



PAIN MANAGEMENT

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Agarwal, A., et al. "Pretreatment with thiopental for prevention of pain associated with propofol injection." *Anesthesia & Analgesia*. 98, no. 3(2004): 683-6, table of contents UI 14980919.

Propofol causes pain on IV injection in 28%-90% of patients. A number of techniques have been tried to minimize propofol-induced pain, with variable results. We compared the efficacy of pretreatment with thiopental 0.25 mg/kg and 0.5 mg/kg and lidocaine 40 mg after venous occlusion for prevention of propofol-induced pain. One-hundred-twenty-four adult patients, ASA physical status I-II, undergoing elective surgery were randomly assigned into 4 groups of 31 each. Group I received normal saline, group II received lidocaine 2% (40 mg), and groups III and IV received thiopental 0.25 mg/kg and 0.5 mg/kg, respectively. All pretreatment drugs were made in 2 mL and were accompanied by manual venous occlusion for 1 min. Propofol was administered after release of venous occlusion. Pain was assessed with a four-point scale: 0 = no pain, 1 = mild pain, 2 = moderate pain, and 3 = severe pain at the time of propofol injection. Twenty-four patients (77%) complained of pain in the group pretreated with normal saline as compared with 12 (39%), 10 (32%), and 1 (3%) in the groups pretreated with lidocaine 40 mg, thiopental 0.25 mg/kg, and thiopental 0.5 mg/kg, respectively (P < 0.05). Thiopental 0.5 mg/kg was the most effective treatment. We therefore suggest routine pretreatment with thiopental 0.5 mg/kg along with venous occlusion for 1 min for prevention of pain associated with propofol injection. **IMPLICATIONS:** Pain associated with IV injection of propofol is seen in 28%-90% patients. Pretreatment with thiopental 0.25 mg/kg and 0.5 mg/kg after manual venous occlusion for 1 min effectively attenuated pain associated with propofol injection. Thiopental 0.5 mg/kg was the most effective in prevention of propofol pain and can be used routinely.

Ahadian, F. M. "Pulsed radiofrequency neurotomy: advances in pain medicine." *Current Pain & Headache Reports*. 8, no. 1(2004): 34-40 UI 14731381.

In the past three decades, radiofrequency neurotomy (RFN) has been established as a safe and effective treatment for facet and sacroiliac arthropathy. However, early reports of deafferentation pain syndromes and motor deficit with the application of radiofrequency lesions to other neural structures effectively halted further development of this technology for other applications until recent years. Pulsed radiofrequency neurotomy (PRFN) represents the most recent advance in radiofrequency technology in clinical practice. PRFN allows for application of radiofrequency current at markedly lower tissue temperatures, thereby minimizing the risk of adverse events. The initial clinical data on PRFN demonstrate response rates similar to conventional high temperature RFN lesions for facet and sacroiliac arthropathy and a host of other chronic pain disorders. [References: 52]

Akan, M., et al. "Ice application to minimize pain in the split-thickness skin graft donor site." *Aesthetic Plastic Surgery*. 27, no. 4(2003): 305-7 UI 15058555.

Reconstruction of tissue defects with skin grafts is one of the most used processes in soft tissue defects. While any part of the body can be used as a donor site of split-thickness skin grafts, the posterolateral thigh is the most used one. Pain in the graft donor site may be the primary concern of patients in the postoperative period. Various kinds of donor site dressings

and procedures have been described for this purpose. The main goal of this practice is the fast recovery of the donor site. Nevertheless, avoiding infection, decreasing the pain in the donor site, and minimizing the cost should be considered. To minimize pain in the graft donor site, ice pack application, used for its local anesthetic effect, was utilized for patients postoperatively in our clinic. Thirty-six patients were included in this study between June 2001 and May 2002. Patients were divided into two groups, with 18 patients in-group I, to whom ice was applied, and 18 patients in group II, which was specified as the control group. The patients were evaluated according to the pain in the graft donor site. The visual analog scale (VAS) was used to evaluate the pain of the patients. The data were statistically evaluated with the Mann-Whitney U test procedure. In addition to this, infections, recovery periods, and cost benefit effects were also determined. The mean pain scores in the graft donor site were found to be quite low in patients in the group with ice application ($p < 0.05$). No significant difference was determined between the two groups when their pain scales were compared on the fourth and the fifth days ($p > 0.05$). Ice can be safely used in patients for whom donor site pain is the primary concern, with advantages such as ease of application, low cost (almost free), and a significant decrease in pain in the donor site.

Alcenius, M. "Successfully meet pain assessment standards." *Nursing Management*. 35, no. 3(2004): 12 UI 15021792.

Learn how to best meet updated pain assessment standards.

Andrew Walsh, D., et al. "Performance problems of patients with chronic low-back pain and the measurement of patient-centered outcome." *Spine*. 29, no. 1(2004): 87-93 UI 14699282.

STUDY DESIGN: In a prospective interventional study, problems with performance were evaluated in 101 consecutive patients with chronic low-back pain for more than 12 months, before and after participation in an outpatient-based multidisciplinary pain management program in Mansfield, United Kingdom. **OBJECTIVES:** To describe problems identified as most important by patients with chronic low-back pain and to evaluate the Canadian Occupational Performance Measure (COPM) as a tool for measuring problem-specific outcomes. **SUMMARY OF BACKGROUND DATA:** Patients with chronic low-back pain report difficulties with a variety of activities. The COPM permits the identification and measurement of problems of particular concern to the patient. **MATERIALS AND METHODS:** COPM, likert-modified Roland and Morris Disability Questionnaire, Pain Self-Efficacy Questionnaire, and 5-minute walk test were administered at baseline, immediately after, and 9 months after intervention. Differences and statistical interactions were determined by nonparametric tests. **RESULTS:** Participants identified 60 different types of problem activity, 45 of which were identified by nine or fewer participants. Decreased walking tolerance was the most frequently identified problem (56% of participants). Improvements were observed in all outcomes following intervention. Approximately one third of participants reported improvements two or more COPM units in overall performance and satisfaction with their performance at 9 months. Higher reported performance and satisfaction were associated with greater self-efficacy. Increased reported walking performance was associated with increased observed 5-minute walk distance ($R = 0.35$, $P = 0.02$). **CONCLUSIONS:** Patients with chronic low-back pain report problems with diverse activities. The COPM provides a patient-centered outcome measure that displays good external validity and responsiveness to change when addressing the individual's goals.

Anonymous. "How to make dressing changes less painful." *Advances in Skin & Wound Care*. 17, no. 1(2004): 42-3 UI 14752327.

Ardery, G., et al. "Lack of opioid administration in older hip fracture patients (CE)." *Geriatric Nursing*. 24, no. 6(2003): 353-60 UI 14694324.

As part of a multisite study funded by the Agency for Healthcare Research and Quality, the medical records of older adults with a hip fracture were abstracted for acute pain assessment and treatment practices. Of the 709 records reviewed, 8 patients did not have an opioid administered during the first 72 hours after admission to a non-intensive patient care unit. Using a case study approach, this article examines demographic characteristics, pain assessment, and analgesic administration for these 8 patients to illustrate specific practice problems that occur in managing acute pain in older adults. Pain intensity was documented infrequently. All 8 patients had a physician order for some type of analgesic, and 7 of the 8 had an order for an opioid analgesic. Yet none received an opioid during the first 72 hours of care on a general medical-surgical unit, and one patient received no analgesia of any kind.

The medical records of these hip fracture patients indicate that acute pain was underassessed and undertreated. Provision of quality pain management will require that nurses address the specific practice behaviors identified in the article and correct problems where they exist. Key strategies that can be used to improve pain management practices include implementation of standardized assessment tools and pain flow-sheets, audit and feedback of pain management data with staff, use of pain management opinion leaders and change champions, and incorporation of research-based pain management practices into performance-evaluation criteria. [References: 38]

Ausman, J. I. "The death of spine surgery as we know it today." *Surgical Neurology*. 61, no. 4(2004): 315 UI 15031062.

Ausman, J. I. "I told you it was going to happen." *Surgical Neurology*. 61, no. 4(2004): 313-4 UI 15031061.

Balfour, J. E., and N. O'Rourke. "Older adults with Alzheimer disease, comorbid arthritis and prescription of psychotropic medications." *Pain Research & Management*. 8, no. 4(2003): 198-204 UI 14679414.

OBJECTIVES: It is assumed that analgesia is underutilized among those with Alzheimer disease and that these patients may be inappropriately prescribed neuroleptics and benzodiazepines. The current study examines this assertion. **DESIGN:** For this study, prescription levels of analgesics and psychotropic medications for Alzheimer disease patients with (n=245) and without (n=215) musculoskeletal conditions (i.e., arthritis or rheumatism) are compared. **SETTING:** A national sample of community dwelling and institutionalized older adults was identified from the Canadian Study of Health and Aging (CSHA). **PARTICIPANTS:** Persons from 36 cities and surrounding rural areas over 64 years of age were randomly identified for the CSHA from government health records in all but one province. **MEASUREMENTS:** Prescribed analgesic and psychotropic medications were examined, as well as dementia severity and dementia related behavioural disturbance. **RESULTS:** Less than half of Alzheimer patients with arthritis or rheumatism were treated for pain (ie, 109 of 245 patients); they were also more likely to be prescribed benzodiazepines compared with Alzheimer patients without musculoskeletal conditions (subsequent to initial consideration for analgesia, dementia severity and dementia-related behaviours; $Dchi(2)[Ddf = 1] = 3.97$, $P=0.046$). **CONCLUSIONS:** These findings are in accord with prior research attesting to the undertreatment of pain among older adults. These results can be generalized with greater confidence, given the random composition of the patient sample.

Barron, R. P., et al. "Effect of dexamethasone and dipyrrone on lingual and inferior alveolar nerve hypersensitivity following third molar extractions: preliminary report." *Journal of Orofacial Pain*. 18, no. 1(2004): 62-8 UI 15022536.

AIMS: To study the effect of dexamethazone and dipyrrone on sensory changes in the innervation territories of the inferior alveolar, infraorbital, and lingual nerves caused by third molar extractions. **METHODS:** Fourteen patients (8 men and 6 women) were divided randomly into 2 groups. The first group received dipyrrone preoperatively, while the second group received dipyrrone and dexamethazone preoperatively. All patients in the study received a prophylactic preoperative dose of amoxicillin (500 mg) as well as dipyrrone postoperatively. In all patients, a single mandibular third molar was removed, while in 2 patients the contralateral third molar was removed at a subsequent time. Electrical detection thresholds were assessed in the inferior alveolar, lingual, and infraorbital nerve regions prior to surgery and 2 and 8 days following surgery. The level of perioperative pain, difficulty of extraction, and distance of molar root apices from the inferior alveolar nerve canal were also assessed. **RESULTS:** Patients who received only dipyrrone had significantly reduced lingual and inferior alveolar nerve electrical detection thresholds 2 days after surgery, which returned to nearly baseline values by the eighth day postoperatively. In patients who received dexamethasone, no significant reduction in the electrical detection threshold was found. **CONCLUSION:** Preoperative treatment with dexamethasone and dipyrrone but not dipyrrone alone prevents sensory hypersensitivity following third molar extraction.

Bavry, A. A., et al. "Invasive therapy along with glycoprotein IIb/IIIa inhibitors and intracoronary stents improves survival in non-ST-segment elevation acute coronary syndromes: a meta-analysis and review of the literature." *American Journal of Cardiology*. 93, no. 7(2004): 830-5 UI 15050484.

Current evidence suggests that routine invasive therapy in the setting of unstable angina/non-ST-segment elevation myocardial infarction (UA/NSTEMI) reduces the incidence of composite end points (i.e., death, myocardial infarction, or angina.). The 2002 American College of Cardiology/American Heart Association guidelines recommend invasive therapy in high-risk patients, although it is unknown if such an approach improves survival. We conducted a meta-analysis on 5 studies in 6,766 UA/NSTEMI patients who were randomized to either routine invasive versus conservative therapy in the era of glycoprotein IIb/IIIa inhibitors and intracoronary stents. Compared with conservative therapy, an invasive approach suggested a reduction in mortality at 6 to 12 months (risk ratio [RR] 0.80, 95% confidence interval [CI] 0.63 to 1.03) and at 24 months (RR 0.77, 95% CI 0.60 to 0.99). The composite end point of death or myocardial infarction was reduced throughout all periods of follow-up: at 30 days (RR 0.61, 95% CI 0.45 to 0.84), at 6 months (RR 0.75, 95% CI 0.63 to 0.89), and at 12 months (RR 0.78, 95% CI 0.65 to 0.92). For the same composite end point at 6 to 12 months, men benefited from invasive therapy (RR 0.68, 95% CI 0.57 to 0.81), as did troponin-positive patients (RR 0.74, 95% CI 0.59 to 0.94). The results for women (RR 1.07, 95% CI 0.82 to 1.41) and troponin-negative patients (RR 0.82, 95% CI 0.59 to 1.14) were equivocal. Routine invasive therapy in UA/NSTEMI patients along with adjunctive use of glycoprotein IIb/IIIa inhibitors and intracoronary stents improves survival. Enhanced risk stratification is needed in women and troponin-negative patients so that invasive therapy may be more effectively recommended in these groups. [References: 28]

Beaulieu, M. D., et al. "Drug treatment of stable angina pectoris and mass dissemination of therapeutic guidelines: a randomized controlled trial." *Qjm*. 97, no. 1(2004): 21-31 UI 14702508.

BACKGROUND: Public agencies responsible for implementing health care policies often adapt and disseminate clinical practice guidelines, but the effectiveness of mass dissemination of guidelines is unknown. **Aim:** To study the effects of guideline dissemination on physicians' prescribing practices for the treatment of stable angina pectoris. **DESIGN:** Randomized controlled trial. **METHODS:** A sample of 3293 Quebec physicians were randomly assigned to receive a one-page summary of clinical practice guidelines on the treatment of stable angina (in February 1999), to receive the summary and a reminder (in February and March 1999, respectively), or to receive no intervention (controls). The prescribing profiles of participants, as well as sociodemographic characteristics of the physicians and their patients, were examined for June-December 1999. **RESULTS:** The intervention had no effect on prescription rates of beta-blockers, antiplatelet agents, or hypolipemic drugs. Compared to 1997 data for the same physicians, there was an overall 10% increase in appropriate prescription rates, irrespective of the intervention. **DISCUSSION:** In-house production and dissemination of clinical practice guidelines may not improve physicians' practice patterns if there is pre-existing substantial scientific consensus on the issue.

Ben-David, B., K. Schmalenberger, and J. E. Chelly. "Analgesia after total knee arthroplasty: is continuous sciatic blockade needed in addition to continuous femoral blockade?" *Anesthesia & Analgesia*. 98, no. 3(2004): 747-9, table of contents UI 14980931.

Continuous femoral "3-in-1" nerve blocks are commonly used for analgesia after total knee arthroplasty (TKA). There are conflicting data as to whether additional sciatic blockade is needed. Our routine use of both continuous femoral (CFI) and sciatic (CSI) peripheral nerve blocks was changed because of concerns that sciatic blockade, and its motor consequences in particular, might obscure diagnosis of perioperative sciatic nerve injury. The revised protocol includes placing single-shot blocks and perineural catheters at both sites, but infusing local anesthetic postoperatively only in the CFI. CSI is reserved for patients having poorly controlled posterior knee or calf pain. A sample group of 12 patients treated with this protocol was followed. Ten of 12 patients required use of the CSI. Within 1 h of a 5-10 mL CSI bolus of 0.2% ropivacaine and beginning an infusion of the same drug at 5 mL/h, patients' median pain by verbal analog scale decreased from 7.5 to 2.0 (mean scores from 7.3 to 2.4). It was possible to maintain this level of analgesia until the third postoperative day when catheters were discontinued. Our experience suggests that, in most patients, adequate analgesia after TKA cannot be achieved with CFI alone and that the addition of CSI renders a significant improvement in analgesia. **IMPLICATIONS:** A child with neurofibromatosis, scoliosis, and a chest wall deformity presenting for spinal fusion developed severe hypotension while prone. This was due to compression of the heart by the sternum, not compression of the great vessels by neurofibromas. Sternal pressure in prone patients with chest wall deformities

should be avoided. Unique management included the use of transesophageal echocardiography to determine the cause of the hypotension.

Benedetto, A. V. "A novel use of topical anesthetics to alleviate the pain of cryotherapy." *Skinmed.* 2, no. 5(2003): 307-8 UI 14673264.

Bennett, M. I., and K. H. Simpson. "Gabapentin in the treatment of neuropathic pain." *Palliative Medicine.* 18, no. 1(2004): 5-11 UI 14982201.

This paper reviews the pharmacology and clinical effectiveness of gabapentin in the treatment of neuropathic pain. Gabapentin has antihyperalgesic and antiallodynic properties but does not have significant actions as an anti-nociceptive agent. Its mechanisms of action appear to be a complex synergy between increased GABA synthesis, non-NMDA receptor antagonism and binding to the alpha2delta subunit of voltage dependent calcium channels. The latter action inhibits the release of excitatory neurotransmitters. Clinically, several large randomized controlled trials have demonstrated its effectiveness in the treatment of a variety of neuropathic pain syndromes. Patients with neuropathic pain can expect a mean reduction in pain score of 2.05 points on an 11 point numerical rating scale compared with a reduction of 0.94 points if they had taken the placebo. Around 30% of patients can expect to achieve more than 50% pain relief and a similar number will also experience minor adverse events; the most common of which are somnolence and dizziness. In patients with neuropathic pain due to cancer, higher response rates might be observed with gabapentin when administered with opioids because of a synergistic interaction. [References: 57]

Blum, M., et al. "Examination of gender bias in the evaluation and treatment of angina pectoris by cardiologists." *American Journal of Cardiology.* 93, no. 6(2004): 765-7 UI 15019889.

One hundred fifty-eight patients (76 men and 82 women) presenting to an outpatient cardiology clinic with a new complaint of angina were prospectively followed to determine if there was a gender bias in the management of suspected coronary artery disease when physicians trained in cardiology managed their care. Overall, there were no differences in the percentage of women who underwent noninvasive evaluation, invasive evaluation, and treatment of suspected coronary artery disease compared with men.

Borsook, D. "Pain: the past, present and future." *Advanced Drug Delivery Reviews.* 55, no. 8(2003): 931-4 UI 12935937.

Bostrom, B., et al. "Cancer-related pain in palliative care: patients' perceptions of pain management." *Journal of Advanced Nursing.* 45, no. 4(2004): 410-9 UI 14756835.

BACKGROUND: Pain is still a significant problem for many patients with cancer, despite numerous, clear and concise guidelines for the treatment of cancer-related pain. The impact of pain cognition on patients' experiences of cancer-related pain remains relatively unexplored. AIM: The aim of this study was to describe how patients with cancer-related pain in palliative care perceive the management of their pain. METHOD: Thirty patients were strategically selected for interviews with open-ended questions, designed to explore the pain and pain management related to their cancer. The interviews were analysed using a phenomenographic approach. FINDINGS: Patients described 10 different perceptions of pain and pain management summarized in the three categories: communication, planning and trust. In terms of communication, patients expressed a need for an open and honest dialogue with health care professionals about all problems concerning pain. Patients expressed an urgent need for planning of their pain treatment including all caring activities around them. When they felt trust in the health care organization as a whole, and in nurses and physicians in particular, they described improved ability and willingness to participate in pain management. While the findings are limited to patients in palliative care, questions are raised about others with cancer-related pain without access to a palliative care team. CONCLUSION: The opportunity for patients to discuss pain and its treatment seems to have occurred late in the course of disease, mostly not until coming in contact with a palliative care team. They expressed a wish to be pain-free, or attain as much pain relief as possible, with as few side effects as possible.

Bowen, G., E. R. Viscusi, and A. Andonakakis. "Spinal agents for acute pain management." *Current Pain & Headache Reports.* 8, no. 1(2004): 29-33 UI 14731380.

This article describes the current and investigational agents for use in the treatment of acute pain. The use of spinal and epidural routes also are discussed. [References: 40]

Bowyer, J., et al. "The subjective experience of early postoperative pain following retrobulbar anaesthesia for enucleation and primary orbital implant." *Orbit*. 22, no. 4(2003): 271-7 UI 14685901.

INTRODUCTION: We performed a prospective audit of the level of postoperative pain experienced by patients following enucleation with insertion of a primary orbital implant after preincisional regional retrobulbar anaesthesia using bupivacaine 0.75% with 1:100,000 adrenaline. **MATERIALS AND METHODS:** An 11-point numerical ranking box scale was used to measure the subjective experience of postoperative pain following enucleation with insertion of a primary orbital implant in 40 patients with uveal melanoma. Surgery was performed under general anaesthesia with a supplementary peroperative retrobulbar injection of bupivacaine 0.75%/adrenaline 1:100,000. Pain scores were measured for the first 8 hours following administration of the block. **RESULTS:** The sample included 19 female and 21 male patients with a mean age of 66.7 years (31-87). At four hours post block, 80% were still pain free with 17% experiencing only mild to moderate pain (BS-11 = 1-4). Thirty-four (85%), twenty-eight (70%) and twenty-seven (67%) patients remained pain free at 2, 3 and 4 hours, respectively with no additional analgesia. The remainder scored BS-11 of 1-4 in 92% of cases. Twenty percent required supplementary analgesia (paracetamol in 78% cases) by 5 hours and 57% by 8 hours. BS-11 at 8 hours were 0 in 50%, 1-4 in 22% and 5-10 in 10% of patients (17% asleep). No complications using this technique were recorded. **DISCUSSION:** Using a preincisional retrobulbar injection of bupivacaine with adrenaline, BS-11 pain scores remained low with no or minimal additional analgesia for up to 4 hours post surgery. In combination with oral analgesia, effective pain control was provided in most cases for up to 8 hours post block.

Bozic, K. J., and H. E. Rubash. "The painful total hip replacement." *Clinical Orthopaedics & Related Research*, no. 420(2004): 18-25 UI 15057074.

Total hip replacement is one of the most common and successful orthopaedic procedures. However, evaluation and treatment of the painful total hip replacement is one of the most difficult challenges for the arthroplasty surgeon. The differential diagnosis includes causes that are intrinsic and extrinsic to the hip. A thorough history and physical examination provide the basis for a focused, efficient workup of the painful total hip replacement. The temporal onset, duration, severity, site, and character of the pain all provide important clues in determining the cause of the painful total hip replacement. The physical examination should focus on tests and maneuvers that reproduce the patient's symptoms. Laboratory tests and radiographic evaluation are used selectively as indicated by the history and physical examination findings. With a careful and thorough evaluation, the cause of the painful total hip replacement can be determined in most patients, and the appropriate treatment can be initiated. [References: 46]

Broadman, L. M., Y. A. Navalgund, and D. W. Hawkinberry, 2nd. "Radiation risk management during fluoroscopy for interventional pain medicine physicians." *Current Pain & Headache Reports*. 8, no. 1(2004): 49-55 UI 14731383.

Because of serious radiographic-induced skin injuries that may have been caused by the inappropriate use of fluoroscopy during the performance of radiograph-guided invasive procedures, the US Food and Drug Administration (FDA) issued an advisory in 1994 suggesting that the key to preventing such unfortunate mishaps may be physician education, training, and credentialing in the safe operation of fluoroscopic equipment. The purpose of this article is to familiarize the interventional pain medicine physician with the physics of ionizing radiation and how to limit patient exposure through the optimum setting of tube current and voltage, the use of limited beam-on time, tight collimation, and the elimination of the nonessential use of the magnification mode on a fluoroscopy unit. In addition, the use of personal protection equipment and the knowledge needed to interpret the personal exposure record of each practitioner is discussed. All of this information will assist the interventional pain medicine physician in meeting the recommended FDA training and credentialing requirements.

Brouwer, S., et al. "Test-retest reliability of the Isernhagen Work Systems Functional Capacity Evaluation in patients with chronic low back pain." *Journal of Occupational Rehabilitation*. 13, no. 4(2003): 207-18 UI 14671986.

The aim of this study was to investigate test-retest reliability of the Isernhagen Work System Functional Capacity Evaluation (IWS FCE) in a sample of patients (n = 30) suffering from Chronic Low Back Pain (CLBP) and selected for rehabilitation treatment. The IWS FCE consists of 28 tests that reflect work-related activities like lifting, carrying, bending, etc. In this study, a slightly modified IWS FCE was used. Patients were included in the study if they were still at work or were less than 1 year out of work because of CLBP. Participants' mean age was 40 years, the duration of low back pain ranged between 5 and 10 years. Fifteen patients (50%) were out of work for a mean of 17 weeks, and they all received financial compensation. Two FCE sessions were held with a 2-week interval in between. Means per session, 95% confidence intervals of the mean difference, one-way random Intra Class Correlations (ICC), limits of agreement, Cohen's kappa and percentage of absolute agreement were calculated where appropriate. An ICC of 0.75 or more, a kappa value of more than 0.60 and a percentage of absolute agreement of 80% were considered as an acceptable reliability. Tests of the IWC FCE were divided into tests with and tests without an acceptable test-retest reliability on the basis of the kappa values, the percentage of absolute agreement and the ICC values. Fifteen tests (79%) showed an acceptable test-retest reliability based on Kappa values and percentage of absolute agreement. Eleven tests (61%) showed an acceptable test-retest reliability based on ICC values.

Bruce, J., et al. "Quantitative assessment of chronic postsurgical pain using the McGill Pain Questionnaire." *Clinical Journal of Pain*. 20, no. 2(2004): 70-5 UI 14770045.

