safety assessments were made during the study. **RESULTS:** There was no significant effect of GV196771 on spontaneous or evoked pain, quantitative sensory testing, or patient global satisfaction. There was a significant effect of GV196771 on the area of dynamic and static allodynia on days 7 and 14. The overall incidence of adverse events during treatment was similar for GV196771 (56%) and placebo (71%). The incidence of drug-related adverse events during treatment was higher for placebo (42%) than GV196771 (28%). **CONCLUSIONS:** Although the glycine antagonists show anti-hyperalgesic action in animal models of neuropathic pain, GV196771 does not appear to be an effective treatment in subjects with chronic neuropathic pain. This may be due to insufficient penetration of GV196771 to central sites of action, differences between the human and animal glycine receptors, or differences between neuropathic pain in animal models and humans.

Weiner, D. K., and T. E. Rudy. "Attitudinal barriers to effective treatment of persistent pain in nursing home residents." *Journal of the American Geriatrics Society*. 50, no. 12(2002): 2035-40 UI 12473018.

OBJECTIVES: To systematically explore nursing home (NH) resident and staff attitudes that serve as barriers to detection and management of persistent pain. DESIGN: Survey. SETTING: Six community-based and one Veterans Affairs long-term care facility PARTICIPANTS: Seventy-five NH nurses, 75 certified nursing assistants (CNAs), and 75 communicative NH residents who reported some pain or discomfort "every day or almost every day." MEASUREMENTS: Three structured pain attitudes questionnaires (one each for NH residents, CNAs, and nurses) that incorporated constructs gleaned from a comprehensive literature review were designed. One-week test-retest reliability was calculated on a subsample of 25 residents, 19 CNAs, and 26 nurses. Attitudinal differences between the three groups were evaluated using multivariate analysis of variance (MANOVA). RESULTS: Of 12 constructs evaluated, 10 had fair to excellent reliability indices (residents 0.46-0.80; CNAs 0.57-0.76; nurses 0.62-0.94). Of these 10 reliable constructs, MANOVA indicated significant overall attitude differences between the three groups. Follow-up analyses indicated that attitudes endorsed most strongly by residents were that chronic pain does not change, belief in external pathology over pain reports, fear of addiction, and fear of dependence. CNAs attitudes endorsed most strongly were lack of time and complaints unheard. The nurse attitude endorsed most strongly was complaints unheard. CONCLUSIONS: These findings suggest that, if residents' fears regarding addiction, worsening dependence, and the immutable nature of persistent pain were quelled, and if CNAs could feel that adequate time is available for pain assessment, perhaps improved pain management in the NH would result.

Wetzel, F. T., T. A. McNally, and F. M. Phillips. "Intradiscal electrothermal therapy used to manage chronic discogenic low back pain: new directions and interventions." *Spine. Online*. 27, no. 22(2002): 2621-6 UI 12436005.

STUDY DESIGN: Retrospective literature review. OBJECTIVES: To review the data on the clinical efficacy of intradiscal electrothermal annuloplasty found at this writing in the peer-reviewed literature to date, to discuss the methodologic strengths and flaws of the studies, to discuss the pitfalls of clinical study designs, to emphasize the need for prospective randomized studies and for increased basic science investigation. SUMMARY OF BACKGROUND DATA: Studies published or presented at peer-reviewed societies concerning the clinical efficacy of intradiscal electrothermal annuloplasty are reviewed, including background studies on deafferentation and application of thermal energy to alter biomechanical and structural properties. A proposal for future investigations is presented. METHODS: Background data from intracapsular annuloplasty highlighting the safety and efficacy of intradiscal electrothermal annuloplasty are presented. Current studies on this procedure, including those in the National Registry are reviewed. All the studies share a common study design: prospective cohort with historical or noninterventive groups used as controls. The patients reviewed are similar. All have nonradicular low back pain of at least 3 months duration, failed conservative care, normal neurologic examination, and MRI showing only nondegenerative disc disease and positive concordant discography. All the patients underwent intradiscal electrothermal annuloplasty lesion at one or two levels according to standard protocols. Follow-up evaluation was performed at various intervals up to 2 years. All the studies used data from a visual analog scale, with most using the Short Form 36 (SF-36) as outcome instruments. RESULTS: The reported follow-up periods for the studies ranged from 6 months to 2 years. Three published studies, one with a 6-month follow-up period and two with a 1-year follow-up period, were published in the peer-reviewed literature. Two recent reports presented to the North American Spine Society were reviewed: a study of patients on a manufacturer-sponsored registry

with a 1-year follow-up period and a multicenter prospective cohort study of 75 patients in an intent-to-treat group, with a 1-year follow-up period. Using the 7-point criteria of Deyo et al, all the studies suggested a positive effect of treatment, with a decrease in visual analog scale ratings and improvement in SF-36 scales, particularly those for physical function and bodily pain. CONCLUSIONS: The studies published so far suggest that the pain resulting from lumbar disc disease may be diminished by intradiscal electrothermal annuloplasty. All these studies project a positive therapeutic effect. However, all the studies suffer from the same methodologic flaws. A prospective cohort design or a nonrandomized prospective design is used with a biased control. The scientific validity of various study designs is discussed, and a randomized prospective study is recommended. Additionally, more investigation into the basic science of the action of intradiscal electrothermal annuloplasty is required. [References: 57]

Whitmarsh, T. "Survey on the use of complementary and alternative medicine among patients with headache syndromes.[comment]." *Cephalalgia*. 22, no. 5(2002): 331-2 UI 12110107.

Whitworth, L. A., and C. A. Feler. "Application of spinal ablative techniques for the treatment of benign chronic painful conditions: history, methods, and outcomes." *Spine. Online*. 27, no. 22(2002): 2607-12; discussion 2613 UI 12436001.

STUDY DESIGN: The literature on current neuroablative techniques for treating benign chronic painful conditions is comprehensively reviewed. OBJECTIVE: To provide the reader with an understanding of the indications, techniques, and outcomes for the various ablative procedures used to treat chronic pain syndromes. SUMMARY OF BACKGROUND DATA: Neuromodulatory techniques are rapidly supplanting the traditional neuroablative procedures used to treat many types of pain. METHODS: A MEDLINE search was conducted for each of the following procedures: radiofrequency facet denervation, cordotomy, myelotomy, sympathectomy, DREZotomy, rhizotomy, and ganglionectomy. In the review of each article, special attention given to the outcome, length of follow-up, complications, and number of patients. Summaries of this data were compiled to provided historical perspective, current techniques, indications, and outcomes for each of the aforementioned procedures. The outcomes cited for each procedure generally represent the data from the three or four largest series with adequate follow-up length. RESULTS: The aforementioned procedures have 30% to 90% success rates, with success defined as at least a 50% reduction in perceived pain. These results tend to diminish with time. However, most are associated with a significant degree of morbidity and relatively high complication rates. In addition, many of the techniques lead to deafferentation pain syndromes. CONCLUSIONS: Ablative spinal techniques offer pain relief for many patients, but the use of these methods should be considered carefully in the light of available nondestructive procedures that may achieve similar goals with potentially lower morbidities. [References: 69]

Wright, P. J., et al. "Managing acute renal colic across the primary-secondary care interface: a pathway of care based on evidence and consensus." *Bmj*. 325, no. 7377(2002): 1408-12 UI 12480861.

Yilmaz, M. E., et al. "Venlafaxine in the treatment of painful peripheral diabetic neuropathy in a uremic patient undergoing hemodialysis." *Medgenmed [Computer File]: Medscape General Medicine*. 4, no. 3(2002): 23 UI 12466766.