OBJECTIVES: The McGill Pain Questionnaire (MPQ) provides a quantitative profile of 3 major psychologic dimensions of pain: sensory-discriminative, motivational-affective, and cognitive-evaluative. Although the MPQ is frequently used as a pain measurement tool, no studies to date have compared the characteristics of chronic post-surgical pain after different surgical procedures using a quantitative scoring method. **METHODS:** Three separate questionnaire surveys were administered to patients who had undergone surgery at different time points between 1990 and 2000. Surgical procedures selected were mastectomy (n = 511 patients), inguinal hernia repair (n = 351 patients), and cardiac surgery via a central chest wound with or without saphenous vein harvesting (n = 1348 patients). A standard questionnaire format with the MPQ was used for each survey. The IASP definition of chronic pain, continuously or intermittently for longer than 3 months, was used with other criteria for pain location. The type of chronic pain was compared between the surgical populations using 3 different analytical methods: the Pain Rating Intensity score using scale values, (PRI-S); the Pain Rating Intensity using weighted rank values multiplied by scale value (PRI-R); and number of words chosen (NWC). **RESULTS:** The prevalence of chronic pain after mastectomy, inguinal herniorrhaphy, and median sternotomy with or without saphenectomy was 43%, 30%, and 39% respectively. Chronic pain most frequently reported was sensory-discriminative in quality with similar proportions across different surgical sites. Average PRI-S values after mastectomy, hernia repair, sternotomy (without postoperative anginal symptoms), and saphenectomy were 14.06, 13.00, 12.03, and 8.06 respectively. Analysis was conducted on cardiac patients who reported anginal symptoms with chronic post-surgical pain (PRI-S value 14.28). Patients with moderate and severe pain were more likely to choose more than 10 pain descriptors, regardless of the operative site (P < 0.05). **DISCUSSION:** The prevalence and characteristics of chronic pain was remarkably similar across different operative groups. This study is the first to quantitatively compare chronic post-surgical pain using similar methodologies in heterogeneous post-surgical populations.

Buchbinder, R., et al. "Arthrographic joint distension with saline and steroid improves function and reduces pain in patients with painful stiff shoulder: results of a randomised, double blind, placebo controlled trial." *Annals of the Rheumatic Diseases*. 63, no. 3(2004): 302-9 UI 14962967.

OBJECTIVE: To determine whether arthrographic distension with a mixture of saline and steroid, in patients with painful stiff shoulder for at least 3 months, is better than placebo in improving function, pain, and range of motion at 3, 6, and 12 weeks. **METHODS:** A randomised, placebo controlled trial with participant and outcome assessor blinding in which shoulder joint distension with normal saline and corticosteroid was compared with placebo (arthrogram). Outcome measures, assessed at 3, 6, and 12 weeks, included a shoulder-specific disability measure (SPADI), a patient preference measure (Problem Elicitation Technique (PET)), pain, and range of active motion. **RESULTS:** From 96 potential participants, 48 were recruited. Four withdrew from the placebo group after the 3 week assessment and three subsequently received arthrographic distension with saline and steroid. At 3 weeks,

significantly greater improvement in SPADI ($p = 0.005$), PET, overall pain, active total shoulder abduction, and hand behind back was found in participants in the joint distension and steroid group than in the placebo group. At 6 weeks the results of the intention to treat analysis favoured joint distension, although the between-group differences were only significant for improvement in PET (difference in mean change in PET between groups = 45.9 (95% CI 3.2 to 88.7). Excluding the four withdrawals, the between-group differences for the disability and pain measures significantly favoured distension over placebo. At 12 weeks, both the intention to treat analysis and an analysis excluding the four withdrawals demonstrated a significantly greater improvement in PET score for the distension group. CONCLUSIONS: Short term efficacy of arthrographic distension with normal saline and corticosteroid over placebo was demonstrated in patients with painful stiff shoulder.

Cahana, A., et al. "The role of interventional pain management in chronic pain." *Journal of Anesthesia*. 18, no. 1(2004): 29-35 UI 14991472.

Calabrese, L. H. "A headache and a mass lesion: vasculitis or CNS sarcoid?" *Clinical & Experimental Rheumatology*. 21, no. 6 Suppl 32(2003): S131-2 UI 14740441.

Camenzind, E., et al. "Site-specific intracoronary delivery of octreotide in humans: a pharmacokinetic study to determine dose-efficacy in restenosis prevention." *Journal of Cardiovascular Pharmacology*. 43, no. 1(2004): 133-9 UI 14668579.

Somatostatin analogues have been shown to inhibit smooth muscle cell proliferation after local administration in vivo in animal models and in vitro using human coronary smooth muscle cell cultures. However, the optimal dosage for attaining effective site-specific administration remains undefined. This study was performed to determine the required theoretical dose of the somatostatin analogue, octreotide, to be delivered site specifically, for prevention of restenosis after coronary angioplasty in humans using a previously described methodology to determine regional pharmacokinetics of site-specific intracoronary administered compounds. In 7 patients, ^{111}In -octreotide, a gamma-labeled somatostatin analogue, was infused post angioplasty at the site of dilatation via a coil-balloon and quantified using a radio-isotopic technique. Efficiency of delivery ranged from 0.1% to 2.7% of the total infused dose of 0.18 microg, corresponding to a mean peak delivered amount of 1.8 +/- 1.9 ng. Total locally bioavailable ^{111}In -octreotide reached 2.28 +/- 2.15 ng h. Based on current in vitro bioavailability and peak concentration data to inhibit proliferation and thymidine incorporation in human coronary smooth muscle cells, a 4000x higher averaged dose (approximately 700 microg) should be infused site specifically to obtain a biologic efficacy in 50% of the treated patients (ED50). Quantification of regional pharmacokinetics enables the determination of a theoretical site-specific dose for achieving appropriate bioavailability above the therapeutic threshold concentration for smooth muscle cell inhibition. This approach is proposed for the determination of the appropriate site-specific coronary infusion dose for the inhibition of restenosis after balloon angioplasty.

Cannon, C. P., et al. "Intensive versus moderate lipid lowering with statins after acute coronary syndromes.[see comment]." *New England Journal of Medicine*. 350, no. 15(2004): 1495-504 UI 15007110.

BACKGROUND: Lipid-lowering therapy with statins reduces the risk of cardiovascular events, but the optimal level of low-density lipoprotein (LDL) cholesterol is unclear. METHODS: We enrolled 4162 patients who had been hospitalized for an acute coronary syndrome within the preceding 10 days and compared 40 mg of pravastatin daily (standard therapy) with 80 mg of atorvastatin daily (intensive therapy). The primary end point was a composite of death from any cause, myocardial infarction, documented unstable angina requiring rehospitalization, revascularization (performed at least 30 days after randomization), and stroke. The study was designed to establish the noninferiority of pravastatin as compared with atorvastatin with respect to the time to an end-point event. Follow-up lasted 18 to 36 months (mean, 24). RESULTS: The median LDL cholesterol level achieved during treatment was 95 mg per deciliter (2.46 mmol per liter) in the standard-dose pravastatin group and 62 mg per deciliter (1.60 mmol per liter) in the high-dose atorvastatin group ($P < 0.001$). Kaplan-Meier estimates of the rates of the primary end point at two years were 26.3 percent in the pravastatin group and 22.4 percent in the atorvastatin group, reflecting a 16 percent reduction in the hazard ratio in favor of atorvastatin ($P = 0.005$; 95 percent confidence interval, 5 to 26 percent). The study did not meet the prespecified criterion for equivalence but did identify the superiority of the more intensive regimen. CONCLUSIONS: Among patients who have recently

had an acute coronary syndrome, an intensive lipid-lowering statin regimen provides greater protection against death or major cardiovascular events than does a standard regimen. These findings indicate that such patients benefit from early and continued lowering of LDL cholesterol to levels substantially below current target levels. Copyright 2004 Massachusetts Medical Society

Caprino, P., et al. "Acute abdomen from omental volvulus." *American Journal of Surgery*. 187, no. 2(2004): 268-9 UI 14769317.

Cassisi, J. E., et al. "Patterns of pain descriptor usage in African Americans and European Americans with chronic pain." *Cultural Diversity & Ethnic Minority Psychology*. 10, no. 1(2004): 81-9 UI 14992632.

This study examined ethnic differences in the use of pain descriptors, comparing standardized pain assessment data from African American and European American patients with heterogeneous chronic pain syndromes. The measure was the Short-Form McGill Pain Questionnaire (SF-MPQ) including the embedded Visual Analog Scale (VAS). Exploratory factor analyses of SF-MPQ data identified differences in factor structure with the VAS loading on a different factor for each group. A 5-factor solution was obtained from the African American group and a 4-factor solution was obtained from the European American group. There was little overlap in the pattern matrices for African American and European American groups. Results suggest that the VAS is as sensitive to ethnic differences as other traditional pain measures.

Cata, J. P., et al. "Spinal cord stimulation relieves chemotherapy-induced pain: a clinical case report." *Journal of Pain & Symptom Management*. 27, no. 1(2004): 72-8 UI 14711471.

We present two patients with chemotherapy-induced painful neuropathy that had been poorly controlled with medications but successfully treated with spinal cord stimulation (SCS). A trial period of SCS provided effective pain relief in both patients who subsequently underwent permanent stimulator implantation. Psychophysical tests were performed before and after the implantation of trial and permanent stimulators. SCS improved pain scores and facilitated a reduction of medications. Both patients reported improved gait and one of them also reported an increase in leg flexibility. Psychophysical tests demonstrated an improvement in touch and sharpness detection thresholds. In summary, SCS offers a therapeutic option for patients with chemotherapy-induced peripheral neuropathy who have poor pain relief with standard medical treatment.

Chapuis, O., et al. "Thoracoscopic renal denervation for intractable autosomal dominant polycystic kidney disease-related pain." *American Journal of Kidney Diseases*. 43, no. 1(2004): 161-3 UI 14712440.

The authors report a case of intractable autosomal dominant polycystic kidney disease-related pain associated with normal renal function, treated with renal denervation. Renal denervation was performed via a thoracoscopic approach. The good medium-term result suggests that thoracoscopic symptho-splanchnicectomy would be an attractive procedure for pain management in autosomal polycystic kidney disease.

Cherng, C. H., and C. S. Wong. "Pressure sore induced by epidural catheter in a patient receiving postoperative pain control." *Regional Anesthesia & Pain Medicine*. 28, no. 6(2003): 580 UI 14679993.

Cohen, J. E., et al. "Percutaneous vertebroplasty: technique and results in 192 procedures." *Neurological Research*. 26, no. 1(2004): 41-9 UI 14977056.

Percutaneous vertebroplasty with acrylic cement (usually polymethylmethacrylate) consists of injecting cement into vertebral bodies weakened by osseous lesions. The objective of this procedure is to obtain an analgesic effect by mechanical stabilization in destructive lesions of the spine. The three major indications are aggressive vertebral hemangiomas, severe or refractory pain related to osteoporotic vertebral fractures, and malignant vertebral tumors. Complications are infrequent, but occur essentially in patients with vertebral malignant tumors. We present our experience with 148 patients that underwent 192 percutaneous PMMA vertebroplasties for the treatment of painful osteoporotic compression fractures (76 patients, 105 vertebral levels), hemangiomas (31 patients, 43 vertebral levels) and neoplasms (31 patients, 43 vertebral levels). In a vast majority of appropriately selected cases and especially

in osteoporotic cases, vertebroplasty constitutes a relatively simple procedure with a very high rate of success.

Collett, B. J. "The current state of pain management." *Hospital Medicine (London)*. 65, no. 2(2004): 70-1 UI 14997770.

Collins, S. "Putative therapeutic targets in the treatment of visceral hyperalgesia." *Gut*. 53, no. Suppl 2(2004): ii19-21 UI 14960554.

The management of abdominal pain remains a major challenge for clinicians despite an explosion of knowledge regarding the physiology and pathophysiology of sensory neural circuits. Initial progress was made in the field of somatic pain and this provided broad hypotheses that could be tested in the field of visceral pain. The major advances in our understanding of basic mechanisms underlying visceral pain originated in the urinary tract and have been applied to the gut. As yet, this increased understanding of enteric sensory physiology has yet to generate new effective treatments for abdominal pain. This review addresses novel insights into peripheral mechanisms underlying visceral hyperalgesia and their applicability to the development of novel therapeutic approaches to the treatment of chronic abdominal pain. [References: 27]

Conti, C. R. "Do you need demonstrable ischemia for evidence-based decision-making in chronic stable angina?" *Clinical Cardiology*. 26, no. 12(2003): 553-4 UI 14677807.

Cowan, D. T., A. While, and P. Griffiths. "Use of strong opioids for non-cancer pain in the community: a case study." *British Journal of Community Nursing*. 9, no. 2(2004): 53-8 UI 15007281.

The continued extension of prescribing rights among nurses may necessitate that effective pain management will require more involvement of nurses in the prescription of controlled drugs. The prescription of strong opioid analgesic drugs for chronic non-cancer pain (CNCP) is viewed as controversial. Misconceptions about opioid drugs fuel this controversy. This case study highlights the knowledge gap that exists between pain and addiction medicine and highlights the problems that CNCP patients treated in the community with opioid therapy may encounter. Community nurses are in an ideal position to be instrumental in identifying such vulnerable patients and ensuring that appropriate interventions are available.

Cowan, D. T., et al. "A survey of chronic noncancer pain patients prescribed opioid analgesics." *Pain Medicine*. 4, no. 4(2003): 340-51 UI 14750910.

OBJECTIVES: Opioid analgesic drugs are sometimes advocated for chronic noncancer pain (CNCP). However, due to the paucity of studies assessing problematic opioid drug use in this population, evidence for such is inconclusive, and this issue remains controversial. This survey assessed problematic drug use among CNCP patients. PATIENTS/SETTING: Patients (N=104) prescribed opioids (mean duration of treatment 14.1 months) for severe CNCP at a pain clinic within a National Health Service hospital in London, United Kingdom. DESIGN: A review of pain clinic records to identify CNCP patients who had been prescribed opioids and subsequent assessment of those patients for problematic drug use using a substance use questionnaire. RESULTS: A total of 90 (86.5%) patients reported stopping opioid therapy at some point and, of these, 59 (65%) had ceased opioid therapy permanently. Of those patients who stopped opioids, 13 reported opioid withdrawal symptoms, two with severe and two with very severe symptoms. However, 72.5% of all patients derived benefit from opioids, although 77% of all patients reported opioid side effects. The addiction rate was 2.8%. CONCLUSION: These findings indicate that opioid therapy for CNCP does not necessarily lead to problematic drug use. Some problematic side effects are likely to be surmountable through appropriate prescribing. Further research is required into the long-term use of opioids in CNCP.

Cruccu, G., et al. "EFNS guidelines on neuropathic pain assessment." *European Journal of Neurology*. 11, no. 3(2004): 153-62 UI 15009162.

In September 2001, a Task Force was set up under the auspices of the European Federation of Neurological Societies with the aim of evaluating the existing evidence about the methods of assessing neuropathic pain and its treatments. This review led to the development of guidelines to be used in the management of patients with neuropathic pain. In the clinical setting a neurological examination that includes an accurate sensory examination is often sufficient to reach a diagnosis. Nerve conduction studies and somatosensory-evoked potentials, which do not assess small fibre function, may demonstrate and localize a peripheral

or central nervous lesion. A quantitative assessment of the nociceptive pathways is provided by quantitative sensory testing and laser-evoked potentials. To evaluate treatment efficacy in a patient and in controlled trials, the simplest psychometric scales and quality of life measures are probably the best methods. A laboratory measure of pain that by-passes the subjective report, and thus cognitive influences, is a hopeful aim for the future.

Dalton, J. A., et al. "Tailoring cognitive-behavioral treatment for cancer pain." *Pain Management Nursing*. 5, no. 1(2004): 3-18 UI 14999649.

Though it has been shown that cancer patients report cognitive, behavioral, and physiologic responses to pain, little attention has been paid to the benefits of cognitive-behavioral therapy (CBT) protocols tailored to patient characteristics. To determine whether a profile-tailored CBT treatment program was more effective than either standard CBT or usual care in changing outcomes for patients with cancer-related pain, 131 patients receiving treatment at four sites were randomly assigned to standard CBT, profile-tailored CBT, or usual care. CBT patients attended five 50-minute treatment sessions. When compared to standard CBT patients, profile-tailored CBT patients experienced substantial improvement from baseline to immediately post-intervention in worst pain, least pain, less interference of pain with sleep, and less confusion. From baseline to one-month post-intervention, profile-tailored patients saw greater improvement in less interference of pain with activities, walking, relationships, and sleep; less composite pain interference; and less mobility and confusion symptom distress. Standard CBT and usual care patients experienced little change. Compared to profile-tailored CBT patients, standard CBT patients showed greater improvement at six-months post-intervention with less average pain, less pain now, better bowel patterns, lower summary symptom distress, better mental quality of life, and greater improvement in Karnofsky performance status; usual care patients showed little change. More research is needed to refine the matching of cognitive-behavioral treatments to psychophysiologic patient profiles, and to determine a treatment period that does not burden those patients too fatigued to participate in a five-week program. Delivery of CBT by home visits, phone, or Internet needs to be explored further.

Davidhizar, R., and J. N. Giger. "A review of the literature on care of clients in pain who are culturally diverse." *International Nursing Review*. 51, no. 1(2004): 47-55 UI 14764014.

AIM: This article reviews the literature on the care of clients from diverse cultures who are in pain and provides strategies for care. BACKGROUND: Pain is a critical concept for caring for clients and particularly for clients from another culture. Culture shapes the values, beliefs, norms, and practices of individuals, including the ways persons react to pain. Culture affects the assessment and management of pain. CONCLUSIONS: Seven strategies can assist in culturally appropriate assessment and management of pain: (1) utilize assessment tools to assist in measuring pain, (2) appreciate variations in affective response to pain, (3) be sensitive to variations in communication styles, (4) recognize that communication of pain may not be acceptable within a culture, (5) appreciate that the meaning of pain varies between cultures, (6) utilize knowledge of biological variations, and (7) develop personal awareness of values and beliefs which may affect responses to pain. [References: 58]

Davis, M. P. "Acute pain in advanced cancer: an opioid dosing strategy and illustration." *American Journal of Hospice & Palliative Care*. 21, no. 1(2004): 47-50 UI 14748523.

Opioid dosing strategies for acute pain differ from strategies for chronic pain management. The basic principles of effective, safe dosing are rapid titration to the onset of analgesia followed by maintenance infusions based upon the titrated dose. This article presents guidelines and case histories for safe and effective dosing.

Davis, M. P., and D. Walsh. "Epidemiology of cancer pain and factors influencing poor pain control." *American Journal of Hospice & Palliative Care*. 21, no. 2(2004): 137-42 UI 15055515.

Pain is one of the most commonly experienced and feared symptoms of advanced cancer. Most cancer patients experience pain, usually of moderate to severe intensity, and most also have a number of distinct pains. The most common type of pain is related to bone metastases. Neuropathic pain occurs in one-third of patients, alone, or as a mix of nociceptive and neuropathic pain. The failure to manage pain properly is due to several factors. In developing countries, it is likely to be related to geography and limited resources. Legal restrictions also present barriers. In developed countries, failure to manage pain properly is usually related to a "disease" rather than a "symptom" model of care, which minimizes symptom management.

Other factors include lack of physician education and failure to follow existing guidelines. Patients fear addiction, drug tolerance, and side effects. Despite adequate resources, pain is still undertreated. [References: 61]

Dekel, R., et al. "Evaluation of symptom index in identifying gastroesophageal reflux disease-related noncardiac chest pain.[see comment]." *Journal of Clinical Gastroenterology*. 38, no. 1(2004): 24-9 UI 14679323.

BACKGROUND: Symptom index (SI), which represents the percentage of perceived gastroesophageal reflux-related symptoms that correlate with esophageal acid reflux events (pH <4), has been suggested as a measure to improve diagnosis of gastroesophageal reflux (GER)-related noncardiac chest pain (NCCP). Because no study has evaluated the value of the symptom index in NCCP patients, data to support this claim have yet to be elucidated. **AIM:** To evaluate the value of SI in identifying gastroesophageal reflux disease (GERD)-related NCCP patients. **METHODS:** Patients enrolled in this study were referred by a cardiologist after a comprehensive work-up excluded a cardiac cause for their chest pain. All patients underwent upper endoscopy to determine esophageal inflammation and 24-hour esophageal pH monitoring to assess esophageal acid exposure. Patients were instructed to record all chest pain episodes during the pH test. Patients with a positive SI (> or =50%) underwent the proton pump inhibitors (PPI) test, which is a therapeutic trial using a short course of high dose PPI. **RESULTS:** A total of 94 patients with NCCP were included in this study. Forty-seven (50%) had either a positive upper endoscopy or an abnormal pH test and were considered GERD-Positive. Forty-seven patients (50%) had both tests negative and were considered GERD-Negative. Total number of reflux episodes and percent total, supine and upright time pH less than 4, were significantly higher in the GERD-Positive group as compared with the GERD-Negative group (P < 0.0001, P < 0.0001, P = 0.0045, and P < 0.0001 respectively). Only 9 (19.1%) patients in the GERD-Positive group and 5 (10.6%) patients in the GERD-Negative group had a positive SI (p = ns). Eight (89%) out of the 9 patients who had a positive SI in the GERD-Positive group and 2 (40%) out of 5 patients in the GERD-Negative group responded to the PPI test. **CONCLUSION:** Positive SI is relatively uncommon in NCCP patients, regardless if GERD is present or absent. Hence, symptom index provides very little improvement in diagnosing GERD-related NCCP.

DeLeo, J. A., F. Y. Tanga, and V. L. Tawfik. "Neuroimmune activation and neuroinflammation in chronic pain and opioid tolerance/hyperalgesia." *Neuroscientist*. 10, no. 1(2004): 40-52 UI 14987447.

One area that has emerged as a promising therapeutic target for the treatment and prevention of chronic pain and opioid tolerance/hyperalgesia is the modulation of the central nervous system (CNS) immunological response that ensues following injury or opioid administration. Broadly defined, central neuroimmune activation involves the activation of cells that interface with the peripheral nervous system and blood. Activation of these cells, as well as parenchymal microglia and astrocytes by injury, opioids, and other stressors, leads to subsequent production of cytokines, cellular adhesion molecules, chemokines, and the expression of surface antigens that enhance a CNS immune cascade. This response can lead to the production of numerous pain mediators that can sensitize and lower the threshold of neuronal firing: the pathologic correlate to central sensitization and chronic pain states. CNS innate immunity and Toll-like receptors, in particular, may be vital players in this orchestrated immune response and may hold the answers to what initiates this complex cascade. The challenge remains in the careful perturbation of injury/opioid-induced neuroimmune activation to down-regulate this process without inhibiting beneficial CNS autoimmunity that subserves neuronal protection following injury. [References: 60]

Devogelaer, J. P., et al. "Guidelines for clinical studies assessing the efficacy of drugs for the management of acute low back pain." *Clinical & Experimental Rheumatology*. 21, no. 6(2003): 691-4 UI 14740445.

In this paper we propose guidelines for clinical trials aimed at assessing the efficacy of drugs for acute non-specific low back pain (LBP) with or without radicular pain, preliminary to their approval and registration. To this end, consensus statements were obtained from a group of experts in the fields of rheumatology, clinical medicine, public health and epidemiology. EBM resources were systematically used as references. Four diagnostic categories were defined: type 1--LBP with no radiation; type 2--LBP radiating no further than the knee; type 3--LBP radiating beyond the knee, but with no neurologic signs; and type 4--LBP radiating to a specific and entire leg dermatome, with or without neurologic signs. Studies should be

designed on the basis of the claimed indications for the drug, but must be double-blinded whatever the indication. The duration of the study may be shorter for LBP type 1 or 2 (one week) than for LBP types 3 and 4 (up to one month), depending on the aim of the study and the indications for the drug. The comparator may be inactive (placebo) or active (for a superiority trial, e.g., versus paracetamol). Specific inclusion and exclusion criteria have been defined here for each category. An appropriate wash-out period for any drugs that could affect the pain status should be planned. Paracetamol may be allowed as rescue medication. The primary endpoint should be based on a validated pain assessment tool that may be either generic (type 1 or 2) or oriented (back and knee for types 3 and 4). Secondary endpoints could include the assessment of functional performance; the duration of any period of bed-rest; work limitation; a global assessment comprising pain at rest, standing and walking; the time elapsed before epidural injection, the prescription of other therapeutic agents, or surgery; and the use of rescue medication. Adverse events (AE) should be monitored systematically using a methodology that reflects the mode of action of the tested drug. With the application of these guidelines, LBP could serve as an appropriate disease for testing analgesic drugs. Rigorous evaluation may also help to improve the management of acute LBP. [References: 13]

Diks, M. J., A. B. Wymenga, and P. G. Anderson. "Patients with lateral tracking patella have better pain relief following CT-guided tuberosity transfer than patients with unstable patella." *Knee Surgery, Sports Traumatology, Arthroscopy*. 11, no. 6(2003): 384-8 UI 14523612.

In patients with either lateral tracking patella or unstable patella the pathological lateral position of the tuberosity can be corrected by a medial transfer. This study compared the results of subtle CT-guided correction of the tuberosity for objective unstable patella (n=27) with the results for lateral tracking patella (potential instability) as described by Dejour (n=16). Follow-up was 37 months. CT revealed a pathological lateralization of the tibial tuberosity-trochlear groove greater than 15 mm in 41 knees. These patients underwent medialization of the tibial tuberosity up to 10-12 mm lateral from the trochlear groove, and 28 patients underwent a distalization to normalize the Caton index to 1.0-1.2. Results were evaluated using Cox' method. Patients with objective patellar instability were rated as 11% excellent, 52% good, 33% fair, and 4% poor. All patients became stable except one who had a 6 degrees valgus alignment. Although 96% had improved stability, 33% of the patients still had pain. The patients with lateral tracking patella (potential instability) were rated as 37.5% excellent, 44% good, and 19% fair. The lower proportion of pain relief in patients with unstable patella is likely the result of the cartilage damage experienced by these patients following multiple dislocations. Thus the patient with lateral tracking patella without patella dislocations must be differentiated from the one with unstable patella. Their prognosis in pain relief is better.

Dilcher, A. J. "Damned if they do, damned if they don't: the need for a comprehensive public policy to address the inadequate management of pain." *Annals of Health Law*. 13, no. 1(2004): 81-144, table of contents UI 15002182.

Amy Dilcher examines the need for a comprehensive pain policy and argues that opioids--highly effective drugs for pain management--should be legally and practicably accessible to medical professionals and their patients, as and when needed to provide relief from pain. The article synthesizes a number of perspectives regarding the regulation of pain management and demonstrates that the inadequate treatment of pain stems from a multitude of barriers. After reviewing Congressional action on the topic, Ms. Dilcher concludes with recommendations for a more comprehensive pain policy that would enhance the management of pain.

Duke, R. "A delicate balance." *Journal of the Arkansas Medical Society*. 100, no. 8(2004): 257-9 UI 14999885.

Dunn, K. S., and A. L. Horgas. "Religious and nonreligious coping in older adults experiencing chronic pain." *Pain Management Nursing*. 5, no. 1(2004): 19-28 UI 14999650.

Chronic pain is a significant problem among older adults. Undertreated or poorly managed pain can affect the physical, psychological, social, emotional, and spiritual well-being of older people. Several researchers have found that individuals turn to a wide array of cognitive and behavioral coping strategies when experiencing high levels of chronic pain. In addition, there is a growing body of evidence that supports an association between health outcomes and the use of religious coping to manage pain. Thus, the purpose of this descriptive, cross-sectional study was to explore the use of religious and nonreligious coping in older people who were

experiencing chronic pain. Specific aims were to (a) describe the chronic pain experiences of older people; (b) examine the frequency and type of religious and nonreligious coping strategies used by older people to manage chronic pain; and (c) determine if there were differences in the use of religious and nonreligious coping across gender and race. Mean age of this convenience sample of 200 community-dwelling adults was 76.36 years (SD = 6.55). On average, study participants reported that their pain was of moderate intensity. Lower extremities were the most frequently reported painful body locations. Findings from this study support prior research that suggests older people report using a repertoire of pharmacologic and nonpharmacologic strategies to manage chronic pain. Older women and older people of minority racial background reported using religious coping strategies to manage their pain more often than did older Caucasian men. Older women also reported using diversion and exercise significantly more often than did older men.

Dyszkiewicz, W., et al. "Simultaneous lung resection for cancer and myocardial revascularization without cardiopulmonary bypass (off-pump coronary artery bypass grafting)." *Annals of Thoracic Surgery*. 77, no. 3(2004): 1023-7 UI 14992919.

BACKGROUND: Patients with resectable lung cancer and unstable coronary heart disease are at high risk of postoperative death or severe cardiovascular complications. The aim of this study was to present the early results of radical lung resection for cancer with simultaneous myocardial revascularization on the beating heart (off-pump coronary artery bypass [OPCAB]). METHODS: From 1999 to 2002, thirteen patients (9 men and 4 women, aged 54 to 71 years, mean age 64 yrs) with resectable lung cancer and unstable angina or a recent history of myocardial infarction, were operated on. All of them underwent coronary angiography and neither coronary angioplasty nor stenting were feasible. Eight lobectomies, three pneumonectomies, and two wedge resections were carried out together with aortocoronary graft implantation (mean number of grafts: 1.7 per patient). Myocardial revascularization without cardiopulmonary bypass (OPCAB) preceded the lung resections. The preferred approach to the heart and lung was by sternotomy. RESULTS: There were no postoperative deaths in this group of patients. The most frequent postoperative complication was prolonged air leakage and one patient required respiratory support for two days. In one patient, significant blood loss was observed with a need for rethoracotomy. Transient supraventricular cardiac arrhythmias occurred in three patients. None of the patients showed evidence of myocardial ischemia after surgery. Patients were followed up for 7 to 36 months. None had acute myocardial infarction. In one patient, who underwent lobectomy, local recurrence was found. In another patient, who underwent pneumonectomy, distant metastases occurred in the third year of observation. CONCLUSIONS: Lung resection carried out simultaneously with OPCAB is a safe and effective method for the treatment of lung cancer and myocardial ischemia.

Emkey, R., et al. "Efficacy and safety of tramadol/acetaminophen tablets (Ultracet) as add-on therapy for osteoarthritis pain in subjects receiving a COX-2 nonsteroidal antiinflammatory drug: a multicenter, randomized, double-blind, placebo-controlled trial.[see comment]." *Journal of Rheumatology*. 31, no. 1(2004): 150-6 UI 14705234.

OBJECTIVE: To evaluate the efficacy and safety of tramadol 37.5 mg/acetaminophen 325 mg combination tablets (tramadol/APAP) as add-on therapy for subjects with osteoarthritis (OA) pain inadequately controlled by COX-2 nonsteroidal antiinflammatory drugs (NSAID). METHODS: This 91-day, multicenter, randomized, double-blind, placebo-controlled trial enrolled subjects with symptomatic OA for ≥ 1 year who experienced at least moderate pain [visual analog scale (VAS) score $\geq 50/100$ mm] despite treatment with stable doses of celecoxib (≥ 200 mg/day) or rofecoxib (≥ 25 mg/day). Tramadol/APAP or matching placebo was titrated to 4 tablets/day on Day 10 and thereafter as needed up to 8 tablets/day. The primary efficacy measure was final VAS score; secondary measures included final pain relief rating scores, subject/investigator overall medication assessments, rate and time to discontinuation due to lack of efficacy, and selected quality-of-life/physical functioning scores. RESULTS: Of 307 subjects randomized, 306 taking celecoxib (56.5%) or rofecoxib (43.5%) were included in the intent-to-treat population (n = 153 tramadol/APAP, 153 placebo). Mean final VAS scores for tramadol/APAP plus COX-2 NSAID were significantly lower than placebo plus COX-2 NSAID (41.5 vs 48.3; p = 0.025) and mean final pain relief rating scores were significantly higher (p = 0.002). Subjects taking tramadol/APAP showed significant improvements compared with placebo in subject/investigator medication assessments, as well as in the WOMAC Physical Function and the Medical Outcome Study Short Form-36 Role-Physical measures. The most common treatment-related adverse events for tramadol/APAP

were somnolence (6.5%), nausea (4.6%), and constipation (3.3%). Mean tramadol/APAP dose was 4.1 tablets (154 mg tramadol/ 1332 mg APAP). CONCLUSION: Tramadol 37.5 mg/APAP 325 mg combination tablets were effective and safe as add-on therapy with COX-2 NSAID for treatment of OA pain.

Epstein, J. B., and M. M. Schubert. "Managing pain in mucositis." *Seminars in Oncology Nursing*. 20, no. 1(2004): 30-7 UI 15038515.

OBJECTIVE: To discuss pharmacologic and nonpharmacologic approaches available to manage pain. DATA SOURCE: Published journal articles, book chapters, clinical experience. CONCLUSION: Pain management requires treatment directed at the various factors involved in the pain experience. IMPLICATIONS FOR NURSING PRACTICE: Nurses need to assess pain daily and follow patients closely until mucositis resolves. Management targeted to specific dimensions of pain can improve the effectiveness of pain control. [References: 68]

Ercelen, O., et al. "Radiofrequency lesioning using two different time modalities for the treatment of lumbar discogenic pain: a randomized trial." *Spine*. 28, no. 17(2003): 1922-7 UI 12973135.

STUDY DESIGN: A prospective randomized trial. OBJECTIVE: To evaluate the efficacy of percutaneous intradiscal radiofrequency thermocoagulation by modifying the duration of heating, using two different time methods, for relieving pain and improving functional disability. SUMMARY OF BACKGROUND DATA: Lumbar discogenic pain is the major problem in lumbar degenerative disc disease that percutaneous intradiscal radiofrequency thermocoagulation has been suggested for as a nonsurgical invasive treatment technique for lumbar discogenic pain. In a previous controlled study, this method was found to be ineffective with 8 weeks of follow-up. MATERIALS AND METHODS: Sixty patients with chronic low back pain were selected for provocative discography to diagnose the discogenic pain and to locate the discs to be treated. From this group, 39 patients were randomly selected and divided into two groups. In the first group, treatment was performed for 120 seconds, and in the second group for 360 seconds, both at 80C. Patients were assessed with a visual analogue scale for pain relief and functional improvement. Evaluations were performed before, immediately after treatment, at 1 and 2 weeks, and at 1, 3, and 6 months after the procedure. RESULTS: A total of 39 patients with positive provocative discographies were found to be eligible for the study. There were no statistical differences in pain relief and functional improvement between two groups ($P > 0.05$). The immediate, 1-week and 2-week, and 1-month visual analogue scale (VAS) scores were decreased significantly in both groups when comparing them with the pretreatment scores ($P < 0.05$). However, the final values after 6 months were similar to those measured at the beginning of the study ($P > 0.05$). CONCLUSION: Percutaneous intradiscal radiofrequency thermocoagulation has been suggested and performed to relieve discogenic pain. In the previous controlled study, no effective pain relief has been obtained. In this study, the authors increased the duration of radiofrequency thermocoagulation to improve the effectiveness of this method. Yet, the authors have not found any significant differences between the application of lesioning at two different times in percutaneous intradiscal radiofrequency thermocoagulation.

Erdek, M. A., and P. J. Pronovost. "Improving assessment and treatment of pain in the critically ill." *International Journal for Quality in Health Care*. 16, no. 1(2004): 59-64 UI 15020561.

OBJECTIVE: Efforts to improve pain assessment and treatment in critically ill patients are poorly studied and represent an opportunity to improve quality of care. We sought to improve pain assessment and treatment in patients in a surgical intensive care unit at an academic medical center. DESIGN: We performed a prospective study of pain assessment and treatment in two surgical intensive care units in 2001. We measured pain assessment as the percentage of 4-h intervals where the patient's pain was measured using a visual analog scale. We measured pain treatment as the percentage of 4-h intervals where the patient's pain score on the scale was $<$ or $=3$. We then implemented four separate "plan-do-study-act" cycles to improve pain assessment and treatment. MAIN OUTCOME MEASURES: We evaluated the percentage of 4-h patient-nursing intervals that were scored numerically pre- and post-intervention. We evaluated the percentage of 4-h patient-nursing intervals where the patients had a pain score of $<$ or $=3$ pre- and post-intervention. In addition, we monitored naloxone use as a measure of adverse events related to pain treatment. RESULTS: Our baseline assessment of pain was 42% and the baseline treatment was 59%. After 5 weeks, pain assessment improved to 71% and pain management improved to 97%. CONCLUSION: Our

interventions were associated with significant improvements in pain assessment and treatment without an increase in adverse events related to pain therapy. Our interventions were relatively simple and may be implemented broadly. Our interventions provide insights into the application of complexity theory in improvement efforts.

Fairbanks, C. A. "Spinal delivery of analgesics in experimental models of pain and analgesia." *Advanced Drug Delivery Reviews*. 55, no. 8(2003): 1007-41 UI 12935942.

Systemic administration of analgesics can lead to serious adverse side effects compromising therapeutic benefit in some patients. Information coding pain transmits along an afferent neuronal network, the first synapses of which reside principally in the spinal cord. Delivery of compounds to spinal cord, the intended site of action for some analgesics, is potentially a more efficient and precise method for inhibiting the pain signal. Activation of specific proteins that reside in spinal neuronal membranes can result in hyperpolarization of secondary neurons, which can prevent transmission of the pain signal. This is one of the mechanisms by which opioids induce analgesia. The spinal cord is enriched in such molecular targets, the activation of which inhibit the transmission of the pain signal early in the afferent neuronal network. This review describes the pre-clinical models that enable new target discovery and development of novel analgesics for site-directed pain management. [References: 337]

Ferreira, M. L., et al. "Efficacy of spinal manipulative therapy for low back pain of less than three months' duration." *Journal of Manipulative & Physiological Therapeutics*. 26, no. 9(2003): 593-601 UI 14673408.

OBJECTIVES: To review the efficacy of spinal manipulation for low back pain of less than 3 months duration. Data sources Randomized clinical trials on spinal manipulative therapy for low back pain were identified by searching EMBASE, CINAHL, MEDLINE, and the Physiotherapy Evidence Database (PEDro). Study selection Outcome measures of interest were pain, return to work, adverse events, disability, quality of life, and patient satisfaction with therapy. Data extraction Methodological assessment of the trials was performed using the PEDro scale. Trials were grouped according to the type of intervention, outcome measures, and follow-up time. Where there were multiple studies with sufficient homogeneity of interventions, subjects, and outcomes, the results were analyzed in a meta-analysis using a random effects model. Data synthesis Thirty-four papers (27 trials) met the inclusion criteria. Three small studies showed spinal manipulative therapy produces better outcomes than placebo therapy or no treatment for nonspecific low back pain of less than 3 months duration. The effects are, however, small. The findings of individual studies suggest that spinal manipulative therapy also seems to be more effective than massage and short wave therapy. It is not clear if spinal manipulative therapy is more effective than exercise, usual physiotherapy, or medical care in the first 4 weeks of treatment. CONCLUSIONS: Spinal manipulative therapy produces slightly better outcomes than placebo therapy, no treatment, massage, and short wave therapy for nonspecific low back pain of less than 3 months duration. Spinal manipulative therapy, exercise, usual physiotherapy, and medical care appear to produce similar outcomes in the first 4 weeks of treatment.

Fink, D., M. Mata, and J. C. Glorioso. "Cell and gene therapy in the treatment of pain." *Advanced Drug Delivery Reviews*. 55, no. 8(2003): 1055-64 UI 12935944.

Chronic pain represents a clinical problem of enormous impact. Understanding of the anatomy, pharmacology, and physiology of pain has resulted in the identification of new targets and candidate drugs, but effective novel therapies have been slow to emerge. One approach is to transplant cells that secrete bioactive macromolecules, or use viral vectors to transfer the genes coding for those molecules, in order to deliver short-lived potent peptides of known analgesic efficacy to targeted sites in the nervous system. The data from animal models are reviewed, and the prospect for development of human therapies based on this approach is considered. [References: 31]

Fischer, G. "Management of vulvar pain." *Dermatologic Therapy*. 17, no. 1(2004): 134-49 UI 14756898.

Vulvodynia is a frequently used medical term that literally means "vulvar pain". Therefore, vulvodynia is a symptom, not a disease. The term itself indicates a variety of unpleasant chronic vulvar sensations, including burning, rawness, soreness, irritation, sensitivity, and formication. This may or may not include dyspareunia. Primary vulvodynia occurs when these sensory disturbances occur in the absence of observable dermatologic disease or vulvovaginal

infection. There are several causes for this, including neuropathy, referred pain, and pelvic floor muscle dysfunction. For the purist, it is the patient in whom there is no observable reason for vulvar pain who represents the true case of vulvodynia. However, vulvodynia can also occur secondarily as a symptom of vulvar skin disease. Restricting the present paper to patients without objective signs leaves out all the important conditions which come into the differential diagnosis of vulvar pain which should be ruled out first. The first step in managing vulvodynia is making an accurate diagnosis of its cause. The present review summarizes the diagnosis and management of the chronic dermatologic diseases which may cause primary and secondary vulvodynia. The etiology of primary vulvodynia is much more poorly understood than secondary vulvodynia, and treatment of some aspects remains controversial. [References: 65]

Frey, C. F., and K. L. Mayer. "Comparison of local resection of the head of the pancreas combined with longitudinal pancreaticojejunostomy (frey procedure) and duodenum-preserving resection of the pancreatic head (beger procedure)." *World Journal of Surgery*. 27, no. 11(2003): 1217-30 UI 14534821.

The etiology of pain in chronic pancreatitis may be ductal hypertension, increased parenchymal pressure, or neural damage. It is difficult to assess the severity of pain in this patient population, a problem made more challenging by the frequency of narcotic dependency. Therapeutic interventions developed to relieve the pain of chronic pancreatitis include denervation of the pancreas, decompression of the main duct of the pancreas, resection of part or all of the diseased pancreas, and reduction of pancreatic secretion. Operative intervention for patients with chronic pain is indicated when severe pain, complications of pain, or potential malignancy are present. The operations that consistently provide long-lasting pain relief all have in common resection of all or a portion of the head of the pancreas. Adverse effects on exocrine and endocrine function, nutrition, and quality of life are related to the amount of pancreas resected. The ideal procedure should be easy to perform, have a low morbidity and mortality rate, provide long-lasting pain relief, and not augment endocrine and exocrine insufficiency. No single operation fulfills this ideal. The local resection of the head of the pancreas combined with longitudinal pancreaticojejunostomy (LR-LPJ) proposed by Frey and the duodenum-preserving resection of the head of the pancreas (DPHR) proposed by Beger are discussed. The conceptualization, development, and technique of LR-LPJ are discussed, and comparisons of patient outcomes are made with the outcomes of other procedures for chronic pancreatitis. [References: 99]

Fuchs-Lacelle, S., and T. Hadjistavropoulos. "Development and preliminary validation of the pain assessment checklist for seniors with limited ability to communicate (PACSLAC)." *Pain Management Nursing*. 5, no. 1(2004): 37-49 UI 14999652.

The purpose of this study, conducted in three phases, was to develop a clinically useful observational tool (i.e., the Pain Assessment Checklist for Seniors With Limited Ability to Communicate [PACSLAC]) to assess pain in seniors with severe dementia. In Phase 1, professional caregivers of seniors with severe dementia were interviewed in order to generate a list of pain-related behaviors that are characteristic of care recipients living in long-term-care facilities. Based on a systematic examination of interview transcripts by experienced researchers and an independent coder, a behavioral checklist (i.e., the initial version of the PACSLAC) was developed. The checklist items were organized into conceptually based subscales (e.g., facial expressions, activity/body movement). Phase 2 focused on an assessment of the internal consistency of the checklist ($\alpha = .92$). Following an item analysis, the subscales of the PACSLAC (Social/Personality/Mood Indicators, Facial Expressions, Activity/Body Movement, and Physiological Indicators/Eating/Sleeping Changes/Vocal Behaviors) were found to be internally consistent. Phase 3 focused on a preliminary validation of the PACSLAC. Analyses suggest that the PACSLAC discriminated among pain events (during which there was a clear and recognizable cause for the patients' pain), events during which patients were experiencing nonpainful distress, and situations during which patients were calm.

Fuchs-Lacelle, S., et al. "Comparing two observational systems in the assessment of knee pain." *Pain Research & Management*. 8, no. 4(2003): 205-11 UI 14679415.

OBJECTIVE: Research has demonstrated the utility of the Pain Behavior Measurement (PBM) system as a pain index. PBM involves the recording of sighing, rubbing, grimacing, guarding and bracing. A modification of this system has been proposed, focusing on the occurrence of joint flexing, rubbing, unloading the joint, guarding and rigidity, specifically for

patients with knee pain. The aim of the present study was to compare the original PBM to the modified version in a sample of knee replacement patients to assess the utility of the more specialized approach. It was expected that the more discomforting physiotherapy activities (knee bending and quadriceps exercises) would result in more pain behaviours than intermediate activities (walking and standing), which, in turn, would result in more pain behaviours than reclining. The extent to which each system reflected this expected pattern was examined. METHODS: Ninety-three seniors were observed while completing a series of structured post-knee surgery physiotherapy activities (knee bending, standing, walking, reclining and a quadriceps exercise). RESULTS: Analyses of self-reported levels of pain were consistent with the expected pattern of pain levels in relation to the physiotherapy activities. Specific pain behaviours within each system (eg, grimacing, rigidity) occurred in a manner consistent with the expected pattern, while other behaviours (e.g., rubbing the affected area) did not. CONCLUSIONS: Although there was no clear advantage for the modified system over the PBM, an optimal approach may involve combining specific behaviours from each system.

Galantino, M. L., et al. "The impact of modified Hatha yoga on chronic low back pain: a pilot study." *Alternative Therapies in Health & Medicine*. 10, no. 2(2004): 56-9 UI 15055095.

PURPOSE: The purpose of this randomized pilot study was to evaluate a possible design for a 6-week modified hatha yoga protocol to study the effects on participants with chronic low back pain. PARTICIPANTS: Twenty-two participants (M = 4; F = 17), between the ages of 30 and 65, with chronic low back pain (CLBP) were randomized to either an immediate yoga based intervention, or to a control group with no treatment during the observation period but received later yoga training. METHODS: A specific CLBP yoga protocol designed and modified for this population by a certified yoga instructor was administered for one hour, twice a week for 6 weeks. Primary functional outcome measures included the forward reach (FR) and sit and reach (SR) tests. All participants completed Oswestry Disability Index (ODI) and Beck Depression Inventory (BDI) questionnaires. Guiding questions were used for qualitative data analysis to ascertain how yoga participants perceived the instructor, group dynamics, and the impact of yoga on their life. ANALYSIS: To account for drop outs, the data were divided into better or not categories, and analyzed using chi-square to examine differences between the groups. Qualitative data were analyzed through frequency of positive responses. RESULTS: Potentially important trends in the functional measurement scores showed improved balance and flexibility and decreased disability and depression for the yoga group but this pilot was not powered to reach statistical significance. Significant limitations included a high dropout rate in the control group and large baseline differences in the secondary measures. In addition, analysis of the qualitative data revealed the following frequency of responses (1) group intervention motivated the participants and (2) yoga fostered relaxation and new awareness/learning. CONCLUSION: A modified yoga-based intervention may benefit individuals with CLB, but a larger study is necessary to provide definitive evidence. Also, the impact on depression and disability could be considered as important outcomes for further study. Additional functional outcome measures should be explored. This pilot study supports the need for more research investigating the effect of yoga for this population.

Gibbs, B. T., and R. T. Neff. "A 22-year-old Army private with chest pain and weight loss." *Military Medicine*. 169, no. 2(2004): 157-60 UI 15040641.

The objective of this study was to delineate an efficient and effective diagnostic approach in evaluating a patient with weight loss and a posterior mediastinal mass. This case demonstrates the evaluation and management of a 22-year-old Army private with weight loss, chest pain, and a posterior mediastinal mass on chest X-ray. The importance of obtaining a thorough travel history to formulate the differential diagnosis is highlighted.

Glancy, D. L., et al. "ECG of the month. Chest pain in a 29-year-old man. TV1 taller than TV6 due to posterior ischemia/injury." *Journal of the Louisiana State Medical Society*. 156, no. 1(2004): 10-1 UI 15000205.

Gray, S. L., et al. "Benzodiazepine use in older adults enrolled in a health maintenance organization." *American Journal of Geriatric Psychiatry*. 11, no. 5(2003): 568-76 UI 14506091.

OBJECTIVES: The authors examined patterns of benzodiazepine use in older adults. Specifically, they describe prevalence and incidence of benzodiazepine use during the index year, describe persistence and intensity of benzodiazepine use over a 4-year period; and examine factors associated with benzodiazepine use in the upcoming year. METHODS: Authors

performed a secondary analysis of data collected as part of a health promotion intervention trial conducted from 1986 to 1992 in older health maintenance organization enrollees (N=1,505). Benzodiazepine use was ascertained from computerized pharmacy records. Demographic characteristics, health status, and health behaviors were ascertained from mailed questionnaires. RESULTS: During the index year, the prevalence and incidence of benzodiazepine use was 12.3% and 6.6%, respectively. Of those using during the index year, 16% of new users and 63% of previous users continued to use for the following 3 years. The factors significantly associated with benzodiazepine use in the following year were female gender, high school education, higher chronic disease score, higher levels of self-reported pain and stress, low-to-normal body mass index (BMI), and self-reported nervous disorder. CONCLUSIONS: New users had low intensity of use and a low probability of continuing use over the following 3 years. A very small percentage of this sample had evidence of daily use for 4 years. Of concern, benzodiazepines were used by the segment of the sample that were at greatest risk for hip fractures (women with normal/low BMI). Clinicians should assess the need for continued benzodiazepine use at regular intervals.

Gross, D. P., and M. C. Battie. "The prognostic value of functional capacity evaluation in patients with chronic low back pain: part 2: sustained recovery." *Spine*. 29, no. 8(2004): 920-4 UI 15082997.

STUDY DESIGN: Historical cohort study. OBJECTIVES: We investigated the ability of the Isernhagen Work Systems' Functional Capacity Evaluation to predict sustained recovery. SUMMARY OF BACKGROUND DATA: Functional Capacity Evaluation is commonly used to determine readiness or ability for safe return to work following musculoskeletal injury, implying a low risk of future recurrence or "reinjury." However, this theoretical construct has not yet been tested. METHODS: Workers' compensation claimants who underwent Functional Capacity Evaluation following low back injury and subsequently demonstrated recovery in the form of suspension of total temporary disability benefits or claim closure were studied. The number of failed tasks and performance on the floor-to-waist lift task in the protocol were used as indicators of Functional Capacity Evaluation performance. Indicators of sustained recovery included whether or not total temporary disability benefits restarted, the claim was reopened, or a new back claim was filed. Logistic regression was used to determine the prognostic effect of Functional Capacity Evaluation alone and after controlling for suspected confounding variables. RESULTS: Overall, 46 of 226 patients (20%) experienced a recurrent back-related event within the year following Functional Capacity Evaluation. Opposite to the initial hypothesis, a lower number of failed Functional Capacity Evaluation tasks was consistently associated with higher risk of recurrence after controlling for potential confounding variables. Performance on the floor-to-waist lift task was not related to future recurrence. CONCLUSIONS: Contrary to Functional Capacity Evaluation theory, better Functional Capacity Evaluation performance as indicated by a lower number of failed tasks was associated with higher risk of recurrence. The validity of Functional Capacity Evaluation's purported ability to identify claimants who are "safe" to return to work is suspect.

Gross, D. P., M. C. Battie, and J. D. Cassidy. "The prognostic value of functional capacity evaluation in patients with chronic low back pain: part 1: timely return to work." *Spine*. 29, no. 8(2004): 914-9 UI 15082996.

STUDY DESIGN: Historical cohort study. OBJECTIVES: We examined the validity of the Isernhagen Work Systems' Evaluation in predicting timely return to work. SUMMARY OF BACKGROUND DATA: Functional Capacity Evaluations are used commonly to determine readiness for return to work, yet little is known of their validity. METHODS: Workers' compensation claimants undergoing Functional Capacity Evaluations following work-related low back injury were studied. Two cohorts were formed, one on which exploratory analyses were conducted and a second for confirmation. Evaluation indicators were the number of tasks in the protocol rated as failed and performance during the floor-to-waist lift task. The primary outcome investigated was time receiving total temporary disability benefits (as a surrogate of return to work) and a secondary outcome was time until claim closure in the year following Evaluation. Cox proportional-hazards regression was used to determine the prognostic effect of Evaluation crudely and after controlling for potential confounders. RESULTS: Few patients (4%) were found to pass all Evaluation tasks, yet most experienced total temporary disability suspension and claim closure within 1 year following Functional Capacity Evaluations. Better Evaluation performance was related to faster time to suspension of total temporary disability benefits and claim closure after controlling confounding factors, but explained little of the variation in these outcomes (approximately 10%). Performance on the floor-to-waist lift was

as predictive as the number of failed tasks in the entire Functional Capacity Evaluations protocol. CONCLUSIONS: Better performance on Evaluation was weakly associated with faster recovery; however, the amount of variation explained was small. One task in the Evaluation was as predictive as the entire protocol.