Younis, N., et al. "Painful cutaneous lesions, renal failure and urgent parathyroidectomy." *Journal of Nephrology*. 15, no. 3(2002): 324-9 UI 12113607.

We describe two patients with end stage renal failure who presented with painful skin lesions, which rapidly progressed to become necrotic and gangrenous. The diagnosis was calciphylaxis, a rare disorder due to calcification and luminal fibrosis of small and medium sized cutaneous and systemic vessels. Both patients had tertiary hyperparathyroidism. An urgent parathyroidectomy was performed on one patient, which relieved her symptoms; the other required local surgery but refused parathyroidectomy and died.

Yount, K. "Diagnosis and management of nondental toothache." *Dentistry Today*. 21, no. 11(2002): 130-5 UI 12483940.

Zhu, X. M., and B. Polus. "A controlled trial on acupuncture for chronic neck pain." *American Journal of Chinese Medicine*. 30, no. 1(2002): 13-28 UI 12067088.

To evaluate the efficacy of Chinese medicine (CM) acupuncture for chronic neck pain (CNP), a single blind, controlled, crossover, clinical trial was undertaken. Twenty-nine volunteers with CNP were randomly recruited into two groups. Both groups received two phases of treatment with a washout period between the two phases. Group A (14 volunteers) received CM acupuncture in the first phase and sham acupuncture in the second, while Group B (15 volunteers) received sham in the first and real in the second. CM acupuncture was individualized and consisted of nine sessions on both local and distal points. Manual twisting of the needle was applied on all points plus strong electrical stimulation of distal points in CM acupuncture. Sham acupoints (lateral to the real) and sham (weak) electrical stimulation was used in the control group. Comparison of subjective and objective measures between the two groups was made at different periods, including baseline, after each phase of treatment, after washout, and after the 16th week follow-up. The subjective measures included pain intensity, duration per day, analgesic medication count, visual analogue scales (VAS) and neck disability index (NDI). The objective measures consisted of neck range of motion (ROM) and pain threshold (PT). Both the real and sham treatments significantly reduced subjective pain, without significant differences between groups for most subjective measures. Objective measures showed no significant change for either group before and after each period or by inter-groups analysis. A minimum 16-week effect of both real and sham acupuncture was found for subjective measures in the follow-up periods. Further study is recommended with an increased sample size, a longer washout period, and a longer baseline period.

Zwart, J. A., and T. Sand. "Repeatability of dermatomal warm and cold sensory thresholds in patients with sciatica." *European Spine Journal*. 11, no. 5(2002): 441-6 UI 12384751.

Quantification of thermal thresholds is a useful method to assess and follow up the function of afferent small A-delta and C-fibres in patients with nerve dysfunctions. The object of this study was to estimate thermal test-retest repeatability in 19 patients with unilateral sciatica (14 L5 and 5 S1) in affected and non-affected dermatomes on the symptomatic (S) and non-symptomatic (NS) sides. Detection thresholds were measured at six sites, two within each of the L4, L5 and S1 dermatomes. The test was repeated after 1-2 h and the coefficient of repeatability (CR=2SD of test-retest differences) was calculated. Warm threshold repeatability did not differ between S and NS sides, but cold threshold CR was higher in the affected dermatome on the foot as compared to the contralateral dermatome (P=0.04). Warm thresholds were more variable (CR=5 degrees C and 4.7 degrees C on S and NS sides) than cold thresholds (CR=2.2 degrees C and 2.1 degrees C on the S and NS sides). The expected range of variation for the second measurement was between 51% and 200% for warm and between 45% and 230% for cold thresholds. The sensitivity was better on the foot than the lateral calf (5 of 14 vs 1 of 14 abnormal thresholds) in the subgroup with L5 sciatica. We conclude that

dermatomal thermotesting has acceptable repeatability, particularly at proximal lower extremity sites. The test may be useful in longitudinal investigations of patients with sciatica, e.g. in treatment follow-up studies.