Hack, G. D., and R. C. Hallgren. "Chronic headache relief after section of suboccipital muscle dural connections: a case report." *Headache*. 44, no. 1(2004): 84-9 UI 14979889.

The presence of a connective tissue bridge, attaching suboccipital muscles to the dura mater, is now recognized as a feature of normal human anatomy. The role that this myodural bridge may play in headache production is uncertain; however, a new conceptual model is emerging. Postsurgical myodural adhesions have been reported as a complication resulting from excision of acoustic tumors. Extensive research now exists implicating these myodural adhesions as a possible source of postoperative headache. Integrating these 2 types of myodural unions (anatomic and pathologic) into a unified theory of headache production, we report a single patient who experienced relief from chronic headache after surgical separation of the myodural bridge from the suboccipital musculature.

Hanspal, R. S., K. Fisher, and R. Nieveen. "Prosthetic socket fit comfort score." *Disability & Rehabilitation*. 25, no. 22(2003): 1278-80 UI 14617445.

PURPOSE: To validate a simple numerical scale to record the socket comfort of an artificial limb. METHOD: This study has adapted the numerical rating scale for pain (Downie et al.(1)) to form a 11 point scale to record the socket comfort score (SCS). Patients were asked to rate the comfort of their socket on a 0 - 10 scale where 0 and 10 represented the most uncomfortable and the most comfortable socket imaginable. Ratings of clinical evidence of poor fit were recorded independently by the physician and the prosthetist. Patients gave new numerical ratings of comfort after any necessary intervention to the socket. Repeatability, criterion related validity, sensitivity to change and use in clinical practice was studied on 44 consecutive patients in the prosthetic rehabilitation clinic. RESULTS: The study showed the reported SCS was consistent and reliable, high correlations being found between three scores obtained from patients by independent recorders. A strong relationship existed between the reported SCS and clinical evidence of poor fit judged by the physician and by the prosthetists' ratings. Significant positive changes in SCS were found after intervention to improve the fit. CONCLUSION: SCS has shown repeatability, criterion related validity and sensitivity to change. It has clinical utility and wider use is recommended.

Hartmann, C. W., et al. "Care management for persistent pain: an introduction." *Disease Management*. 6, no. 2(2003): 103-10 UI 14577904.

Persistent pain is a frequently occurring condition with significant economic, clinical, and humanistic implications, for both individuals and society. Current literature, however, points to unresolved issues with regard to its identification, assessment, diagnosis, and treatment, and a number of suggestions have been made for improving the quality of care for pain sufferers. Because persistent pain shares many of the salient features of other chronic conditions such as diabetes and congestive heart failure, it is reasonable to believe that the adoption of a coordinated approach to care management could substantially improve the quality of care. Several strategies--including identification, appropriate referral, education, and planning--can and should be implemented to offer comprehensive, individualized treatment alternatives that are not currently available and that improve patient outcomes, including quality of life.

[References: 40]

Hasegawa, K., et al. "Painful Schmorl's node treated by lumbar interbody fusion." *Spinal Cord*. 42, no. 2(2004): 124-8 UI 14765146.

STUDY DESIGN: A case report of painful lumbar Schmorl's node is presented. OBJECTIVE: To describe diagnostic evidence and the result of surgical treatment of a rare case of painful Schmorl's node. SETTING: Niigata, Japan. CASE REPORT: A 55-year-old housewife was diagnosed with painful Schmorl's node of L3 by discography, which depicted leakage of the contrast medium into the L3 vertebra through a disruption of the central part of the cranial end plate with concomitant back pain. Segmental fusion surgery was performed. Mechanical low back pain of the patient improved just after surgery. Histologic examination demonstrated that fibrocartilaginous tissue herniated through a disruption of the superior end plate and forced into the vertebral spongiosa. CONCLUSIONS: Painful Schmorl's node can be diagnosed by discography, which demonstrates an intravertebral disc herniation with concomitant back pain. Surgical treatment should be considered in a patient with persistent disabling back pain.

When surgical treatment is indicated, eradication of the intervertebral disc including Schmorl's node and segmental fusion are preferable.

Hawkins, R. S., and A. D. Hart. "The use of thermal biofeedback in the treatment of pain associated with endometriosis: preliminary findings." *Applied Psychophysiology & Biofeedback*. 28, no. 4(2003): 279-89 UI 14686081.

Endometriosis is a common gynecological disease that causes marked physical and emotional distress in lives of women, resulting in dysmenorrhea, pain, or both throughout the menstrual cycle in over 96% of cases. A multiple case study design (N = 5) was employed to investigate the use of thermal biofeedback in the treatment of pain associated with endometriosis. The majority of participants (4 out of 5) were able to demonstrate mastery over hand temperature through thermal biofeedback. Of those participants, significant reductions in various aspects of pain were observed by the end of the study; one had a significant increase in Life Control; two had reductions in Pain Severity; three had a decrease in Affective Distress; and all 4 demonstrated reduction in Life Interference, as measured by the West Haven-Yale Multidimensional Pain Inventory. This is a preliminary study with a small sample size and without a control sample; hence, the results are considered only as suggestive of the potential use of biofeedback therapy in alleviating pain and associated symptomatology related to endometriosis. Further research is warranted.

Hayashida, M., et al. "Intravenous infusion of adenosine 5"-triphosphate alleviated a disabling postherpetic neuralgia." *Journal of Anesthesia*. 18, no. 1(2004): 36-8 UI 14991473.

Hemingway, H., et al. "Prospective validity of measuring angina severity with Canadian Cardiovascular Society class: The ACRE study.[see comment]." *Canadian Journal of Cardiology*. 20, no. 3(2004): 305-9 UI 15054509.

BACKGROUND: Although the prevalence of angina remains high, the importance of grading angina severity is unclear. **OBJECTIVES:** To determine the extent to which angina severity is associated with angiographic findings, and the rate of revascularization, mortality and nonfatal myocardial infarction. **METHODS:** Prospective, population-based study with a 2.5-year follow-up of 2849 consecutive patients with angina undergoing coronary angiography at Barts and the London NHS Trust, London, United Kingdom, in the Appropriateness of Coronary Revascularisation (ACRE) study. Angina severity was assessed with the Canadian Cardiovascular Society (CCS) classification, ranging from class I (mild) to IV (severe). Outcome measures were revascularization rates, and all-cause mortality and nonfatal myocardial infarction. **RESULTS:** In age-adjusted analyses, a higher CCS class was linearly associated ($P < 0.001$) with a higher number of diseased vessels and impaired left ventricular function. When adjusting for age, sex, smoking, history of hypertension, diabetes, number of diseased vessels, left ventricular function, use of acetylsalicylic acid, beta-blockers or statins, and revascularization status (for death and nonfatal myocardial infarction), a higher CCS class was linearly associated with higher coronary angioplasty ($P < 0.001$) and bypass graft ($P = 0.03$) rates, and lower all-cause mortality and nonfatal myocardial infarction ($P < 0.001$); CCS IV versus I: hazard ratio 2.44, 95% CI 1.46 to 4.09). **CONCLUSION:** CCS class was linearly associated with angiographic findings, revascularization rates, mortality and nonfatal myocardial infarction. These findings support the importance of a four-level grading of symptom severity among angina patients.

Hernandez-Palazon, J., et al. "Intraperitoneal application of bupivacaine plus morphine for pain relief after laparoscopic cholecystectomy." *European Journal of Anaesthesiology*. 20, no. 11(2003): 891-6 UI 14649341.

BACKGROUND AND OBJECTIVE: Intraperitoneal administration of a local anaesthetic in combination with an opioid, for the relief of postoperative pain, has already been reported except after laparoscopic cholecystectomy. This study was aimed at assessing the analgesic effect of the intraperitoneal administration of bupivacaine and morphine in patients undergoing laparoscopic cholecystectomy. **METHODS:** At the end of laparoscopic cholecystectomy, in a double-blind, randomized manner, one of the following injections was given intraperitoneally. There were 30 patients in each group: Group 1, physiological saline 30 mL; Group 2, bupivacaine 0.25% 30 mL; Group 3, bupivacaine 0.25% 30 mL plus morphine 2 mg. In addition, Group 2 received 2 mg intravenous (i.v.) morphine in 2 mL saline, and Groups 1 and 3, 2 mL saline intravenously. Patients' postoperative pain was evaluated using a visual analogue scale and a verbal rating score. The postoperative analgesic requirement was assessed by the total dose of metamizol administered by an i.v. patient-controlled analgesia

(PCA) device. Pain, vital signs, supplemental analgesic consumption and side-effects were recorded for all patients for 24 h. RESULTS: There were no differences between the three groups regarding pain scores (at rest and coughing) during the study except in the first 2 h, when scores were lower for patients receiving intraperitoneal bupivacaine plus i.v. morphine ($P < 0.05$). Supplemental consumption of metamizol was significantly lower ($P < 0.05$) in Group 3 than in Group 1 during the first 6 h after surgery. However, the cumulative doses of metamizol were also lower in Group 2 than in Groups 1 and 3 over the entire study (2025 +/- 1044 mg vs. 4925 +/- 1238 and 4125 +/- 1276mg; $P < 0.05$). CONCLUSIONS: In patients undergoing laparoscopic cholecystectomy, the intraperitoneal administration of morphine plus bupivacaine 0.25% reduced the analgesic requirements during the first 6 postoperative hours compared with the control group. However, the combination of intraperitoneal bupivacaine 0.25% and i.v. morphine was more effective for treatment of pain after laparoscopic cholecystectomy.

Hoekstra, J., et al. "The symptom monitor. A diary for monitoring physical symptoms for cancer patients in palliative care: feasibility, reliability and compliance." *Journal of Pain & Symptom Management*. 27, no. 1(2004): 24-35 UI 14711466.

The aim of this study was to evaluate the feasibility, reliability and compliance of a new instrument, a diary to monitor physical symptoms for patients with cancer in the palliative phase of their illness. The development of the diary took place in three phases: two pilot studies and one intervention study. In Pilot I, reliability was tested within 13 pairs of patients and their proxy in a patient-proxy comparison. Pilot II was performed to test the feasibility of the instrument among 47 frail elderly. In the intervention study among patients with cancer in the palliative phase, the feasibility as well as the compliance has been tested. The phases have been completed with good results: reliability (ICC) of prevalent symptoms was above 0.75, good feasibility and good compliance. The Symptom Monitor can be used by patients and doctors as an instrument to monitor physical symptoms. The effectiveness of the use of this diary for improvement in treatment of symptoms in the palliative phase of cancer is being tested in a randomized clinical trial.

Hoffman, H. G., et al. "Water-friendly virtual reality pain control during wound care." *Journal of Clinical Psychology*. 60, no. 2(2004): 189-95 UI 14724926.

Recent research suggests that entering an immersive virtual environment can serve as a powerful nonpharmacologic analgesic for severe burn pain. The present case study describes an attempt to use water-friendly virtual reality (VR) technology with a burn patient undergoing wound care in a hydrotherapy tub. The patient was a 40-year-old male with 19% total body surface area deep flame/flash burns to his legs, neck, back, and buttocks. The virtual reality treatment decreased the patient's sensory and affective pain ratings and decreased the amount of time spent thinking about his pain during wound care. We believe that VR analgesia works by drawing attention away from the wound care, leaving less attention available to process incoming pain signals. The water-friendly VR helmet dramatically increases the number of patients with severe burns that could potentially be treated with VR (see <http://www.vrpain.com>). Copyright 2003 Wiley Periodicals, Inc.

Holden, J. E., and J. A. Pizzi. "The challenge of chronic pain." *Advanced Drug Delivery Reviews*. 55, no. 8(2003): 935-48 UI 12935938.

Chronic pain is a complex problem with staggering negative health and economic consequences. The complexity of chronic pain is presented within Cervero and Laird's model that describes three phases of pain, including pain without tissue damage, pain with tissue damage and inflammation, and neuropathic pain. The increased afferent input in phases 2 and 3 of chronic pain produces marked changes in primary afferents, dorsal root ganglia, and spinal cord dorsal horn. These changes promote the symptoms of chronic pain, including spontaneous pain, hyperalgesia, and allodynia. Increased afferent input also evokes supraspinal input to the dorsal horn, including biphasic innervation from the ventromedial medulla and A7 catecholamine cell group, that promotes hyperalgesia and allodynia. More rostral brain structures, such as the lateral hypothalamus, amygdala, and hippocampus, may also play a role in chronic pain. Although much has been discovered about the multiple pathological mechanisms involved in chronic pain, further research is needed to fully comprehend these mechanisms. [References: 125]

Holmes, M. V., et al. "A randomized, double-blind, placebo-controlled study of the efficacy of tetracaine gel (Ametop) for pain relief during topical photodynamic therapy." *British Journal of Dermatology*. 150, no. 2(2004): 337-40 UI 14996106.

BACKGROUND: Many patients find topical 5-aminolaevulinic acid (ALA) photodynamic therapy (PDT) painful. Local anaesthetics are not routinely used and their effect on PDT pain has not been examined. OBJECTIVES: To evaluate the efficacy of tetracaine gel (Ametop) for pain relief during and after PDT. METHODS: A prospective, double-blind, placebo-controlled study of 42 patients with lesions (< or =2 cm diameter) of superficial nonmelanoma skin cancer or dysplasia. Patients were randomized to either tetracaine (4% w/w) (n=22) or vehicle (n=20) gel under occlusion for 1 h pre-irradiation. Pain was assessed during and after irradiation using a visual analogue scale (VAS) and faces pain scale. RESULTS: Patients who received tetracaine gel experienced only slightly less pain during PDT (median VAS 4) compared with those who received placebo (median VAS 4.5) (95% confidence interval for difference 0-3, P=0.08). No significant difference in pain was experienced between the treatment groups immediately after irradiation or later. CONCLUSIONS: When compared with placebo, tetracaine gel did not significantly reduce pain during or after PDT for small lesions of superficial basal cell carcinoma, Bowen's disease or actinic keratosis.

Huxtable, R. "Get out of jail free? The doctrine of double effect in English law." *Palliative Medicine*. 18, no. 1(2004): 62-8 UI 14982209.

The ethical doctrine of double effect permits health care professionals to administer potentially fatal medication, provided that their intentions are purely to control symptoms. In this article, the legal status and scope of the doctrine will be analysed, and it will be argued that the law in this context is unclear, incoherent and partial in its application. The problems are not exclusively legal in nature, however, because health professionals have been critical both of the doctrine itself and of the lawyers' understanding of the concept. It will be concluded that clarification and appropriate enforcement are needed if the doctrine and the law are to retain credibility.

Hwang, S. L., et al. "Punctate midline myelotomy for intractable visceral pain caused by hepatobiliary or pancreatic cancer." *Journal of Pain & Symptom Management*. 27, no. 1(2004): 79-84 UI 14711472.

The purpose of this study was to demonstrate the existence of a newly recognized midline posterior column pathway that mediates the perception of visceral pain resulting from hepatobiliary or pancreatic cancer. A punctate midline myelotomy (PMM) of T(3) level was performed in 6 patients who experienced severe visceral pain caused by hepatobiliary or pancreatic cancer. Preoperatively, the pain was refractory to strong opioids. Clinical efficacy of PMM was evaluated by comparing patient pain rating on a visual analogue scale. Follow-up periods ranged from 2-18 weeks after operation. All 6 patients had immediate pain relief after operation. Although the pain recurred from 2-12 weeks later in 3 patients, the severity of recurrent cancer pain markedly decreased. No adverse neurological sequelae were observed. Our results of high thoracic PMM offer clinical support for the concept that neurosurgical interruption of midline visceral pain pathway can effectively control severe visceral pain without causing adverse neurological sequelae in patients with hepatobiliary or pancreatic cancer.

Ivar Brox, J., et al. "Randomized clinical trial of lumbar instrumented fusion and cognitive intervention and exercises in patients with chronic low back pain and disc degeneration." *Spine*. 28, no. 17(2003): 1913-21 UI 12973134.

STUDY DESIGN: Single blind randomized study. OBJECTIVES: To compare the effectiveness of lumbar instrumented fusion with cognitive intervention and exercises in patients with chronic low back pain and disc degeneration. SUMMARY OF BACKGROUND DATA: To the authors' best knowledge, only one randomized study has evaluated the effectiveness of lumbar fusion. The Swedish Lumbar Spine Study reported that lumbar fusion was better than continuing physiotherapy and care by the family physician. PATIENTS AND METHODS: Sixty-four patients aged 25-60 years with low back pain lasting longer than 1 year and evidence of disc degeneration at L4-L5 and/or L5-S1 at radiographic examination were randomized to either lumbar fusion with posterior transpedicular screws and postoperative physiotherapy, or cognitive intervention and exercises. The cognitive intervention consisted of a lecture to give the patient an understanding that ordinary physical activity would not harm the disc and a recommendation to use the back and bend it. This was reinforced by three daily physical exercise sessions for 3 weeks. The main outcome measure was the Oswestry Disability Index.

RESULTS: At the 1-year follow-up visit, 97% of the patients, including 6 patients who had either not attended treatment or changed groups, were examined. The Oswestry Disability Index was significantly reduced from 41 to 26 after surgery, compared with 42 to 30 after cognitive intervention and exercises. The mean difference between groups was 2.3 (-6.7 to 11.4) (P = 0.33). Improvements in back pain, use of analgesics, emotional distress, life satisfaction, and return to work were not different. Fear-avoidance beliefs and fingertip-floor distance were reduced more after nonoperative treatment, and lower limb pain was reduced more after surgery. The success rate according to an independent observer was 70% after surgery and 76% after cognitive intervention and exercises. The early complication rate in the surgical group was 18%. CONCLUSION: The main outcome measure showed equal improvement in patients with chronic low back pain and disc degeneration randomized to cognitive intervention and exercises, or lumbar fusion.

Jeger, R. V., et al. "Prognostic value of stress testing in patients over 75 years of age with chronic angina." *Chest*. 125, no. 3(2004): 1124-31 UI 15006977.

STUDY OBJECTIVES: To define the prognostic value of stress testing (STRT) in patients \geq 75 years of age. DESIGN: Multicenter prospective randomized trial. SETTING: Tertiary care centers. PATIENTS: Two hundred ninety-two patients of the Trial of Invasive vs Medical Treatment of Elderly Patients aged \geq 75 years with chronic angina despite receiving two or more antianginal drugs were prospectively observed for 1 year. INTERVENTION: STRT (88% exercise ECG; 12% pharmacologic stress imaging) was performed if possible, and ischemia was diagnosed using current guidelines. Death for any reason and nonfatal myocardial infarction were outcome events. RESULTS: Patients who could perform STRT (148 patients) were younger, had a lower risk profile, received less medication, and had less severe angina than patients who could not perform STRT (144 patients). The 1-year mortality rate was only 1.4% in patients with negative STRT results (72 patients) compared to 5.3% in patients with positive STRT results (76 patients) and 13.7% in patients who had not undergone STRT due to unstable symptoms (95 patients). The corresponding 1-year rates of death/infarction were 2.8%, 15.8%, and 26.3%, respectively. After adjustment for baseline differences, mortality rates were no longer significantly different. However, compared to patients with negative STRT results, infarction and death/infarction rates remained higher in patients with provokable ischemia (hazard ratio [HR], 8.9 [p = 0.04]; HR, 6.1 [p = 0.02], respectively) and in patients without STRT due to unstable angina (HR, 11.8 [p = 0.02]; HR, 8.6 [p = .004], respectively). CONCLUSIONS: STRT in elderly patients is feasible and provides important prognostic information for their future management. Patients with negative STRT results after receiving therapy have a good prognosis, and their conditions may be managed conservatively.

Jordan, S. "Prescription drugs uses and effects. Non-steroidal anti-inflammatory drugs." *Nursing Standard*. 18, no. 23(2004): suppl 1-2 UI 15017818.

Karmody, C. S. "Alternative therapies in the management of headache and facial pain." *Otolaryngologic Clinics of North America*. 36, no. 6(2003): 1221-30 UI 15025018.

Complementary therapies are now becoming the rule rather than the exception in the management of headache and facial pain. It is incumbent on physicians to be aware of and to have a working knowledge of these increasingly popular modalities. [References: 28]

Karmody, C. S. "Headache and facial pain. Preface." *Otolaryngologic Clinics of North America*. 36, no. 6(2003): xi-xii UI 15025004.

Kaski, J. C. "Pathophysiology and management of patients with chest pain and normal coronary arteriograms (cardiac syndrome X)." *Circulation*. 109, no. 5(2004): 568-72 UI 14769677.

Keller, A., et al. "Trunk muscle strength, cross-sectional area, and density in patients with chronic low back pain randomized to lumbar fusion or cognitive intervention and exercises." *Spine*. 29, no. 1(2004): 3-8 UI 14699268.

STUDY DESIGN: A randomized study. OBJECTIVES: To compare muscle strength, cross-sectional area, and density of the back muscles in two categories of patients with chronic low back pain, randomized to either lumbar fusion or cognitive intervention and exercises. SUMMARY OF BACKGROUND DATA: In two clinical trials, patients with chronic low back pain plus disc degeneration and postlaminectomy syndrome, respectively, were randomized to either lumbar fusion or cognitive intervention and exercises. We have previously reported that

results for the primary outcome were similar at the 1-year follow-up examination. METHODS: As the treatment alternatives and test procedures were identical, the two trials were merged into one. A total of 124 patients 25 to 60 years of age were included. Muscle strength, measured by isokinetic test device and by the Biering-Sorensen Test, was measured in 112 patients, and the cross-sectional area and density of the back muscles were measured in 61 patients at the inclusion and at the 1-year follow-up examination. RESULTS: The exercise group performed significantly better in muscle strength than did the lumbar fusion group, with the mean difference at 184 Nm (95% confidence interval, 64-303 Nm; $P = 0.003$) and for the Biering-Sorensen Test 21 seconds (95% confidence interval, 6-36 seconds; $P = 0.006$). The density at L3-L4 decreased in the lumbar fusion group but remained unchanged in the exercise group. The mean difference was 5.3 HU (95% confidence interval, 1.1-9.5 HU; $P = 0.01$). The cross-sectional area was unchanged in both groups. CONCLUSIONS: Patients with chronic low back pain who followed cognitive intervention and exercise programs improved significantly in muscle strength compared with patients who underwent lumbar fusion. In the lumbar fusion group, density decreased significantly at L3-L4 compared with the exercise group.

Khot, A., et al. "The use of intradiscal steroid therapy for lumbar spinal discogenic pain: a randomized controlled trial." *Spine*. 29, no. 8(2004): 833-6; discussion 837 UI 15082979.

STUDY DESIGN: A prospective randomized study of the therapeutic effect of intradiscal steroid injection compared to a saline placebo. OBJECTIVES: To determine whether intradiscal steroid injection influences the clinical outcome at 1 year in patients with chronic low back pain of discogenic origin. SUMMARY OF BACKGROUND DATA: Steroids have been used empirically in the treatment of back pain. They have been used in the epidural space and around nerve roots and have been used as an alternative to chymopapain within the disc. Previous studies have, however, shown variable results. METHODS: A total of 120 patients with chronic low back pain of discogenic origin were enrolled in the study. At discography, if they had concordant pain, they were randomized to injection of normal saline or methylprednisolone into the disc space. These patients were prospectively followed up for 12 months, and they were asked to report pain according to a visual analogue score and their Oswestry Disability Index was recorded. The primary outcome measure was determined as a percentage change in disability, and the results were analyzed using independent samples t test. The secondary outcome measure was a change in the pain score, and this was analyzed using the Mann-Whitney U test. RESULTS: There was no significant difference in the primary outcome between the two groups ($P = 0.71$). The steroid group had a mean change of 2.28 (SE 2.49) in percentage disability, while the saline group had a mean change of 3.42 (SE 1.79). With respect to the change in pain score, there was no significant difference between the two groups ($P = 0.72$). Those patients who had saline injection had a median change in pain score of 0 (interquartile range -1 to 1), whereas those given steroid treatment had a median change in pain score of 0 (interquartile range -0.25 to 1). CONCLUSIONS: This study demonstrates that intradiscal steroid injections do not improve the clinical outcome in patients with discogenic back pain compared with placebo.

Kizilkaya, M., et al. "Analgesic effects of intraarticular sufentanil and sufentanil plus methylprednisolone after arthroscopic knee surgery." *Anesthesia & Analgesia*. 98, no. 4(2004): 1062-5, table of contents UI 15041599.

We studied the effect of intraarticular saline, sufentanil, or sufentanil plus methylprednisolone after knee arthroscopic meniscectomy. In a double-blind randomized study, 60 patients undergoing knee arthroscopic meniscectomy were allocated to groups receiving intraarticular saline, intraarticular sufentanil 10 microg, or sufentanil 10 microg plus methylprednisolone 40 mg at the end of arthroscopy during general anesthesia. Postoperatively, pain levels at rest and during movement (i.e., active flexion of the knee) were measured by a visual analog scale and were significantly decreased in the sufentanil and sufentanil plus methylprednisolone groups compared with the control group. Moreover, we found that there was a significant reduction in intraarticular sufentanil and sufentanil plus methylprednisolone in the postoperative consumption of analgesics. We also found that the use of intraarticular sufentanil or sufentanil plus methylprednisolone after knee arthroscopic meniscectomy decreases the amount of supplementary analgesic needed for pain relief during the early postoperative period. In addition, we detected that sufentanil provided prolonged pain relief up to 24 h when compared with control, whereas when we combined sufentanil plus methylprednisolone, we found that it further reduced pain and use of analgesics when compared with sufentanil. IMPLICATIONS: The combined use of intraarticular sufentanil (10

microg) and methylprednisolone (40 mg) in arthroscopic meniscectomy surgery reduced both postoperative pain scores and the use of additional analgesics.

Klein, T., et al. "Perceptual correlates of nociceptive long-term potentiation and long-term depression in humans." *Journal of Neuroscience*. 24, no. 4(2004): 964-71 UI 14749441.

Long-term potentiation (LTP) and long-term depression (LTD) of synaptic strength are ubiquitous mechanisms of synaptic plasticity, but their functional relevance in humans remains obscure. Here we report that a long-term increase in perceived pain to electrical test stimuli was induced by high-frequency electrical stimulation (HFS) (5 x 1 sec at 100 Hz) of peptidergic cutaneous afferents (27% above baseline, undiminished for >3 hr). In contrast, a long-term decrease in perceived pain (27% below baseline, undiminished for 1 hr) was induced by low-frequency stimulation (LFS) (17 min at 1 Hz). Pain testing with punctate mechanical probes (200 microm diameter) in skin adjacent to the HFS-LFS conditioning skin site revealed a marked twofold to threefold increase in pain sensitivity (secondary hyperalgesia, undiminished for >3 hr) after HFS but also a moderate secondary hyperalgesia (30% above baseline) after strong LFS. Additionally, HFS but not LFS caused pain to light tactile stimuli in adjacent skin (allodynia). In summary, HFS and LFS stimulus protocols that induce LTP or LTD in spinal nociceptive pathways in animal experiments led to similar LTP- and LTD-like changes in human pain perception (long-term hyperalgesia or hypoalgesia) mediated by the conditioned pathway. Additionally, secondary hyperalgesia and allodynia in adjacent skin induced by the HFS protocol and, to a minor extent, also by the LFS protocol, suggested that these perceptual changes encompassed an LTP-like heterosynaptic facilitation of adjacent nociceptive pathways by a hitherto unknown mechanism.

Ko, S., D. H. Goldstein, and E. G. VanDenKerkhof. "Definitions of "respiratory depression" with intrathecal morphine postoperative analgesia: a review of the literature." *Canadian Journal of Anaesthesia*. 50, no. 7(2003): 679-88 UI 12944442.

PURPOSE: To review the postoperative intrathecal morphine (ITM) analgesia literature for their definitions of "respiratory depression" (RD). SOURCE: Medline (1966 - June Week 5 2001) and reference lists were searched for original studies involving bolus-dose ITM for postoperative analgesia, which used "respiratory depression" or similar terms. PRINCIPLE FINDINGS: The search identified 209 studies. These were included if ITM use was appropriate (bolus dose, postoperative analgesia) and the term "respiratory depression" was used, which left 96 studies remaining. Forty-four (46%) did not define "RD" despite using this term. A further 24 (25%) defined RD with respiratory rate (RR) alone. Only 28 (29%) defined RD with more than RR alone. There was no statistically significant association between the presence of a definition for RD with study design, study size or publication period. Also, no significant association existed between rigorosity of RD definitions and the above factors. CONCLUSION: The term "respiratory depression" has no clear definition from a review of the literature on ITM use for postoperative analgesia. While defining RD with bradypnea is superior to having no definition, this is still inadequate. In future research, the consistent use of terms with specific meanings will facilitate understanding the true incidence of ITM's respiratory effects. If "respiratory depression" is used, then an explicit definition of its meaning should be provided. Future research must also address what is clinically significant respiratory impairment from intrathecal opioids, and how to optimally monitor for this. Further delineating their risks vs benefits will allow for more optimal dosing. [References: 129]

Koizuka, S., et al. "Oral etodolac, a COX-2 inhibitor, reduces postoperative pain immediately after fast-track cardiac surgery." *Journal of Anesthesia*. 18, no. 1(2004): 9-13 UI 14991469.

PURPOSE: The present study was designed to evaluate the efficacy of a cyclooxygenase (COX)-2 inhibitor, etodolac, on postoperative pain after fast-track cardiac surgery, and to examine the changes in plasma etodolac concentration after oral administration. METHODS: Thirty patients scheduled for elective coronary artery bypass grafting (CABG) surgery were randomly assigned preoperatively in a double-blind fashion to receive either vehicle (n = 15) or etodolac 400 mg (n = 15) via a gastric tube at the end of the surgery. Standardized fast-track cardiac anesthesia was used. In both groups, postoperative pain was treated with buprenorphine suppository. Visual analogue pain scores (VASs) were recorded immediately after extubation and at 24 h after surgery. Plasma etodolac concentration was measured at 1, 2, and 6 h after administration (n = 8). RESULTS: No difference was detected in time to extubation between the etodolac group (209 +/- 85 min, mean +/- SD) and the vehicle group (207 +/- 98 min). VASs were significantly lower in the etodolac (2.3 +/- 2.1) vs the vehicle

group (5.8 +/- 2.0) immediately after extubation (P = 0.009), but no difference was detected in pain scores at 24 h after surgery, or in the amount of buprenorphine administered in the intensive care unit (ICU), or in the incidence of side effects. Plasma etodolac concentration was within the pharmaceutically recommended range at 1 h, 2 h, and 6 h after administration. CONCLUSION: The oral use of etodolac with rectal buprenorphine reduces pain scores immediately after cardiac surgery without an increase in side effects.

Koppert, W., et al. "Perioperative intravenous lidocaine has preventive effects on postoperative pain and morphine consumption after major abdominal surgery." *Anesthesia & Analgesia*. 98, no. 4(2004): 1050-5, table of contents UI 15041597.

Sodium channel blockers are approved for IV administration in the treatment of neuropathic pain states. Preclinical studies have suggested antihyperalgesic effects on the peripheral and central nervous system. Our objective in this study was to determine the time course of the analgesic and antihyperalgesic mechanisms of perioperative lidocaine administration. Forty patients undergoing major abdominal surgery participated in this randomized and double-blinded study. Twenty patients received lidocaine 2% (bolus injection of 1.5 mg/kg in 10 min followed by an IV infusion of 1.5 mg. kg(-1). h(-1)), and 20 patients received saline placebo. The infusion started 30 min before skin incision and was stopped 1 h after the end of surgery. Lidocaine blood concentrations were measured. Postoperative pain ratings (numeric rating scale of 0-10) and morphine consumption (patient-controlled analgesia) were assessed up to 72 h after surgery. Mean lidocaine levels during surgery were 1.9 +/- 0.7 microg/mL. Patient-controlled analgesia with morphine produced good postoperative analgesia (numeric rating scale at rest, <or=3; 90%-95%; no group differences). Patients who received lidocaine reported less pain during movement and needed less morphine during the first 72 h after surgery (103.1 +/- 72.0 mg versus 159.0 +/- 73.3 mg; Student's t-test; P < 0.05). Because this opioid-sparing effect was most pronounced on the third postoperative day, IV lidocaine may have a true preventive analgesic activity, most likely by preventing the induction of central hyperalgesia in a clinically relevant manner. IMPLICATIONS: The perioperative administration of systemic small-dose lidocaine reduces pain during surgery associated with the development of pronounced central hyperalgesia, presumably by affecting mechanosensitive nociceptors, because these have been linked to the induction of central sensitization and were shown to be particularly sensitive to small-dose lidocaine.

Kumar, A., C. Felderhof, and M. S. Eljamel. "Spinal cord stimulation for the treatment of refractory unilateral limb pain syndromes." *Stereotactic & Functional Neurosurgery*. 81, no. 1-4(2003): 70-4 UI 14742967.

BACKGROUND: Spinal cord stimulation (SCS) is an established therapy for chronic pain. Its success depends on vigorous patient selection and good follow-up. METHODS: We reviewed 75 patients who had undergone SCS to establish their outcome. 67 of these patients had refractory unilateral limb pain syndrome (RULPS). Their case notes and operative log books were critically reviewed, and when appropriate, telephone interviews were performed (58 patients). RESULTS: 87% of patients responded initially to SCS; at 6 months, the effect waned to 79%, and by 2 years, it improved to 84%. One third of the patients had no revisions, 40% had IPG replacements and the rest had revisions because of lead-related complications (5.3%), epidural complications (mainly fibrosis; 19%) or infections (2.7%). 56% of patients reduced their analgesia, 1.5% stopped taking any painkillers and 46.8% of those who were employed returned to work. CONCLUSION: We feel that SCS is an effective treatment in RULPS and its results depend upon vigorous patient selection and an adequate follow-up and maintenance program. Copyright 2003 S. Karger AG, Basel

Kurtais Gursel, Y., et al. "Adding ultrasound in the management of soft tissue disorders of the shoulder: a randomized placebo-controlled trial." *Physical Therapy*. 84, no. 4(2004): 336-43 UI 15049727.

BACKGROUND AND PURPOSE: There is still a lack of evidence about the beneficial effects of ultrasound (US) intervention for the management of soft tissue problems. Thus, this study was designed to assess the effectiveness of US over a placebo intervention when added to other physical therapy interventions and exercise in the management of shoulder disorders. SUBJECTS AND METHODS: Forty patients who were diagnosed by ultrasonography or magnetic resonance imaging to have a periarticular soft tissue disorder of the shoulder were randomly assigned to either a group that received true US (n=20; mean time since onset of pain=8.7 months, SD=8.8, range=1-36) or a group that received sham US (n=20; mean time

since onset of pain=8.1 months, SD=10.8, range=1-42). Besides true or sham US (10 minutes), superficial heat (10 minutes), electrical stimulation (15 minutes), and an exercise program (15-30 minutes) were administered to both groups 5 days each week for 3 weeks. RESULTS: Subjects showed within-group improvements in pain, range of motion, Shoulder Disability Questionnaire scores, and Health Assessment Questionnaire scores with the intervention, but the differences did not reach significance when compared between the groups. DISCUSSION AND CONCLUSION: The results suggest that true US, compared with sham US, brings no further benefit when applied in addition to other physical therapy interventions in the management of soft tissue disorders of the shoulder.

Larsson, U. E. "Influence of weight loss on pain, perceived disability and observed functional limitations in obese women." *International Journal of Obesity & Related Metabolic Disorders: Journal of the International Association for the Study of Obesity*. 28, no. 2(2004): 269-77 UI 14610533.

OBJECTIVES: To evaluate the effects of weight reduction by dieting on musculoskeletal pain, perceived disability and observed functional limitations in everyday life. SUBJECTS: Female outpatients in weight-loss programmes at the Karolinska Hospital, who met the criteria for participating in this study: age 20-65 y and body mass index (BMI) \geq 30 kg/m². In all, 57 entered the programme studied and 43 completed it. INTERVENTIONS: Diet programmes for 8-12 weeks and thereafter 6688 kJ/day for $>$ 52 weeks. MAIN OUTCOME MEASURES: Questionnaires on musculoskeletal symptoms and obesity-specific questions on basic activities of daily living (ADL), mobility, housework, occupational disability and activities outside home. Test protocol developed for observation of functional limitations in obese women. Assessments at baseline, after 12 and after 64 weeks of dieting. RESULTS: In all, 75% completed the study. Weight loss was 14% (14.7 \pm 6.1 kg) at 12 weeks and, due to a weight relapse, 10% (10.1 \pm 8.1 kg) at 64 weeks. At the end of the study period, the proportion of current pain from lower backs and feet had normalised. Important perceived improvements were ability to rise from having fallen over, to walk up stairs and to lift heavy things. Most functional limitations improved, such as climbing onto high stools, walking up stairs with grocery bags, doing pedicure, rising from floor or low furniture. The questionnaire results partly followed the weight development, but the observed improvements were long-lasting. CONCLUSIONS: Weight reduction had positive short-term effects on musculoskeletal pain, perceived disability and observed functional limitations. A partial weight relapse had some impact on perceived pain and disability, but not on observed limitations. The maintained improvements may be due to weight loss, but also less pain and increased physical activity.

Lee, D. "Low back pain intervention: conservative or surgical?" *Journal of Surgical Orthopaedic Advances*. 12, no. 4(2003): 200-2 UI 15008282.

Low back pain (LBP) is a very common disorder with a U.S. population incidence of 80%. The risk for developing chronic LBP is relatively low but the majority of the costs associated with LBP are generated specifically by this group. Unfortunately, there is no gold standard intervention and few comparative, randomized, prospective treatment studies have been done. Therefore, the optimal treatment approach continues to be controversial. Surgery is usually reserved for those patients with severe and debilitating symptoms and, with careful selection, can result in good outcomes with rapid return to function. For patients who are not surgical candidates, conservative treatment must emphasize restoration and maintenance of functional movement. [References: 21]

Lefaucheur, J. P., et al. "Neurogenic pain relief by repetitive transcranial magnetic cortical stimulation depends on the origin and the site of pain." *Journal of Neurology, Neurosurgery & Psychiatry*. 75, no. 4(2004): 612-6 UI 15026508.

OBJECTIVE: Drug resistant neurogenic pain can be relieved by repetitive transcranial magnetic stimulation (rTMS) of the motor cortex. This study was designed to assess the influence of pain origin, pain site, and sensory loss on rTMS efficacy. PATIENTS AND METHODS: Sixty right handed patients were included, suffering from intractable pain secondary to one of the following types of lesion: thalamic stroke, brainstem stroke, spinal cord lesion, brachial plexus lesion, or trigeminal nerve lesion. The pain predominated unilaterally in the face, the upper limb, or the lower limb. The thermal sensory thresholds were measured within the painful zone and were found to be highly or moderately elevated. Finally, the pain level was scored on a visual analogue scale before and after a 20 minute session of "real" or "sham" 10 Hz rTMS over the side of the motor cortex corresponding to the hand on the painful side, even if the pain was not experienced in the hand itself. RESULTS:

and discussion: The percentage pain reduction was significantly greater following real than sham rTMS (-22.9% v -7.8%, $p = 0.0002$), confirming that motor cortex rTMS was able to induce antalgic effects. These effects were significantly influenced by the origin and the site of pain. For pain origin, results were worse in patients with brainstem stroke, whatever the site of pain. This was consistent with a descending modulation within the brainstem, triggered by the motor corticothalamic output. For pain site, better results were obtained for facial pain, although stimulation was targeted on the hand cortical area. Thus, in contrast to implanted stimulation, the target for rTMS procedure in pain control may not be the area corresponding to the painful zone but an adjacent one. Across representation plasticity of cortical areas resulting from deafferentation could explain this discrepancy. Finally, the degree of sensory loss did not interfere with pain origin or pain site regarding rTMS effects. CONCLUSION: Motor cortex rTMS was found to result in a significant but transient relief of chronic pain, influenced by pain origin and pain site. These parameters should be taken into account in any further study of rTMS application in chronic pain control.

Li, S. S., et al. "The use of a distal occlusion balloon protection device in acute coronary syndrome." *International Journal of Cardiology*. 92, no. 2-3(2003): 281-4 UI 14659866.

We report our early experience in using the PercuSurge GuardWire Plus system as a distal protection device in patients with acute coronary syndrome and acute myocardial infarction. Forty-three patients received percutaneous coronary intervention with the GuardWire Plus system. Thirteen had unstable angina, five had non-Q myocardial infarction and 25 had ST segment elevation myocardial infarction. Forty-one target lesions were in native coronary vessels and two were in saphenous vein grafts. Total occlusion occurred in 18 patients. The mean occlusion time by the distal protective balloon was 262.8 +/- 114.1 s. Preoperatively, TIMI 0 flow was present in 18, TIMI II flow in two and TIMI III flow in 23 patients. Post-operatively, TIMI II and TIMI III flow were established in two and 41 patients, respectively. All procedures were successful and the GuardWire Plus system was successfully deployed in all but two patients. There was no procedure-related major adverse clinical event. There was no major adverse clinical event at 30 days. There was no device-related complication. We believe that the GuardWire Plus system is safe and feasible in patients with acute coronary syndrome and acute myocardial infarction.

Lierz, P., et al. "Comparison between bupivacaine 0.125% and ropivacaine 0.2% for epidural administration to outpatients with chronic low back pain." *European Journal of Anaesthesiology*. 21, no. 1(2004): 32-7 UI 14768921.

BACKGROUND AND OBJECTIVE: Epidural blocks should provide good analgesia for the treatment of chronic low back pain without any motor block to allow active physiotherapy. Epidural ropivacaine is known to produce less motor block compared to bupivacaine at anaesthetic concentrations. This prospective, randomized double blind study compares the analgesic, motor block, and haemodynamic effects of single shot epidural injections of ropivacaine 0.2% 10 mL with bupivacaine 0.125% in outpatients suffering from chronic low back pain. METHODS: Forty patients were assigned to receive either ropivacaine 0.2% ($n = 20$) or bupivacaine 0.125% ($n = 20$) within a series of eight single shot epidural blocks. RESULTS: Thirty-six patients received either ropivacaine 0.2% ($n = 18$) or bupivacaine 0.125% ($n = 18$) within a series of eight single shot epidural blocks. Both groups showed no significant differences either in analgesia, or in motor blockade or haemodynamic changes. Thus ropivacaine 0.2% did not reduce the incidence of motor block (9.0% of patients with motor block Bromage scores 1, 2 or 3 in ropivacaine or bupivacaine). The combination of repeated epidural analgesia and physiotherapy reduced the median pain-scores (visual analogu scale, 0-10) from 7 (SD +/- 1.6) at the beginning of the study to 4.1 (SD +/- 1.7) at the end of the series. CONCLUSIONS: Both bupivacaine 0.125% and ropivacaine 0.29% appear suitable for epidural administration to outpatients with chronic low back pain attending for epidural analgesia associated with physiotherapy (physical therapy).

Lotery, H. E., N. McClure, and R. P. Galask. "Vulvodynia." *Lancet*. 363, no. 9414(2004): 1058-60 UI 15065562.

CONTEXT: Vulvodynia is a term used to describe chronic burning and/or pain in the vulva without objective physical findings to explain the symptoms. The terminology and classification of vulvodynia continue to evolve, and much remains to be understood about the prevalence, pathogenesis, natural history, and management of this distressing condition. STARTING POINT: James Aikens and colleagues showed that chronic vulval pain (vulvodynia or vulvar dysaesthesia) is associated with worse depressive symptoms (*Am J Obstet Gynecol* 2003;

189: 462-66). However, the increased scores for depression in this case-control study were attributed to sexual disinterest and experience of chronic pain rather than to features of depressive disorder. These results lend weight to the increasing need for better understanding of the pathogenesis of vulval pain and how to manage it appropriately. WHERE NEXT? The aetiology of vulvodynia and effectiveness of treatments need further study. Appraising the available literature, we have formulated a useful approach to patients with chronic vulval pain. There is a pressing need for further case-control studies of potential causes of vulvodynia and for randomised trials of interventions.

Magnussen, L., L. I. Strand, and H. Lygren. "Reliability and validity of the back performance scale: observing activity limitation in patients with back pain." *Spine*. 29, no. 8(2004): 903-7 UI 15082994.

STUDY DESIGN: A single group design to examine reliability and validity of the Back Performance Scale. OBJECTIVES: To examine intertester reliability, test-retest reliability, and concurrent validity of the Back Performance Scale. SUMMARY OF BACKGROUND DATA: The Back Performance Scale is a condition-specific performance measure of activity limitation in patients with back pain. It includes five tests of daily activities requiring mobility of the trunk: sock test, pick-up test, roll-up test, fingertip-to-floor test, and lift test. Discriminative ability and responsiveness to important change have previously been demonstrated. METHODS: A total of 41 patients with back pain participated in the study. Two physiotherapists examined test performances concurrently, but independently. The patients filled in three questionnaires, two reflecting perceived disability (Der Funktionsfragenbogen Hannover, Roland-Morris Disability Questionnaire) as well as one for fear avoidance of daily activities and work (Fear Avoidance Belief Questionnaire). One physiotherapist retested the patients after 2 to 3 days. RESULTS: Intertester agreement of the Back Performance Scale sum score was very high (intraclass correlation coefficient 2.1): 0.996. Within-patient standard deviation (sw) on the 16-point Back Performance Scale was very low: 0.25. Test-retest reliability was high (intraclass correlation coefficient = 0.91, sw = 1.3). Intertester agreement of the separate tests was also very high, ranging from kappa= 0.90-1.00. Test-retest reliability was moderate to high (kappa= 0.55-0.83). A high correlation was demonstrated between the Back Performance Scale and the Der Funktionsfragenbogen Hannover: Spearman rho (rho) = 0.825, P < 0.01. Correlation between the Back Performance Scale and Roland-Morris Disability Questionnaire was moderate: rho = 0.454, P < 0.01. No correlation was demonstrated between the Back Performance Scale and the Fear Avoidance Belief Questionnaire. CONCLUSION: The Back Performance Scale appears to be a reliable and valid outcome measure of activity limitation.

Malyshev, M., et al. "Surgical angioplasty of the left main coronary artery and/or proximal segment of the right coronary artery by pulmonary autograft patch." *European Journal of Cardio-Thoracic Surgery*. 25, no. 1(2004): 21-5 UI 14690728.

OBJECTIVES: There are controversial opinions about the expediency of performance of the surgical angioplasty of the left main coronary artery (LMCA) and/or proximal segment of the right coronary artery (RCA) in rare cases of isolated lesion or with limited involving of distal coronary branches. One of the many fears restraining a wider performance of this operation is the uncertainty in longevity of patch material. It is supposed that the autovein has tendency to proliferating degeneration similar to that in case of coronary artery bypass grafting (CABG), while the autopericardium may be subjected to calcification. Autoarterial patches have a limited width. To withdraw these real or hypothetical negative properties of patch materials we offer to harvest the pulmonary autograft patch (PAP) for coronary angioplasty. METHODS: Our experience with PAP-angioplasty of LMCA and/or proximal segment of RCA includes four cases. Simultaneous angioplasty of LMCA and proximal segment of RCA was performed in one patient; angioplasty of LMCA--in two patients; angioplasty of RCA--in one patient. In two cases the stenosis of LMCA was accompanied by stenotic lesion of left anterior descending coronary artery (LAD). The surgical approach to LMCA was performed by complete crossing of pulmonary artery (PA). There was no necessity to use any plastic material for restoring of PA integrity in all cases. RESULTS: All patients survived after the operation. The postoperative course was uncomplicated except one case of LMCA/LAD lesion. There was a temporary low cardiac output syndrome and ventricular arrhythmia resulting in additional CABG as 'back-up' procedure. This complication was not a consequence of impassability of LMCA because its good patency was established at control coronary angiograms. The postoperative coronary angiograms were performed in all cases. They showed a satisfactory width of the main coronary vessels. The maximal follow-up period is 30 months. CONCLUSION: We suppose that

the use of viable pulmonary autograft patch for surgical angioplasty of LMCA and proximal segment of RCA removes one of a lot of fears, which restrain the wider use of this alternative to CABG operation.

Mark, V. H. "Instrumented fusions: a need for guidelines and research." *Surgical Neurology*. 61, no. 4(2004): 318-9 UI 15031064.

Max, M. B. "How to move pain and symptom research from the margin to the mainstream." *Journal of Pain*. 4, no. 7(2003): 355-60 UI 14622677.

Pain, dyspnea, nausea, and other physical symptoms receive rather little study despite their major public health impact and the similar neural circuitry that makes these symptoms tractable therapeutic targets. Pain accounts for more than 20% of medical visits and 10% of prescription drug sales but only 0.6% of National Institutes of Health research funds. Clinical pain research remains clustered in the few clinical specialties of the founders of the field--neurology, anesthesia, cancer, and dentistry. Remarkable recent advances in basic science have not been widely applied by cardiologists, gastroenterologists, urologists, and gynecologists. Research funding in dyspnea and nausea is an order of magnitude smaller than funding in pain, despite mechanisms that may be common to all three. Political pressure from an aging population may soon influence funding agencies to train additional researchers in these areas. Academic health centers that develop the cross-disciplinary infrastructure to conduct this research will win major shares of this influx of funding and improve the diagnosis and management of many diseases. [References: 52]

McCleane, G. "Cholecystokinin antagonists a new way to improve the analgesia from old analgesics?" *Current Pharmaceutical Design*. 10, no. 3(2004): 303-14 UI 14754389.

Cholecystokinin, originally thought to be confined only to the gastrointestinal tract, is now known to be co-localised in both the gastrointestinal tract and central nervous system. In animal models levels are increased after neural injury and with opioid administration. This peptide acts as an anti-opioid, and as levels increase, the extent of opioid derived antinociception decreases. Co-administration of a CCK antagonist along with an opioid is associated with an improved level of antinociception. Furthermore CCK antagonists may prevent antinociceptive tolerance with opioids and even reverse established tolerance. Human studies have now confirmed the pro-analgesic effect of some CCK antagonists. Human investigation of the effect of CCK antagonists on analgesic tolerance has yet to be performed. This review examines the available evidence that suggests a role for CCK antagonists in human pain management. [References: 106]

McIntosh, S. E., and S. Leffler. "Pain management after discharge from the ED." *American Journal of Emergency Medicine*. 22, no. 2(2004): 98-100 UI 15011222.

Pain is an important but understudied and often overlooked aspect of emergency medical care. This study examined the management of pain after discharged of patients from the emergency department (ED). We hypothesized that pain management after discharge would be adequate, and that patients would use their medications as prescribed. We surveyed 144 patients by telephone after they had been treated in the ED for common orthopedic complaints. We used a standardized questionnaire to assess prescription-filling practices, side effects of medications, interventions by other health-care professionals, and adequacy of pain relief. Most patients discharged from the ED with a prescription for medication were satisfied with their pain relief (77%). Of those who did not fill their prescription, only 67% were satisfied. Although 26% of the patients reported side effects, most were minor. Thirteen percent of patients with prescribed medications did not fill their prescriptions. Of patients for whom narcotic analgesics were prescribed, 7% drove vehicles while taking these medications. The patients in the study were quite satisfied with their pain control. Most filled their prescriptions and did so in a timely manner. Those who did not fill prescriptions for medications reported the least satisfaction with pain control.

Menzel, N. N. "Back pain prevalence in nursing personnel: measurement issues." *AAOHN Journal*. 52, no. 2(2004): 54-65 UI 14979616.

1. The problem of work related musculoskeletal disorders of the low back in nursing personnel has been well documented in the literature by cross sectional studies showing high prevalence rates in licensed nurses and nursing aides. However, it is difficult to compare findings among these studies because of the use of nonstandardized symptom surveys, variations in case definitions, and other methodological inconsistencies. 2. Measuring the

change in current back pain prevalence yields more timely information about the effectiveness of an ergonomic intervention than assessing injury incidence rates, because of the high percent of nursing staff members who work in pain but delay filing workers' compensation claims. 3. As employers attempt to reduce manual handling injuries, occupational health nurses may be called upon to survey workers for musculoskeletal symptom prevalence and document the effectiveness of ergonomic interventions. Before using or developing any musculoskeletal disorder symptom survey for workplace surveillance or research, occupational health nurses should determine whether the survey has adequate reliability, validity, responsiveness, and practicality. [References: 91]

Merrill, D. G. "Hoffman's glasses: evidence-based medicine and the search for quality in the literature of interventional pain medicine.[see comment]." *Regional Anesthesia & Pain Medicine*. 28, no. 6(2003): 547-60 UI 14634948.

Mitchell, M. "Pain management in day-case surgery." *Nursing Standard*. 18, no. 25(2004): 33-8 UI 15038175.

BACKGROUND: Effective pain management following day surgery is a challenging issue. For the majority of patients severe pain is uncommon. However, a number of patients experience considerable pain following discharge. Uncontrolled pain is one of the main causes of re-admission to an inpatient bed following day surgery and a leading cause of patient dissatisfaction with it. CONCLUSION: This article reviews the literature and there is a discussion of the issues concerning effective pain management in day surgery. The drugs commonly used in day surgery practice are outlined to demonstrate the constraints that day surgery practices can impose on effective pain management. Day surgery is continually expanding and hip replacement and cholecystectomy are now being undertaken in day surgery facilities (Amarnath et al 2002, Berger 2003). The role of the nurse in effective pain management is therefore crucial amid such innovative developments as, even when explicitly instructed, the majority of patients still experience some post-operative pain. [References: 57]

Moore, N., et al. "Risk factors for adverse events in analgesic drug users: results from the PAIN study." *Pharmacoepidemiology & Drug Safety*. 12, no. 7(2003): 601-10 UI 14558184.

BACKGROUND: The relative influence of various risk factors for adverse events (AE) in analgesics users have never been precisely quantified. Advantage was taken of data generated in the paracetamol, aspirin and ibuprofen new tolerability (PAIN) study, a large randomized double-blinded trial of paracetamol, aspirin or ibuprofen for common pain in general practice to attempt this. OBJECTIVE: Identify and quantify factors associated with the occurrence of AE in users of analgesic drugs. METHOD: Multivariate logistic regression analysis of potential risk factors for all AE, clinically significant AE (SAE) and clinically significant gastro-intestinal AE (GI SAE). RESULTS: Of the 8677 patients included in the study, 8633 contributed data. The main risk factors for SAE were indication: compared to those treated for musculoskeletal pain, patients treated for menstrual pain had an odds ratio (95% Confidence Interval) of 0.4 (0.2-0.7), sore throat 0.6 (0.5-0.8), cold and flu 0.7 (0.6-0.8), headache 0.8 (0.7-1.0); concomitant use of medication contra-indicated in the drugs' labeling (OR: 2.2; 1.6-2.9); increasing number of other concomitant medications: 1: OR 1.5 (1.3-1.8); 2-3: OR 1.9 (1.6-2.3); more than 3: OR (2.7; 2.1-3.5); treatment with aspirin: OR 1.4; (1.2-1.6) but not ibuprofen: OR 0.9; (0.8-1.1) compared to paracetamol; history of previous GI disorder OR 1.4 (1.0-1.8); female gender: OR 1.3 (1.1-1.4). Age was not significantly associated with AE in the multivariate analysis. Risk factors for all AE and GI SAE were mostly the same as for significant AE, but there were fewer GI SAE with ibuprofen than with paracetamol (OR 0.8; 0.6-0.9). CONCLUSION: Apart from the analgesic used and its indication, the main risk factors identified for AE in users of first-line analgesics for common pain were the number and nature of concomitant medication.

Moss, A. H., et al. "Palliative care." *American Journal of Kidney Diseases*. 43, no. 1(2004): 172-3 UI 14712442.

Nederhand, M. J., et al. "Predictive value of fear avoidance in developing chronic neck pain disability: consequences for clinical decision making." *Archives of Physical Medicine & Rehabilitation*. 85, no. 3(2004): 496-501 UI 15031840.

OBJECTIVE: To improve clinical decision making in posttraumatic neck pain by investigating the additional value of fear-avoidance variables in predicting chronic neck pain disability. DESIGN: An inception cohort with baseline assessment 1 week posttrauma and

outcome assessment 24 weeks posttrauma. Predictive factors include pain intensity, Neck Disability Index (NDI), catastrophizing, fear of movement (Tampa Scale for Kinesiophobia [TSK]), and avoidance muscle behavior. SETTING: Hospital emergency department of a general hospital. PARTICIPANTS: A consecutive sample of 90 people reporting of pain in neck or head region after a motor vehicle collision. Eighty-two subjects (91.1%) of the sample provided 24-week follow-up on the outcome. INTERVENTIONS: Not applicable. MAIN OUTCOME MEASURE: The NDI assessing physical disability of subjects with neck pain. RESULTS: By using a combination of the baseline NDI and TSK, it appears to be possible to predict chronic disability with a probability of 54.3% (95% confidence interval [CI], 35.2%-72.3%) after entering the NDI (cutoff, 15) as a first test, and with a probability of 83.3% (95% CI, 70.3%-91.3%) after entering the TSK (cutoff, 40) in a second test. CONCLUSIONS: A simple rating of baseline neck pain disability within a week of the trauma, separately or in combination with a test for fear of movement, can be used to predict future outcome. Patients showing fear of movement can be offered an intervention that focuses on reduction of this fear.

Nelson, R. "New nerve-block analgesia for patients with pancreatic cancer." *Lancet Oncology*. 5, no. 4(2004): 201 UI 15085847.

Nicosia, M. B. "The pain fighters." *Rehab Management*. 17, no. 2(2004): 22-6 UI 15022495.

Niemisto, L., et al. "Radiofrequency denervation for neck and back pain: a systematic review within the framework of the cochrane collaboration back review group." *Spine*. 28, no. 16(2003): 1877-88 UI 12923479.

STUDY DESIGN: Systematic review. OBJECTIVE: To assess the effectiveness of radiofrequency denervation for the treatment of musculoskeletal pain disorders. SUMMARY OF BACKGROUND DATA: There is a lack of effective treatment for chronic zygapophysial joint pain and discogenic pain. Radiofrequency denervation appears to be an emerging technology, with substantial variation in its use. METHODS: Original articles for this review were identified by electronically searching MEDLINE, PsycLIT, EMBASE, and the Cochrane Library to February 2002, hand-screening references, and consulting experts in the field. Two reviewers selected the randomized controlled trials that met the inclusion criteria, extracted the data, and assessed the main results and methodologic quality of the selected trials. Finally, qualitative analysis was conducted to evaluate the level of scientific evidence. RESULTS: Of seven relevant randomized controlled trials, six were considered to be high quality. The selected trials included 275 randomized patients, 141 of whom received active treatment. One study examined cervical zygapophysial joint pain; two, cervicobrachial pain; three, lumbar zygapophysial joint pain; and one, discogenic low back pain. The sample sizes were small, follow-up times short, and there were deficiencies noted in patient selection, outcome assessments, and statistical analyses. CONCLUSIONS: There is limited evidence that radiofrequency denervation offers short-term relief for chronic neck pain of zygapophysial joint origin and for chronic cervicobrachial pain, and conflicting evidence for its effectiveness for lumbar zygapophysial joint pain. There is limited evidence suggesting that intradiscal radiofrequency may not be effective in relieving discogenic low back pain. Further high-quality randomized controlled trials are needed, with larger patient samples and data on long-term effects, for which current evidence is inconclusive. [References: 35]

Nikolaus, T., and A. Zeyfang. "Pharmacological treatments for persistent non-malignant pain in older persons." *Drugs & Aging*. 21, no. 1(2004): 19-41 UI 14715042.

Persistent non-malignant pain is common, often neglected and under-treated among older persons. Some older adults do not complain because they consider chronic pain to be a characteristic of normal aging. Physicians have concerns regarding adverse effects of pharmacological treatment. The model of the World Health Organization for treatment of cancer pain is generally accepted and also recommended for persistent non-cancer pain. Furthermore, non-pharmacological treatment should complement drug treatment whenever possible. An initial assessment and possible treatment of underlying causes of pain are pertinent. Modern pharmacological pain management is based on non-opioid and opioid analgesics. NSAIDs are among the most widely prescribed class of drugs in the world. The new cyclo-oxygenase-2 inhibitors such as celecoxib and rofecoxib offer an alternative for the treatment of mild-to-moderate pain in patients with a history of gastric ulcers or bleeding. Paracetamol (acetaminophen) is being used widely for the management of mild pain across all age groups as it has moderate adverse effects at therapeutic dosages. For moderate pain, a

combination of non-opioid analgesics and opioid analgesics with moderate pain relief properties (e.g. oxycodone, codeine, tramadol and tilidine/naloxone) is recommended. For severe pain, a combination of non-opioid analgesics and opioid analgesics with strong pain relief properties (e.g. morphine, codeine) is recommended. The least toxic means of achieving systemic pain relief should be used. For continuous pain, sustained-release analgesic preparations are recommended. Drugs should be given on a fixed time schedule, and possible adverse effects and interactions should be carefully monitored. Adjuvant drugs, such as antidepressants or anticonvulsants, can be very effective especially in the treatment of certain types of pain, such as in diabetic neuropathy. Effective pain management should result in decreased pain, increased function and improvement in mood and sleep. [References: 279]

Okamoto, K., et al. "Elevated troponin T levels and lesion characteristics in non-ST-elevation acute coronary syndromes." *Circulation*. 109, no. 4(2004): 465-70 UI 14732748.

BACKGROUND: Elevated troponin T levels in non-ST-elevation acute coronary syndromes (NSTEMI-ACS) have been shown to predict an adverse outcome. Furthermore, it has been reported that troponin T could help improve the effectiveness of such new antithrombotic drugs as platelet GPIIb/IIIa antagonists and low-molecular-weight heparins. We hypothesized that such elevated troponin T levels in NSTEMI-ACS indicate the presence of thrombus at culprit lesions, and this hypothesis was verified through the use of coronary angiography. METHODS AND RESULTS: We studied 57 consecutive patients with NSTEMI-ACS who underwent preinterventional angiography. Before catheterization, we obtained blood samples to determine troponin positivity, and the patients were then classified as either troponin-positive or troponin-negative groups (diagnostic threshold, 0.1 ng/mL). Using angiography at the culprit lesions, we examined the presence of coronary thrombus, yellow plaque, and complex plaque. Moreover, we compared the preinterventional angiographic parameters (thrombus and complexity of the culprit lesion, and TIMI flow) between the two groups. Twenty-two patients were troponin-positive and 35 patients were troponin-negative. Univariate analyses indicated that the TIMI flow and the incidence of coronary thrombus detected with angiography correlate with the elevated troponin T levels. A multivariate logistic regression analysis showed the presence of coronary thrombus detected with angiography to be the only independent factor associated with elevated troponin T levels in patients with NSTEMI-ACS (odds ratio, 22.1; 95% CI, 2.59 to 188.42; P=0.0046). CONCLUSIONS: Using angiography, the elevated troponin T levels in NSTEMI-ACS were confirmed to be strongly associated with the presence of coronary thrombus.

Oldham, L., and L. J. Kristjanson. "Development of a pain management programme for family carers of advanced cancer patients." *International Journal of Palliative Nursing*. 10, no. 2(2004): 91-9 UI 15039613.

This article reports the first phase of a three-phase study to develop and test a pain education programme for family carers of patients with advanced cancer. The purpose of this phase was to develop the pain education programme. Interviews were conducted with 19 family carers to elicit their perceptions about the components, content, amount and timing of an educational programme that might be useful in educating them about pain management. Interviews were taped, transcribed and content analysed. Family carers reported knowledge deficits regarding pain, medications, comfort therapies and general comfort measures. Strategies for learning were described. Findings from these interviews together with results published in the literature were structured into a formal pain management programme. This programme has been pilot tested and evaluated using a randomized clinical trial.

O'Neil, S. J., and G. V. Aranha. "Lateral pancreaticojejunostomy for chronic pancreatitis." *World Journal of Surgery*. 27, no. 11(2003): 1196-202 UI 14534819.

Chronic pancreatitis is a progressive fibrosis of the pancreas that leads to loss of endocrine and exocrine function. The most common symptom in this disease is intractable pain. The etiology of pain in chronic pancreatitis is not clearly understood. However, many of these patients have dilated ducts consisting of saccular dilations and intervening constrictions referred to as the "chain of lakes" phenomenon. These patients can be diagnosed with either endoscopic retrograde cholangiopancreatography (ERCP) or computed tomography (CT). These patients are best treated by the Partington Rochelle modification of the Puestow Procedure otherwise known as lateral pancreaticojejunostomy. Overall pain relief in published studies occurs in 50-90% of patients. Another proposed advantage of the lateral pancreaticojejunostomy is preservation of endocrine and exocrine pancreatic function as long as the pancreas is not further damaged by alcohol. [References: 32]

Opstelten, W., A. J. van Wijck, and R. J. Stolker. "Interventions to prevent postherpetic neuralgia: cutaneous and percutaneous techniques." *Pain*. 107, no. 3(2004): 202-6 UI 14736581.

Panico, K., and P. Manfredi. "Institutional patterns of symptomatic medication in hospitalized patients with advanced cancer." *American Journal of Hospice & Palliative Care*. 21, no. 2(2004): 134-6 UI 15055514.

Although standards for palliative treatment of cancer patients at end of life are available, their use is perceived to vary among institutions depending on the prevailing philosophy of care. In this retrospective study, we reviewed the treatment of dying cancer patients receiving intravenous morphine transferred from a cancer center to a palliative care hospital. We recorded the dose of morphine and the use of other palliative medications, including adjuvant analgesic drugs. Although morphine doses tended to decrease after the transfer, the use of palliative medications was similar in the two institutions.

Patrick, L. E., E. M. Altmaier, and E. M. Found. "Long-term outcomes in multidisciplinary treatment of chronic low back pain: results of a 13-year follow-up." *Spine*. 29, no. 8(2004): 850-5 UI 15082983.

STUDY DESIGN: Patients completing a multidisciplinary pain treatment were contacted to obtain 13-year follow-up information on pain, mood, employment, and general health. OBJECTIVES: Study objectives were to determine if post-treatment improvements were maintained over a lengthy follow-up period and to compare patients' general health to norms of comparably aged persons. SUMMARY OF BACKGROUND DATA: Although many studies have demonstrated the short-term effectiveness of multidisciplinary pain treatment programs for chronic low back pain, few studies have documented that these treatment gains are maintained over time. Only two studies have reported patient outcomes on a long-term basis (10+ years). Those studies have documented that patient gains during treatment are generally maintained during follow-up. METHODS: An attempt was made to contact all patients completing an inpatient chronic back pain rehabilitation program at the University of Iowa's Spine Diagnostic and Treatment Center. Of the 45 participants, 28 were located and 26 agreed to participate in a telephone interview. Analyses of pretreatment and posttreatment data revealed these follow-up participants did not differ from the larger study sample. RESULTS: Patients maintained their treatment gains in all areas (pain intensity and interference, negative mood). Additionally, patients showed levels of general health comparable to similarly aged peers with the exceptions of pain (more pain) and physical functioning (lower functioning, more pain interference). More than half the sample was employed; of those not employed, few reported this was due to pain. CONCLUSIONS: The data lend support to the long-term effectiveness of multidisciplinary treatment programs for chronic low back pain.

Pawl, R. "Lumbar fusion or no fusion: what is the evidence?" *Surgical Neurology*. 61, no. 4(2004): 316-7 UI 15031063.

Pawl, R. P. "Pain treatment and spine surgery." *Surgical Neurology*. 61, no. 4(2004): 320-2 UI 15031065.

Perl, E. R. "Current approaches to pathological pain." *Bioessays*. 26, no. 4(2004): 454-6 UI 15057943.

Petersen, K. L., et al. "A randomized study of the effect of oral lamotrigine and hydromorphone on pain and hyperalgesia following heat/capsaicin sensitization." *Journal of Pain*. 4, no. 7(2003): 400-6 UI 14622682.

In this randomized double-blind placebo-controlled study, the analgesic effect of oral lamotrigine (400 mg) on cutaneous sensitization induced with the heat/capsaicin sensitization model was compared with the effect of oral hydromorphone (8 mg) in healthy volunteers. In a separate session, intravenous remifentanyl (0.10 microg.kg(-1).min(-1)) and placebo were administered. This session was used as an additional reference comparator. Outcome measures were the areas of secondary hyperalgesia to brush and von Frey hair stimulation and the painfulness of noxious thermal stimulation in nonsensitized skin. Compared with placebo, both intravenous remifentanyl and oral hydromorphone significantly suppressed secondary hyperalgesia and acute thermal nociception. Oral lamotrigine did not reduce

secondary hyperalgesia or acute thermal nociception but produced side effects of severity comparable with that of oral hydromorphone. Although lamotrigine is efficacious in the management of some types of chronic neuropathic pain, the lack of effect of this agent on human experimental pain suggests that its analgesic effects depend on nerve injury-associated abnormalities, which cannot be simulated in healthy human volunteers.

Phero, J. C., and R. A. Dionne. "Pharmacological management of head and neck pain." *Otolaryngologic Clinics of North America*. 36, no. 6(2003): 1171-85 UI 15025015.

Careful selection of an effective analgesic regimen based on the amount and type of pain the patient is expected to have can prevent the stress and anxiety associated with breakthrough pain. When analgesics fail, it is not unusual for patients to go to desperate lengths to seek relief. The clinician can and should develop various effective, safe analgesic regimens based on estimates of anticipated pain intensity that apply sound pharmacological principles. [References: 19]

Ponce de Leon, S., et al. "A comparison of three rating scales for measuring subjective phenomena in clinical research. II. Use of experimentally controlled visual stimuli." *Archives of Medical Research*. 35, no. 2(2004): 157-62 UI 15010197.

BACKGROUND: In a previous study of three types of global scales we found that verbal rating scales were particularly reliable for rating auditory stimuli. We now wanted to check the performance of the scales for rating experimentally controlled visual stimuli. **METHODS:** We used a prospective, experimentally controlled, clinimetric study, which was conducted at the Department of Psychiatry of the Autonomous University of Puebla Medical School in the state capital city of Puebla, Mexico. A total of 20 fifth-year medical students participated in the study. Visual stimuli consisted of 15 cards with five different intensities on the gray-to-black scale, administered randomly in three sessions to each subject. With regard to main outcome measurement, validity and consistency indices were determined for visual analog scale (VAS), numerical rating score (NRS), and verbal rating scale (VRS) to rate visual stimuli. **RESULTS:** For validity, correlation coefficients between scales and reference standard were high, especially in VRS ($r=0.902$). For consistency, VRS had highest kappa value ($k(w)=0.71$) for interobserver variability. **CONCLUSIONS:** Three instruments could be hierarchically ranked for their indices of validity and consistency. Being more consistent than VAS and NRS, VRS merits more frequent usage in clinical research.

Popescu, A., and R. S. Salcido. "Wound pain: a challenge for the patient and the wound care specialist." *Advances in Skin & Wound Care*. 17, no. 1(2004): 14-20; quiz 21-2 UI 14752323.

PURPOSE: To provide physicians and nurses with an overview of the mechanisms, pathophysiology, assessment, and treatment of pain related to pressure ulcers. **TARGET AUDIENCE:** This continuing education activity is intended for physicians and nurses with an interest in learning about management of patients with pressure ulcer-related pain. **LEARNING OBJECTIVES:** After reading the article and taking the test, the participant will be able to: 1. Describe the mechanisms and pathophysiology of pain related to pressure ulcers. 2. Identify assessment parameters and treatment options for pain related to pressure ulcers. [References: 37]

Porter-Williamson, K., E. Heffernan, and C. F. Von Gunten. "Pseudoaddiction." *Journal of Palliative Medicine*. 6, no. 6(2003): 937-9 UI 14733689.

Pukall, C. F., Y. M. Binik, and S. Khalife. "A new instrument for pain assessment in vulvar vestibulitis syndrome." *Journal of Sex & Marital Therapy*. 30, no. 2(2004): 69-78 UI 15043051.

Vulvar vestibulitis syndrome (VVS) is a common form of dyspareunia in premenopausal women. The standard test for diagnosing VVS is the cotton-swab test, during which a cotton-swab is applied to various locations of the vulvar vestibule. However, there is much variation in the implementation of this test relating to the precise vestibular locations palpated, the order of palpation, and the force used during palpation. We introduce a new simple, mechanical device, a vulvalgesiometer, to standardize genital pain assessment and present promising preliminary data from women with VVS and nonaffected women. These data indicate that women with VVS have significantly lower vestibular pain thresholds compared with control women. During painful vulvar stimulation with the vulvalgesiometer, women with VVS described the pain with adjectives similar to those used to describe their intercourse pain

(e.g., burning). This novel device has several important implications for genital pain measurement in women who suffer from urogenital pain.

Quatan, N., et al. "Sticks and stones: use of acupuncture in extracorporeal shockwave lithotripsy.[see comment]." *Journal of Endourology*. 17, no. 10(2003): 867-70 UI 14744351.

BACKGROUND AND PURPOSE: Extracorporeal shockwave lithotripsy (SWL) is an effective noninvasive, outpatient method of stone clearance. In our unit, it is performed using a combination of oral analgesia and intravenous sedation, which allows us to treat to therapeutic levels in the vast majority of our patients. However, we have encountered patients who do not tolerate various elements of the analgesia protocol and thus cannot be treated to full effect. The options for these people are currently limited to either SWL under formal sedation or epidural or general anesthetic or the use of another technique of stone clearance, such as percutaneous nephrolithotomy, which may not be as appropriate, and again necessitates an anesthetic, an inpatient stay, or both. **PATIENTS AND METHODS:** We describe three patients who had previously failed SWL who received acupuncture in place of standard analgesia prior to the next treatment. **RESULTS:** All three patients were able to tolerate the procedure better and were treated at a higher level with more shocks than in the previous session. No side effects were noted. **CONCLUSIONS:** We propose that acupuncture may be considered in patients unable to take standard sedoanalgesia. It is a cost-effective, safe method of inducing sedation with analgesia and had no demonstrable side effects in our series. It provides an attractive alternative to the use of general or regional anesthetics in these patients.

Quittenbaum, B. H., and B. Grahn. "Quality of life and pain in Parkinson's disease: a controlled cross-sectional study." *Parkinsonism & Related Disorders*. 10, no. 3(2004): 129-36 UI 15036166.

PURPOSE: To compare health-related quality of life (HRQL) and pain symptoms in patients with PD with a matched control group. To our knowledge, controlled studies of Parkinson's disease (PD) patients within this area are rare. **SCOPE:** Fifty-seven patients and 95 controls took part in a self-administered questionnaire study. The instruments were the SF-36, visual analogue scales, pain drawing and pain-specific questions. **CONCLUSIONS:** Pain problems are common in PD patients but also to a large extent in the normal population. HRQL was reduced ($p < \text{or} = 0.001$) for the PD patients on all the scales on the SF-36 and consequently also in the pain dimension. The study indicates that even PD patients, who are optimally diagnosed and treated by a neurologist, might require additional rehabilitation treatment to improve their HRQL and pain problems.

Rajagopal, A., and E. D. Bruera. "Improvement in sexual function after reduction of chronic high-dose opioid medication in a cancer survivor." *Pain Medicine*. 4, no. 4(2003): 379-83 UI 14750918.

OBJECTIVE: To demonstrate improvement in sexual function after reduction of opioids. **METHODS:** This was a retrospective examination of a single patient at the cancer pain management clinic at M.D. Anderson Cancer Center in Houston, Texas. The patient was a 58-year-old male, free of cancer for 12 years, with chronic low back pain from a prior retroperitoneal mass. Changes in scores from the Brief Male Sexual Inventory and visual analog scale pain questionnaires were used to evaluate the patient. **RESULTS:** In this patient, a decrease in morphine-equivalent daily dose from 690 mg to 20 mg resulted in a significant increase in sexual function. Sexual inventory scores increased from 4 to 43. **CONCLUSIONS:** Reduction in opioid consumption can dramatically increase libido and sexual function. A possible mechanism involves opioid-related effects on the hypothalamic-pituitary-gonadal axis.

Reimer, S. "Cultural differences change pain scale ratings in Togo." *Journal of Emergency Nursing*. 30, no. 1(2004): 8 UI 14765075.

Riley, J., et al. "A retrospective study of the association between haematological and biochemical parameters and morphine intolerance in patients with cancer pain." *Palliative Medicine*. 18, no. 1(2004): 19-24 UI 14982203.

BACKGROUND: Morphine is the strong opioid of choice for the treatment of moderate to severe cancer pain according to guidelines of the World Health Organization (WHO). However, a minority of patients do not receive the desired analgesic effect or suffer intolerable side effects from morphine, and are switched to alternative opioids. **METHODS:** The aim of this retrospective study was to identify factors that might be associated with morphine intolerance.

Data were analysed from 100 controls who tolerated morphine and 77 patients who were switched to an alternative opioid. We investigated whether currently logged data could fully explain the need to switch. Demographic details, cancer type (histological diagnosis) and markers related to organ function were included in an analysis of biochemical and haematological parameters. RESULTS: Patients over 78 years ($P = 0.03$), or with a high white cell ($P = 0.002$) or high platelet count ($P = 0.003$), were more likely to switch. Although our numbers were small, patients with severe organ impairment were more likely to switch. However, a model including white cell count, platelet count, age, serum albumin and alkaline phosphatase, accurately separated switchers and controls in only 68% of cases. There was no significant difference between the two groups in terms of the numbers of patients having cytotoxic drugs in the two weeks prior to the haematological and biochemical analysis. Similarly, there were no significant differences in histological diagnoses between groups. CONCLUSIONS: The white cell count was the strongest single effect observed and, as such, warrants further investigation. Further studies are needed in order to accurately define a model that will predict those patients likely to be intolerant of morphine.

Robaux, S., et al. "Tramadol added to 1.5% mepivacaine for axillary brachial plexus block improves postoperative analgesia dose-dependently." *Anesthesia & Analgesia*. 98, no. 4(2004): 1172-7, table of contents UI 15041620.

Adjuncts to local anesthetics for peripheral plexus blockade may enhance the quality and duration of anesthesia and postoperative analgesia. The analgesic, tramadol, has a unique mechanism of action that suggests efficacy as such an adjunct. It displays a central analgesic and peripheral local anesthetic effect. We designed a prospective, randomized, controlled and double-blind clinical trial to assess the effect of tramadol added to brachial plexus anesthesia. One-hundred patients scheduled for carpal tunnel release surgery under brachial plexus anesthesia were randomized into four groups. All patients received 1.5% mepivacaine 40 mL plus a study solution containing either isotonic sodium chloride (Group P, $n = 17$), tramadol 40 mg (Group T(40), $n = 22$), tramadol 100 mg (Group T(100), $n = 20$) or tramadol 200 mg (Group T(200), $n = 20$). We evaluated the time of onset of anesthesia, duration of sensory and motor blockade, duration and quality of postoperative analgesia, and occurrence of adverse effects. Onset and duration of sensory and motor blocks were not different among groups. The number of patients requesting analgesia in the postoperative period was significantly less in the 3 tramadol groups compared with the placebo group ($P = 0.02$); this was also noted with the placebo and T(40) groups compared with the T(200) group. No statistical significance was demonstrated between the placebo and the T(40) group or the T(100) group and the T(200) group. Furthermore, there was a significant trend effect among groups applying the Cochran-Armitage tendency test ($P = 0.003$), suggesting a dose-dependent decrease for additional postoperative analgesia requirements when tramadol was added. Side effects did not differ among groups, although they were more frequently recorded in the T groups. Our study suggests that tramadol added to 1.5% mepivacaine for brachial plexus block enhances in a dose-dependent manner the duration of analgesia with acceptable side effects. However, the safety of tramadol has to be investigated before allowing its use in clinical practice. IMPLICATIONS: Tramadol's unique mechanism of action suggests efficacy as a local anesthetic adjunct for peripheral plexus blockade. Our study demonstrates that tramadol, added to mepivacaine for brachial plexus anesthesia, extends the duration and improves the quality of postoperative analgesia in a dose dependent fashion with acceptable side effects.

Roberts, L. J., and M. Thackray. "Recovery intervention to manage severe pain: comparing apples with oranges?" *Anaesthesia & Intensive Care*. 31, no. 6(2003): 699-700 UI 14719437.

Rogano, L., M. J. Teixeira, and G. Lepski. "Chronic pain after spinal cord injury: clinical characteristics." *Stereotactic & Functional Neurosurgery*. 81, no. 1-4(2003): 65-9 UI 14742966.

The clinical characteristics of chronic pain in spinal cord injury patients are controversial. The authors prospectively evaluated 81 patients with chronic pain due to spinal cord lesions. The mean pain intensity according to the visual analogue scale was 9.4. The most common description of pain was a sensation of burning. The initial pain was more severe in patients presenting with myelopathy due to gunshot injuries ($p < 0.001$). The pain intensity was not associated with the magnitude of the spinal lesion, location of the lesion, occurrence of myofascial pain syndrome or onset of pain. Pain after spinal cord injury was severe, males

were more frequently affected and it was more intense when it was the result of gunshot injury. In about 38% of the patients, pharmacological and rehabilitative procedures were effective. Dorsal root entry zone lesion was effective for the treatment of transitional pain in patients with complete section of the spinal cord, spinal cord stimulation was effective for patients with partial lesions of the spinal cord and intrathecal opioid infusion was effective for both conditions. Copyright 2003 S. Karger AG, Basel

Rosenberg, M., and J. C. Phero. "Regional anesthesia and invasive techniques to manage head and neck pain." *Otolaryngologic Clinics of North America*. 36, no. 6(2003): 1201-19 UI 15025017.

Regional anesthesia of the head and neck is an effective method of obtaining surgical anesthesia for various procedures. Diagnostic and therapeutic head and neck blocks can also assist with the diagnosis and management of many chronic pain conditions, including headache, postherpetic neuralgia, and cancer pain in this region. Gamma knife surgery offers a unique approach to the management of refractory trigeminal neuralgia. Because of the proximity of so many critical structures adjacent to these nerves, a solid understanding of the anatomical basis of these nerve blocks is necessary. Appropriate patient selection, monitoring, proper injection technique, knowledge of the pharmacokinetics and pharmacodynamics of local anesthetics and vasoconstrictors, possible drug interactions, and recommended doses will ensure safe and successful application of head and neck nerve blockade. [References: 34]

Rowbotham, M. C., N. S. Manville, and J. Ren. "Pilot tolerability and effectiveness study of levetiracetam for postherpetic neuralgia." *Neurology*. 61, no. 6(2003): 866-7 UI 14504347.

Rozen, T. D. "Melatonin as treatment for idiopathic stabbing headache." *Neurology*. 61, no. 6(2003): 865-6 UI 14504346.

Sahin, I., et al. "Dysmenorrhea treatment with a single daily dose of rofecoxib." *International Journal of Gynaecology & Obstetrics*. 83, no. 3(2003): 285-91 UI 14643039.

OBJECTIVES: To investigate the efficacy of single daily doses of rofecoxib, a selective inhibitor of cyclooxygenase-2, in dysmenorrhea. METHODS: Fifty-five patients were included in this randomized, placebo-controlled, cross-over study. Patients were randomized to use placebo, naproxen sodium (550 mg), 25 and 50 mg doses of rofecoxib in various orders. Pain intensity, analgesic efficacy of drugs, total number of pills used and side effects were evaluated. RESULTS: Rofecoxib with daily single doses of 25 and 50 mg decreased the pain intensity in a manner similar to naproxen sodium. Most of the patients (85.45% and 96.46%) evaluated the analgesic efficacy of rofecoxib as 'perfectly effective'. Rofecoxib was found to be effective for pain relief both in primary and secondary dysmenorrhea. Gastrointestinal adverse effects were less than those with naproxen sodium. CONCLUSIONS: A 'one a day' dose of 25 mg rofecoxib is an effective choice with lower gastrointestinal adverse effects than naproxen sodium.

Sanchis, J., et al. "Predictors of short-term outcome in acute chest pain without ST-segment elevation." *International Journal of Cardiology*. 92, no. 2-3(2003): 193-9 UI 14659853.

BACKGROUND: Management of acute chest pain in the emergency room constitutes a challenge. METHODS: Seven hundred and one consecutive patients were evaluated by clinical history (chest pain score and risk factors), ECG, troponin I and early (<24 h) exercise testing in low risk patients (n=165). A composite end-point (recurrent unstable angina, acute myocardial infarction or cardiac death) was recorded during hospital stay or in ambulatory care settings for patients discharged after early exercise testing. RESULTS: The end-point occurred in 122 patients (17%). Multivariate analysis identified the following predictors: chest pain score \geq 11 points (OR=1.8, 2-2.8, 95% CI, P=0.007), age \geq 68 (OR 1.6, 1.1-2.4 CI 95%, P=0.03), insulin-dependent diabetes mellitus (OR 1.9, 1.1-3.4 CI 95%, P=0.02), a history of coronary surgery (OR 3.3, 1.5-7.2 CI 95%, P=0.003), ST-segment depression (OR 1.9, 1.2-3.0 CI 95%, P=0.009) and troponin I elevation (OR 1.6, 1.1-2.5, CI 95%, P=0.05). ST-segment depression produced a high end-point increase (31 vs. 13%, P=0.0001). Troponin I elevation increased the risk in the subgroup without ST-segment depression (20 vs. 11%, P=0.006) but did not further modify the risk in the subgroup with ST depression (31 vs. 28%, ns). Nevertheless, the negative ECG and troponin I subgroup showed a non-negligible end-point rate (16% when pain score \geq 11 or 7% when pain score < 11, P=0.004). Finally, no patient with a negative exercise test presented events compared to 7% of those with a non-negative test (RR=2.5, 2.1-3.1 95% CI, P=0.01). CONCLUSIONS: Emergency room evaluation

of chest pain should not focus on a single parameter; on the contrary, the clinical history, ECG, troponin and early exercise testing must be globally analysed.

Sathirapanya, P. "Anginal cephalgia: a serious form of exertional headache." *Cephalalgia*. 24, no. 3(2004): 231-4 UI 15009018.

Sawyer, S. "Femoral nerve block for pain relief after total knee replacement." *Professional Nurse*. 19, no. 6(2004): 333-7 UI 14983606.

Major knee surgery can result in severe postoperative pain, especially in older people. When it is inadequately controlled, such pain can have a serious impact on the patient's physical state and their quality of life. This paper looks at the use in one hospital of femoral nerve block techniques to complement other pain-management methods following a total knee replacement operation. [References: 30]

Scheffler, J., et al. "Application of rhenium-188 HEDP in bone metastases therapy." *Nuclear Medicine Review*. 6, no. 1(2003): 55-7 UI 14600935.

Radionuclide bone metastases therapy is a major achievement of nuclear medicine. Development of less radiotoxic and more effective radiopharmaceuticals is therefore a challenge for radiopharmacists and industry. This paper reviews the application of rhenium-188 HEDP as a reactor- or generator-produced nuclide for bone metastases therapy. [References: 19]

Schim, J. "Effect of preventive treatment with botulinum toxin type A on acute headache medication usage in migraine patients." *Current Medical Research & Opinion*. 20, no. 1(2004): 49-53 UI 14741072.

OBJECTIVE: To evaluate the impact of preventive treatment of migraine with botulinum toxin type A (BoNT-A as BOTOX) on the amount of acute headache medications used. RESEARCH DESIGN AND METHODS: Data from four studies of BoNT-A treatment for migraine were pooled for an aggregate analysis. All studies were at least 12 weeks in duration. For each study, the amounts of headache medications used at weeks 8-12 following BoNT-A treatment were compared with pretreatment baseline amounts and expressed preventive headache care considering acute as a percentage change. MAIN OUTCOME MEASURES: The mean value for the reduction in medication usage was calculated by pooling data from the individual studies and weighting the data according to the sample size of each study. RESULTS: Four studies (one published, and three presented as recent meeting abstracts) with a total of 167 patients quantified acute headache medication use before and after BoNT-A treatment. The weighted average reduction in medication usage (primarily triptans) was 57% (range 38-75%). CONCLUSIONS: The results of this pooled analysis indicated a 57% reduction in acute headache medication use in the 8- to 12-week period following injection of BoNT-A. A reduction of this magnitude could represent substantial savings in the costs of acute medications. This could help to offset the total cost of treatment and suggests BoNT-A may be a cost-reasonable option for medication offsets alone especially in patients with chronic headache with higher acute medication use. Additional larger controlled efficacy and safety studies must be done to confirm these results since three of the four studies were preliminary research and of different study types. Further prospective studies of direct and indirect costs, including those for disability and lost productivity, are needed to evaluate the overall impact of BoNT-A therapy on the economic, societal, and individual burden of migraine headache. [References: 29]

Schuster, M., et al. "Cost drivers in patient-controlled epidural analgesia for postoperative pain management after major surgery." *Anesthesia & Analgesia*. 98, no. 3(2004): 708-13, table of contents UI 14980925.

In this retrospective study, we determined efficiency, treatment length, and resource use for postoperative pain management with patient-controlled epidural analgesia (PCEA) in 350 consecutive patients undergoing major abdominal, thoracic, gynecological, or orthopedic surgery. Average pain scores on a visual analog scale were 16 +/- 23 and 9 +/- 16 (visual analog scale range, 0 to 100) on postoperative Days 1 and 3, respectively, and were similar among groups. The treatment length was 4.9 +/- 2.2 days in general surgical, 5.2 +/- 3.1 days in gynecological, and 4.5 +/- 2.8 days in orthopedic patients. The total volumes of the mixture of local anesthetic and opioid received epidurally were 707 +/- 507 mL, 770 +/- 576 mL, and 593 +/- 456 mL in the general surgical, gynecological, and orthopedic groups, respectively. The average total costs for all groups for the full treatment course with PCEA

were 447 +/- 218 per case (1 equals approximately US dollar 1). Fifty-one percent of these costs were staff costs, 20% were costs for the applied drugs, 15% were costs for PCEA pumps and pump material, and 13% were costs for the initial catheter insertion. In the light of these costs and the availability of less costly alternatives, measurements for cost containment by using PCEA are recommended. Because treatment length is the main cost driver both for drug and staff costs, close monitoring of treatment length and a predefined migration path to alternative techniques after PCEA should be considered. IMPLICATIONS: Patient-controlled epidural analgesia is increasingly used as first-line treatment for postoperative pain management. In this study, costs and cost drivers are analyzed for the first time for this new technique, based on 350 cases of pain therapy after major surgery in a university hospital.

Servoss, S. J., et al. "Tirofiban therapy for patients with acute coronary syndromes and prior coronary artery bypass grafting in the PRISM-PLUS trial." *American Journal of Cardiology*. 93, no. 7(2004): 843-7 UI 15050486.

The role of glycoprotein IIb/IIIa platelet receptor antagonist therapy for patients with an acute coronary syndrome (ACS) and a history of coronary artery bypass grafting (CABG) remains incompletely defined. We examined the outcomes of patients with an ACS and prior CABG who were treated with tirofiban versus placebo among subjects with prior CABG in the Platelet Receptor Inhibition in Ischemic Syndrome Management in Patients Limited by Unstable Signs and Symptoms (PRISM-PLUS) trial. Of 1,570 patients treated with tirofiban plus heparin (n = 773) or heparin alone (n = 797), 231 had prior CABG. Compared with patients without prior CABG, those with prior CABG were more likely to have risk factors for a complicated ACS course, including severe coronary artery disease and heart failure (all p <0.0001), typically had clinical predictors of benefit from tirofiban, such as ST-segment depression (p = 0.01) or a TIMI risk score ≥ 4 (p <0.001), and were more likely to die or have a myocardial infarction or refractory ischemia at all time points examined (p <0.0001). Among patients with prior CABG, decreases in the incidence of death, myocardial infarction, or refractory ischemia with tirofiban and heparin versus heparin alone were noted at 7 and 30 days (7 days: 16.9% vs 29.0%, p = 0.035; 30 days: 25.0% vs 40.2%, p = 0.015). Trends toward a decrease in death, myocardial infarction, and refractory ischemia with tirofiban and heparin versus heparin alone in the prior CABG subgroup were noted at 48 hours and 180 days (48 hours: 6.5% vs 14.0%, p = 0.09; 180 days: 37.1% vs 48.6%, p = 0.057). Bleeding rates were similar in patients with and without prior CABG. Tirofiban was well tolerated and tended to decrease the considerable risk for ischemic ACS complications in patients with prior CABG.

Seskevich, J. E., et al. "Beneficial effects of noetic therapies on mood before percutaneous intervention for unstable coronary syndromes." *Nursing Research*. 53, no. 2(2004): 116-21 UI 15084996.

BACKGROUND: Many common medical, surgical, and diagnostic procedures performed for conscious patients can be accompanied by significant anxiety. Mind-body-spirit interventions could serve as useful adjunctive treatments for the reduction of stress. OBJECTIVE: To evaluate the effects of stress management, imagery, touch therapy, remote intercessory prayer, and standard therapy on mood in patients awaiting percutaneous interventions for unstable coronary syndromes as part of the Monitoring and Actualization of Noetic Training (MANTRA) trial, which explored the feasibility and efficacy of noetic interventions on clinical outcomes in a randomized clinical trial. METHODS: A total of 150 patients were randomized to one of the five treatment conditions. Stress management, imagery, and touch therapy were administered in 30-minute treatment sessions immediately before the cardiac intervention. Intercessory prayer was not necessarily contemporaneous with these treatments. Mood was assessed by a set of visual analog scales before and after treatment for a similar length of time for the standard therapy and prayer groups. RESULTS: Analysis of complete data from 108 patients showed that stress management, imagery, and touch therapy all produced reductions in reported worry, as compared with standard therapy, whereas remote intercessory prayer had no effect on mood. The ratings of other similar moods were not affected, perhaps because of the relatively positive emotional state observed in the participants before treatment. CONCLUSIONS: The results suggest that at least some noetic therapies may have beneficial effects on mood in the course of medical and surgical interventions. Administration of these interventions was feasible even in the hectic environment of the coronary intensive care unit. Given their relatively low cost and limited potential for adverse effects, these interventions merit further study as therapeutic adjuncts.

Shah, F. R., et al. "Improvement in postoperative pain relief by the addition of midazolam to an intrathecal injection of buprenorphine and bupivacaine." *European Journal of Anaesthesiology*. 20, no. 11(2003): 904-10 UI 14649343.

BACKGROUND AND OBJECTIVE: Intrathecal injections of the benzodiazepine midazolam have been reported to cause antinociception in animals and pain relief in human beings, including the potentiation of opioid analgesia. This study compared the efficacy of the addition of midazolam to a mixture of buprenorphine and bupivacaine used for spinal anaesthesia. **METHODS:** The study was prospective, randomized, and observer blinded. It involved 60 patients (30 per group), ASA I and II, age 20-40 yr, undergoing minor and intermediate lower abdominal surgery under spinal anaesthesia. Patients were randomized into two groups: the control group received a spinal injection of hyperbaric bupivacaine (15 mg) plus buprenorphine (0.15 mg) and the experimental group received a spinal injection of the same two drugs and doses but supplemented with intrathecal midazolam (2 mg). **RESULTS:** The duration of postoperative analgesia in the control group was 9.24 +/- 2.57 h (mean +/- SEM), and 21.33 +/- 12.69 h in the midazolam treated group ($P < 0.001$). Patients treated with intrathecal midazolam had better pain relief judged by visual analogue score on coughing ($P = 0.0013$) and a nursing mobility score ($P < 0.0001$). Adverse effects were minor and their incidence was similar in both groups. **CONCLUSIONS:** We conclude that intrathecal midazolam 2 mg improves the quality and duration of postoperative pain relief afforded by intrathecal buprenorphine and bupivacaine.

Shmueli, A. "The relationship between the visual analog scale and the SF-36 scales in the general population: an update." *Medical Decision Making*. 24, no. 1(2004): 61-3 UI 15005955.

OBJECTIVE: To update the 1993 relationship between the visual analog scale (VAS) and the 8 SF-36 scales found in the Israeli Jewish urban population aged 45 to 75 years and reported in *Medical Decision Making*. **METHODS:** Interviews with a sample of 2505 persons representing the same population in 2000 were used to estimate the above relationship. **RESULTS:** The distributions of the VAS and the SF-36 8 scales were similar in 1993 and in 2000. In 2000, the Role-Emotional scale was not associated with the VAS, while the General Health scale proved to be its major determinant. Generally, the effects of the SF-36 scales on the VAS did not change between 1993 and 2000. **DISCUSSION:** The relationship between the VAS and the SF-36 scales was found generally stable in the general population between 1993 and 2000, controlling for sociodemographic changes. The estimated relationship might be useful in predicting VAS scores from SF-36 scales in the general population.

Skilton, M. "Post-operative pain management in day surgery." *Nursing Standard*. 17, no. 38(2003): 39-44 UI 12808841.

BACKGROUND: The author carried out a literature review of post-operative pain management in day surgery units. **CONCLUSION:** Based on this review, the article makes recommendations for: pre-operative information for patients about their proposed surgery and strategies for pain relief during their stay; a recovery protocol for the administration of intravenous opioids of choice, in titrated doses, by appropriately qualified nurses; and a protocol for the administration of oral analgesia by nurses, from a prescribed list, for patients in pain on the ward. [References: 17]

Slotman, B. J., et al. "Patients' appreciation of single fraction radiotherapy for painful bone metastases." *Palliative Medicine*. 18, no. 1(2004): 72-3 UI 14982212.

Smith, R. L., S. Pruthi, and L. A. Fitzpatrick. "Evaluation and management of breast pain." *Mayo Clinic Proceedings*. 79, no. 3(2004): 353-72 UI 15008609.

Pain is one of the most common breast symptoms experienced by women. It can be severe enough to interfere with usual daily activities, but the etiology and optimal treatment remain undefined. Breast pain is typically approached according to its classification as cyclic mastalgia, noncyclic mastalgia, and extramammary (nonbreast) pain. Cyclic mastalgia is breast pain that has a clear relationship to the menstrual cycle. Noncyclic mastalgia may be constant or intermittent but is not associated with the menstrual cycle and often occurs after menopause. Extramammary pain arises from the chest wall or other sources and is interpreted as having a cause within the breast. The risk of cancer in a woman presenting with breast pain as her only symptom is extremely low. After appropriate clinical evaluation, most patients with breast pain respond favorably to a combination of reassurance and nonpharmacological measures. The medications danazol, tamoxifen, and bromocriptine are effective; however, the

potentially serious adverse effects of these medications limit their use to selected patients with severe, sustained breast pain. The status of other therapeutic strategies and directions for future research are discussed. [References: 223]

Souron, V., Y. Reiland, and L. Delaunay. "Pleural effusion and chest pain after continuous interscalene brachial plexus block." *Regional Anesthesia & Pain Medicine*. 28, no. 6(2003): 535-8 UI 14634945.

OBJECTIVE: We describe a unique case of a patient who experienced atelectasis of the lower lobe of the left lung and pleural effusion manifested by chest pain after continuous interscalene brachial plexus block for postoperative analgesia. CASE REPORT: A 45-year-old man with no respiratory disease was scheduled for left shoulder arthroscopy for rotator cuff repair under interscalene brachial plexus block and sedation. A continuous interscalene brachial plexus block provided postoperative analgesia. On the first postoperative day, the patient reported left-sided chest pain. The chest x-ray showed elevation of the left hemidiaphragm associated with a left lower lobe atelectasis and a minor pleural effusion. After catheter removal, clinical and radiologic signs resolved within few days without sequela. CONCLUSION: If chest pain presents after interscalene brachial plexus block, early postoperative chest x-ray is recommended to rule out pneumothorax, atelectasis, and/or pleural effusion secondary to ipsilateral phrenic block.

Stiller, C. O., et al. "Microdialysis in pain research." *Advanced Drug Delivery Reviews*. 55, no. 8(2003): 1065-79 UI 12935945.

In vivo microdialysis has been used in preclinical pain research for more than a decade. This valuable tool allows correlations between nociceptive behavior and neurotransmitter release in pain-related CNS sites. However, several methodological issues must be considered to adequately interpret microdialysis data. Thus, the aim of this review is to describe key considerations, potential pitfalls, and important control experiments. We focus on animal experiments which evaluate the effects of noxious stimulation on CNS neurotransmitter release, particularly those that address clinically relevant problems in patients with long-lasting painful conditions. [References: 123]

Stone, L. S., and L. Vulchanova. "The pain of antisense: in vivo application of antisense oligonucleotides for functional genomics in pain and analgesia." *Advanced Drug Delivery Reviews*. 55, no. 8(2003): 1081-112 UI 12935946.

As the genomic revolution continues to evolve, there is an increasing demand for efficient and reliable tools for functional characterization of individual gene products. Antisense oligonucleotide-mediated knockdown has been used successfully as a functional genomics tool in animal models of pain and analgesia yet skepticism regarding the validity and utility of antisense technology remains. Contributing to this uncertainty are the lack of systematic studies exploring antisense oligonucleotide use in vivo and the many technical and methodological challenges intrinsic to the method. This article reviews the contributions of antisense oligonucleotide-based studies to the field of pain and analgesia and the general principles of antisense technology. A special emphasis is placed on technical issues surrounding the successful application of antisense oligonucleotides in vivo, including sequence selection, antisense oligonucleotide chemistry, DNA controls, route of administration, uptake, dose-dependence, time-course and adequate evaluation of knockdown. [References: 168]

Takano, Y., et al. "Lidocaine or fentanyl applied to the surgical wound during spinal surgery produces potent postoperative analgesia." *Canadian Journal of Anaesthesia*. 50, no. 7(2003): 751-2 UI 12944456.

Tateishi, M., et al. "Interindividual variation in the ratio between plasma morphine and its metabolites in cancer patients." *International Journal of Clinical Pharmacology Research*. 23, no. 2-3(2003): 75-82 UI 15018021.

In 25 cancer patients treated with slow-release oral morphine and in 10 cancer patients treated with continuous infusion of morphine, plasma steady-state concentrations of morphine (M), morphine-3-glucuronide (M-3-G) and morphine-6-glucuronide (M-6-G) were determined by high-performance liquid chromatography. Blood samples were withdrawn at 0, 2 and 6 h after oral administration in patients treated with slow-release oral morphine and once or twice a day in patients treated with continuous infusion of morphine. In four cancer patients treated with continuous infusion of morphine, in order to analyze chronopharmacokinetic variability,

the M-3-G/M ratio was observed at 12:00 h and 24:00 h. No significant changes were observed in M-3-G/M ratios and M-6-G ratios at 0, 2, and 6 h after oral administration of morphine. The M-3-G/M ratio (38.6 +/- 25.7) in the oral morphine group was significantly higher than that (15.3 +/- 12.9) in the continuous infusion group ($p < 0.01$). There was an approximately 10-fold interindividual variation in the M-3-G/M ratio both in the continuous infusion group and in the oral morphine group. These results suggest that the activity of UDP glucuronosyltransferase 2B7 in the intestinal metabolism of morphine may play an active part in a large interindividual variation in the ratio of metabolites to morphine. Further studies are needed to clarify this hypothesis.

Teixeira, M. J., et al. "Bulbar trigeminal stereotactic nucleotracotomy for treatment of facial pain." *Stereotactic & Functional Neurosurgery*. 81, no. 1-4(2003): 37-42 UI 14742962.

Many pharmacological and surgical treatments are available for the treatment of chronic facial pain. However, many of them are expensive and often very ineffective. Past publications suggested that bulbar trigeminal stereotactic nucleotracotomy is a very useful procedure for the treatment of neuropathic or oncologic facial pain. The authors describe the results of treatment with stereotactic nucleotracotomy in 58 patients with chronic facial pain. The intensity of the pain was evaluated according to the visual analogue scale, and daily life activities were also evaluated. The conclusion was that this procedure is a safe and effective method for treatment of postherpetic neuralgia, Wallenberg's syndrome and oncologic facial pain but not of trigeminal neuralgia. Copyright 2003 S. Karger AG, Basel

Teplitsky, I., et al. "Acute and intermediate-term results of percutaneous coronary stenting in octogenarian patients." *International Journal of Cardiovascular Interventions*. 5, no. 4(2003): 195-9 UI 14630562.

BACKGROUND: Percutaneous coronary intervention (PCI) in octogenarian patients has been associated with increased cardiovascular morbidity and mortality. This study aimed to assess acute and intermediate-term clinical outcomes among octogenarians undergoing PCI. **METHODS:** The authors identified 97 consecutive patients aged $>$ or $=80$ years who underwent PCI using stents between November 2000 and February 2002 at their institution. The patients were divided into three groups according to clinical presentation: (1) acute myocardial infarction (AMI, $n = 31$); (2) unstable angina pectoris (UAP, $n = 28$); and (3) stable angina pectoris (SAP, $n = 38$). Procedural data, and in-hospital and six-month clinical outcomes were obtained and adjudicated for all patients. **RESULTS:** Overall mean age was 84 ± 3 years, 67% of patients were males and 73% had multivessel coronary disease. In-hospital outcomes varied according to clinical presentation: procedural success was 78% in AMI patients (including shock patients), 93% in UAP, and 95% in SAP patients. Likewise, hospital mortality was 26% in AMI, 3.6% in UAP, and 0% in SAP patients ($p = 0.0003$). Among AMI patients, hospital mortality was extremely high in patients with cardiogenic shock (67% versus 4.6% in AMI without shock, $p < 0.0001$). Cumulative event rate at six months also varied according to clinical presentation: mortality/MI and target vessel revascularization (TVR) rates were 29%, 3.6%, and 0% in AMI, 7.1%, 7.4%, and 11% in UAP and 0%, 5.3%, and 7.9% in SAP patients. Multivariate analysis identified cardiogenic shock as the most powerful risk factor for predicting mortality (odds ratio = 42, $p = 0.03$). **CONCLUSIONS:** These results show that clinically stable octogenarian patients undergoing PCI have favorable procedural and intermediate-term prognosis. In contrast, cardiogenic shock has a profound negative prognostic impact on octogenarians despite 'aggressive' PCI attempts.

Turk, D. C. "Cognitive-behavioral approach to the treatment of chronic pain patients." *Regional Anesthesia & Pain Medicine*. 28, no. 6(2003): 573-9 UI 14634950.

BACKGROUND AND OBJECTIVES: Chronic pain is both prevalent and costly. Despite advances in understanding the anatomy, physiology, and biochemistry of nociception and development of potent analgesic agents and advanced technology, a significant number of people continue to experience pain and related disability. The perception of and response to pain are influenced by cognitive, affective, and behavioral factors as well as physical pathology. In this article, a selective review of research supporting the important contributions of psychologic factors is provided, a cognitive-behavioral perspective to understanding pain is presented, an integrative treatment and rehabilitation approach based on this perspective is described, and some of the evidence supporting the effectiveness of this treatment approach is summarized. **CONCLUSION:** Chronic pain by definition persists over a long period-it is a chronic disease. Even the most sophisticated treatments are incapable of eliminating all pain for all pain sufferers. There is also tremendous variation in how patients respond to

treatments provided and prescribed. Better treatment outcomes are likely to occur when the psychologic contributors and the physical factors involved are addressed. Moreover, a treatment approach based on the cognitive-behavioral perspective should help patients adapt to residual pain that remains after currently available treatments are undertaken. Thus cognitive-behavioral treatments should be viewed as important complements to more traditional pharmacological, physical, and surgical interventions. [References: 38]

van Tulder, M. W., et al. "Muscle relaxants for nonspecific low back pain: a systematic review within the framework of the cochrane collaboration." *Spine*. 28, no. 17(2003): 1978-92 UI 12973146.

STUDY DESIGN: A systematic review of randomized and/or double-blinded controlled trials. SUMMARY OF BACKGROUND DATA: The use of muscle relaxants in the management of nonspecific low back pain is controversial. It is not clear if they are effective, and concerns have been raised about the potential adverse effects involved. OBJECTIVES: The aim of this review was to determine if muscle relaxants are effective in the treatment of nonspecific low back pain. METHODS: A computer-assisted search of the Cochrane Library (Issue 2, 2002), MEDLINE (1966 up to October 2001), and EMBASE (1988 up to October 2001) was carried out. These databases were searched using the algorithm recommended by the Cochrane Back Review Group. References cited in the identified articles and other relevant literature were screened. Randomized and/or double-blinded controlled trials, involving patients diagnosed with nonspecific low back pain, treated with muscle relaxants as monotherapy or in combination with other therapeutic methods, were included for review. Two reviewers independently carried out the methodologic quality assessment and data extraction of the trials. The analysis comprised not only a quantitative analysis (statistical pooling) but also a qualitative analysis ("best evidence synthesis"). This involved the appraisal of the strength of evidence for various conclusions using a rating system based on the quality and outcomes of the studies included. Evidence was classified as "strong," "moderate," "limited," "conflicting," or "no" evidence. RESULTS: Thirty trials met the inclusion criteria. Twenty-three trials (77%) were of high quality; 24 trials (80%) were on acute low back pain. Four trials studied benzodiazepines, 11 nonbenzodiazepines, and 2 antispasticity muscle relaxants in comparison with placebo. Results showed that there is strong evidence that any of these muscle relaxants are more effective than placebo for patients with acute low back pain on short-term pain relief. The pooled relative risk for nonbenzodiazepines versus placebo after 2 to 4 days was 0.80 (95% confidence interval: 0.71 to 0.89) for pain relief and 0.49 (95% confidence interval: 0.25 to 0.95) for global efficacy. Adverse events, however, with a relative risk of 1.50 (95% confidence interval: 1.14 to 1.98) were significantly more prevalent in patients receiving muscle relaxants and especially the central nervous system adverse effects (relative risk 2.04; 95% confidence interval: 1.23 to 3.37). The various muscle relaxants were found to be similar in performance. CONCLUSIONS: Muscle relaxants are effective in the management of nonspecific low back pain, but the adverse effects require that they be used with caution. Trials are needed that evaluate if muscle relaxants are more effective than analgesics or nonsteroidal anti-inflammatory drugs. [References: 84]

Vercellini, P., et al. "Progestogens for endometriosis: forward to the past." *Human Reproduction Update*. 9, no. 4(2003): 387-96 UI 12926531.

We performed a MEDLINE and EMBASE search to identify all studies published in the last decade in the English language literature on the use of progestogens for the treatment of endometriosis. Our aim was to clarify the biological rationale for treatment and define the drugs that can be used with their doses, routes of administration, efficacy and tolerability. Progestogens may prevent implantation and growth of regurgitated endometrium inhibiting expression of matrix metalloproteinases and angiogenesis, and they have several anti-inflammatory in-vitro and in-vivo effects that may reduce the inflammatory state generated by the metabolic activity of the ectopic endometrium, and the consequent immune response. Oral contraceptives increase the abnormally low apoptotic activity of the endometrium of women with endometriosis. Moreover, anovulation, decidualization, amenorrhoea and the establishment of a steady estrogen-progestogen milieu contribute to disease quiescence. Progestogens are effective in the control of pain symptoms in approximately three out of four women with endometriosis. Their effect does not seem to be inferior to that of other drugs used for the disease. Different compounds can be administered by the oral, intramuscular, subcutaneous, intravaginal or intrauterine route, each with specific advantages or disadvantages. Medical treatment plays a role in the therapeutic strategy when administered over a prolonged period of time. Given their good tolerability, minor metabolic effects and low

cost, progestogens must therefore be considered drugs of choice and are currently the only safe and economic alternative to surgery. However, their contraceptive effectiveness limits their use to women who do not wish to have children in the short term. [References: 55]

Vogt, G., et al. "A preoperative retrobulbar block in patients undergoing scleral buckling reduces pain, endogenous stress response, and improves vigilance." *Regional Anesthesia & Pain Medicine*. 28, no. 6(2003): 521-7 UI 14634942.

BACKGROUND AND OBJECTIVES: This study aims to test postoperative analgesia by using retrobulbar block in patients with retinal detachment surgery. **METHODS:** Twenty-nine patients scheduled for scleral buckling were included in this double-blind, randomized, prospective study. After induction of general anesthesia and opening of the conjunctiva, patients received either 4 mL bupivacaine 0.5% or 4 mL saline 0.9% injected into the retrobulbar space preoperatively. Heart rate and blood pressure were documented before the start of anesthesia, 10 and 50 minutes later, and 60 minutes after completion of surgery. At the same time points, 10 mL of blood were withdrawn for measurement of glucose and cortisol levels to evaluate the efficacy of retrobulbar block in eliminating humoral response. Postoperative scores for pain and vigilance were recorded 1, 6, and 24 hours after completion of surgery. The application of analgesic and antiemetic drugs was documented, as well as occurrence of nausea and vomiting. **RESULTS:** A preoperative retrobulbar block in patients undergoing scleral buckling reduces pain, endogenous stress response, and improves vigilance. **CONCLUSIONS:** Because the analgesic effect of the retrobulbar block was considerably longer than pharmacologically expected, the combined retrobulbar and general anesthesia "protects" against postoperative pain and is recommended for patients undergoing scleral buckling.

Vu, T. N. "Current pharmacologic approaches to treating neuropathic pain." *Current Pain & Headache Reports*. 8, no. 1(2004): 15-8 UI 14731378.

Most neuropathic analgesic medications have been introduced initially for other medical conditions. Anticonvulsants, local anesthetics, and antidepressants later were found to be effective in the treatment of neuropathic pain. Carbamazepine and the newer anticonvulsants such as gabapentin, lamotrigine, topiramate, and oxcarbazepine are being used as first-line or adjunctive therapy. The newer agents have less potential for drug interactions and a more favorable side-effect profile. Lidocaine administered systemically or topically is useful for some peripheral and central neuropathic pain conditions. The tricyclic antidepressants amitriptyline, nortriptyline, and desipramine have been shown to be effective for the management of neuropathic pain, independent of their antidepressant property. All of the available analgesics have considerable side effects, which necessitate careful titration. Future drug research may focus on developing medications specifically for neuropathic pain. These designer agents may have more desirable action without the unwanted side effects.

Weddell, R. "Improving pain management for patients in a hospital burns unit." *Nursing Times*. 100, no. 11(2004): 38-40 UI 15060967.

The pain caused by burns can be unpredictable and its management is complex. In order to minimize the discomfort experienced by burns patients, it is important that health care professionals understand the principles of analgesia and the importance of delivering the right drugs at the right time. An audit in a burns unit revealed that nursing and medical staff lacked confidence in prescribing and administering analgesia, and as a result patients were experiencing uncontrolled pain. A new system of pain assessment and management was developed with an accompanying education programme, which resulted in improved pain management.

Weinbroum, A. A., et al. "Dextromethorphan-associated epidural patient-controlled analgesia provides better pain- and analgesics-sparing effects than dextromethorphan-associated intravenous patient-controlled analgesia after bone-malignancy resection: a randomized, placebo-controlled, double-blinded study." *Anesthesia & Analgesia*. 98, no. 3(2004): 714-22, table of contents UI 14980926.

Pain after bone malignancy surgery is intense and requires large amounts of analgesics. The augmented antinociceptive effects of dextromethorphan (DM), a N-methyl-D-aspartate receptor antagonist, were demonstrated previously. We assessed the use of postoperative patient-controlled epidural analgesia (PCEA) or IV patient-controlled analgesia (PCA) in patients undergoing surgery for bone malignancy under standardized combined general and epidural anesthesia with or without DM. Patients (n = 120) were randomly allocated to receive PCEA (ropivacaine 3.2 mg plus fentanyl 8 microg/dose) or IV-PCA (morphine 2 mg/dose)

postoperatively, starting at subjective visual analog scale pain intensity ≥ 4 of 10 for up to 96 h. Placebo or DM 90 mg orally (30 patients/group/set) was given in a double-blinded manner before surgery and for 2 days afterwards. Diclofenac 75 mg IM was available as a rescue drug. DM patients used PCA and rated their pain $>50\%$ less than their placebo counterparts in each set, especially during the first 2 postoperative days ($P < 0.01$). Hourly and overall maximal pain intensity among PCEA patients was approximately 50% less than in the IV-PCA set ($P < 0.01$). Diclofenac was used 42% less ($P < 0.01$) by the PCA-DM patients compared with their placebo counterparts. Seven PCEA-DM and 11 IV-PCA-DM individuals reported having side effects compared with 44 in the PCEA-placebo and the IV-PCA-placebo groups ($P < 0.01$). Time to first ambulation was similar with both analgesia techniques but shorter among the DM-treated patients compared with the placebo recipients (1.5 +/- 0.8 versus 2.1 +/- 1.1 days, $P = 0.02$). Thus, DM afforded better pain control and reduced the demand for analgesics, augmented the PCEA effect versus IV-PCA, and was associated with minimal untoward effects in each analgesia set. DM patients ambulated earlier than placebo recipients. IMPLICATIONS: Patients undergoing bone-malignancy surgery under combined general and epidural anesthesia received randomly patient-controlled epidural analgesia (PCEA) or IV patient-controlled analgesia (PCA) postoperatively and dextromethorphan (DM) 90 mg or placebo double-blindly for 3 days ($n = 30$ /group/set). The DM effect was recorded with minimal untoward effects: it afforded better pain control and reduced the demand for analgesics compared with the placebo, especially when associated with PCEA. DM patients ambulated earlier than placebo recipients.

White, W. T., et al. "Lidocaine patch 5% with systemic analgesics such as gabapentin: a rational polypharmacy approach for the treatment of chronic pain." *Pain Medicine*. 4, no. 4(2003): 321-30 UI 14750908.

OBJECTIVE: To assess the effectiveness and safety of the lidocaine patch 5%, a targeted peripheral analgesic, in the treatment of postherpetic neuralgia, painful diabetic neuropathy, and low back pain patients with incomplete responses to their current analgesic treatment regimen containing gabapentin. DESIGN: This was a 2-week, open-label, nonrandomized, multicenter pilot trial in the clinical setting. Patients with postherpetic neuralgia, painful diabetic neuropathy, or low back pain with partial responses (average daily pain intensity $>4/10$) to their current analgesic treatment regimen were included. Treatment consisted of daily application of up to four lidocaine patches to areas of maximal peripheral pain. Effectiveness was evaluated using the Brief Pain Inventory (BPI). Safety was assessed by adverse events, physical and neurologic examinations, vital signs, and clinical laboratory tests. RESULTS: Significant improvements in BPI measures of pain intensity and pain relief were reported for all groups of patients after 2 weeks of lidocaine patch 5% treatment. Significant improvements in BPI measures of pain interference with general activity, mood, walking ability, normal work, relationships with others, sleep, and enjoyment of life were noted. The lidocaine patch 5% was found to be safe and well tolerated. CONCLUSIONS: Results of this study highlight the potential advantages achieved with rational polypharmacy using a targeted peripheral analgesic, the lidocaine patch 5%, with centrally acting agents such as the anticonvulsant gabapentin. Controlled trials are warranted to further define the impact of such combination therapy.

Wiley, R. G., and D. A. Lappi. "Targeted toxins in pain." *Advanced Drug Delivery Reviews*. 55, no. 8(2003): 1043-54 UI 12935943.

Although only recently applied to the study of nociception, 'molecular neurosurgery', producing highly selective neural lesions using targeted cytotoxins, has proven a valuable tool for analysis of nociceptive systems and promises to yield much more information on the role of specific types of neurons in pain perception and possibly new pain therapies. Neuropeptide-toxin conjugates, particularly, substance P-saporin, have proven useful research tools and may find clinical applications. Targeting non-lethal moieties (enzymes, genes, viruses) also may prove useful for research and therapeutic purposes. [References: 96]

Williams, N. H., et al. "Randomized osteopathic manipulation study (ROMANS): pragmatic trial for spinal pain in primary care." *Family Practice*. 20, no. 6(2003): 662-9 UI 14701889.

BACKGROUND: Spinal pain is common and frequently disabling. Management guidelines have encouraged referral from primary care for spinal manipulation. However, the evidence base for these recommendations is weak. More pragmatic trials and economic evaluations have been recommended. OBJECTIVES: Our aim was to assess the effectiveness and health care costs of a practice-based osteopathy clinic for subacute spinal pain. METHODS: A

pragmatic randomized controlled trial was carried out in a primary care osteopathy clinic accepting referrals from 14 neighbouring practices in North West Wales. A total of 201 patients with neck or back pain of 2-12 weeks duration were allocated at random between usual GP care and an additional three sessions of osteopathic spinal manipulation. The primary outcome measure was the Extended Aberdeen Spine Pain Scale (EASPS). Secondary measures included SF-12, EuroQol and Short-form McGill Pain Questionnaire. Health care costs were estimated from the records of referring GPs. RESULTS: Outcomes improved more in the osteopathy group than the usual care group. At 2 months, this improvement was significantly greater in EASPS [95% confidence interval (CI) 0.7-9.8] and SF-12 mental score (95% CI 2.7-10.7). At 6 months, this difference was no longer significant for EASPS (95% CI -1.5 to 10.4), but remained significant for SF-12 mental score (95% CI 1.0-9.9). Mean health care costs attributed to spinal pain were significantly greater by 65 UK pounds in the osteopathy group (95% CI 32-155 UK pounds). Though osteopathy also cost 22 UK pounds more in mean total health care cost, this was not significant (95% CI - 159 to 142 UK pounds). CONCLUSION: A primary care osteopathy clinic improved short-term physical and longer term psychological outcomes, at little extra cost. Rigorous multicentre studies are now needed to assess the generalizability of this approach.

Wiviott, S. D., et al. "Differential expression of cardiac biomarkers by gender in patients with unstable angina/non-ST-elevation myocardial infarction: a TACTICS-TIMI 18 (Treat Angina with Aggrastat and determine Cost of Therapy with an Invasive or Conservative Strategy-Thrombolysis In Myocardial Infarction 18) substudy.[see comment]." *Circulation*. 109, no. 5(2004): 580-6 UI 14769678.

BACKGROUND: Diagnosis of coronary artery disease in women is more difficult because of lower specificity of symptoms and diagnostic accuracy of noninvasive testing. We sought to examine the relationship between gender and cardiac biomarkers in patients with unstable angina (UA)/non-ST-segment elevation myocardial infarction (NSTEMI). METHODS AND RESULTS: In the TACTICS-TIMI 18, OPUS-TIMI 16, and TIMI 11 studies, baseline samples were analyzed in the Thrombolysis In Myocardial Infarction (TIMI) biomarker core laboratory. We examined the relationship between gender and elevated biomarkers. Of 1865 patients from TACTICS-TIMI 18, 34% were women. Fewer women had elevated creatine kinase-MB or troponins, whereas more had elevated high-sensitivity C-reactive protein or brain natriuretic peptide. Presence of ST-segment deviation and TIMI risk scores were not significantly different. This pattern was confirmed in TIMI 11 and OPUS-TIMI 16. The prognostic value of the markers in TACTICS-TIMI 18 was similar in women and men. When a multimarker approach was examined, a greater proportion of high-risk women were identified. Marker-positive patients of both genders had improved outcome with an invasive strategy; however, marker-negative women appeared to have improved outcomes with a conservative strategy. CONCLUSIONS: In patients with UA/NSTEMI, there was a different pattern of presenting biomarkers. Men were more likely to have elevated creatine kinase-MB and troponins, whereas women were more likely to have elevated C-reactive protein and brain natriuretic peptide. This suggests that a multimarker approach may aid the initial risk assessment of UA/NSTEMI, especially in women. Further research is necessary to elucidate whether gender-related pathophysiological differences exist in presentation with acute coronary syndromes.

Wolka, A. M., J. D. Huber, and T. P. Davis. "Pain and the blood-brain barrier: obstacles to drug delivery." *Advanced Drug Delivery Reviews*. 55, no. 8(2003): 987-1006 UI 12935941.

Delivery of drugs across the blood-brain barrier has been shown to be altered during pathological states involving pain. Pain is a complex phenomenon involving immune and centrally mediated responses, as well as activation of the hypothalamic-pituitary-adrenal axis. Mediators released in response to pain have been shown to affect the structure and function of the blood-brain barrier in vitro and in vivo. These alterations in blood-brain barrier permeability and cytoarchitecture have implications in terms of drug delivery to the central nervous system, since pain and inflammation have the capacity to alter drug uptake and efflux across the blood-brain barrier. An understanding of how blood-brain barrier and central nervous system drug delivery mechanisms are altered during pathological conditions involving pain and/or inflammation is important in designing effective therapeutic regimens to treat disease. [References: 224]

Wolsko, P. M., et al. "Double-blind placebo-controlled trial of static magnets for the treatment of osteoarthritis of the knee: results of a pilot study." *Alternative Therapies in Health & Medicine*. 10, no. 2(2004): 36-43 UI 15055092.

CONTEXT: Outpatient clinical studies of magnet therapy, a complementary therapy commonly used to treat osteoarthritis (OA), have been limited by the absence of a credible placebo control. OBJECTIVE: Our objective was to assess the feasibility and promise of studying static magnetic therapy for knee OA and determine the ability of a new placebo-magnet device to provide concealment of group assignment. DESIGN: Randomized, double-blind, placebo-controlled clinical trial. SETTING: Academic teaching hospital in Boston. PARTICIPANTS: We enrolled 29 subjects with idiopathic or post-traumatic OA of the knee. INTERVENTIONS: Subjects received either high-strength magnetic (active) or placebo-magnetic (placebo) knee sleeve treatment for 4 hours in a monitored setting and self-treatment 6 hours daily for 6 weeks. MAIN OUTCOME MEASURES: Primary outcomes were change in knee pain as measured by the WOMAC Osteoarthritis Index Pain Subscale at 6 weeks and extent of group concealment at study end. RESULTS: At 4 hours, VAS pain scores (+/- SE) on a 5-item scale (0-500, 500 worst) decreased 79 +/- 18 mm in the active group and 10 +/- 21 mm in the placebo group (P < 0.05). There were no significant differences in any primary or secondary measure of efficacy between the treatment groups at 6 weeks. Despite widespread testing for magnetic properties, at study end, 69% of the active group and 77% of the placebo group (P > 0.2) believed that they had been assigned to the active treatment group. CONCLUSION: Despite our small sample size, magnets showed statistically significant efficacy compared to placebo after 4 hours under rigorously controlled conditions. The sustained efficacy of magnetic therapy for knee osteoarthritis could be assessed in an adequately powered trial utilizing an appropriate control such our new placebo-magnet device.

Woolf, A. D., et al. "Musculoskeletal pain in Europe: its impact and a comparison of population and medical perceptions of treatment in eight European countries.[see comment]." *Annals of the Rheumatic Diseases*. 63, no. 4(2004): 342-7 UI 15020325.

OBJECTIVES: To describe the impact of musculoskeletal pain (MP); to compare management of MP by the population and by primary care physicians; and to identify misconceptions about treatment. METHODS: 5803 people with MP and 1483 primary care physicians, randomly selected, in eight European countries were interviewed by telephone. A structured questionnaire was used to ask about usual management of MP and perceived benefits and risks of treatment. Current health status (SF-12) was also assessed. RESULTS: From primary care physicians' perceptions, MP appears to be well managed. All presenting patients are offered some form of treatment, 90% or more doctors are trying to improve patients' quality of life, and most are aware and concerned about the risks of treatment with NSAIDs. From a population perspective, up to 27% of people with pain do not seek medical help and of those who do, several wait months/years before seeing a doctor. 55% or fewer patients who have seen a doctor are currently receiving prescription treatment for their pain. Communication between doctors and patients is poor; few patients are given information about their condition; and many have misconceptions about treatment. CONCLUSIONS: Management of MP is similar across eight European countries, but there is discordance between physician and patient perspectives of care. Some people with pain have never sought medical help despite being in constant/daily pain. Those who do seek help receive little written information or explanation and many have misperceptions about the benefits and risks of treatment that limit their ability to actively participate in decisions about their care.

Wootton, M. "Morphine is not the only analgesic in palliative care: literature review." *Journal of Advanced Nursing*. 45, no. 5(2004): 527-32 UI 15009356.

BACKGROUND: No comprehensive review has been published to date, which provides information for nurses on pharmaceutical alternatives to morphine in palliative care. As nurses are often the health professional most involved with terminally ill patients, there is a clear need for a review of current practices which is accessible to nurses. AIM: The aim of this review is to examine the pharmaceutical alternatives to morphine use in palliative care that are currently available. METHODS: Searches were made of the CINAHL and MEDLINE databases for articles published between 1990 and 2000, using the keywords 'pain management', 'cancer pain' and 'morphine'. FINDINGS: Most evidence on the use of pharmaceutical alternatives to morphine is anecdotal, demonstrating a need for more research to be conducted in this field. Evidence presented in this review shows encouraging results following the administration of methadone, fentanyl or ketamine to patients with difficult pain problems. CONCLUSION: Nurses need to be aware of treatment options that may benefit patients with difficult pain problems. Although positive experiences have been documented when using alternatives to morphine, more research must be conducted to allow practitioners

to add more pharmaceutical alternatives to their pain management armouries. [References: 40]

Yamamoto, S., et al. "Preoperative droperidol improved postoperative pain relief in patients undergoing rotator-cuff repair during general anesthesia using intravenous morphine." *Journal of Clinical Anesthesia*. 15, no. 7(2003): 525-9 UI 14698365.

STUDY OBJECTIVE: To demonstrate the effect of preoperative and intraoperative, small-dose intravenous (IV) droperidol on postoperative pain relief in orthopedic patients given general anesthesia with morphine. DESIGN: Randomized, double-blind, prospective study. SETTING: University-affiliated hospital. PATIENTS: 84 ASA physical status I and II patients undergoing shoulder rotator-cuff repair with general anesthesia. INTERVENTIONS: Patients were randomly assigned to one of three groups: Group P (n = 27) were given droperidol 10 microg/kg IV before skin incision; Group A (n = 30) received droperidol 10 microg/kg IV after skin incision; and Group C (n = 27) served as controls. General anesthesia consisted of sevoflurane and nitrous oxide in oxygen and IV morphine 0.2 mg/kg, which was given before skin incision. MEASUREMENTS: The degree of postoperative pain as assessed by postoperative pain scores and the number of supplemental analgesics given, and the frequency of postoperative nausea and vomiting, nightmares, and respiratory depression were compared among the three groups. A p-value < 0.05 was considered statistically significant. MAIN RESULTS: The postoperative pain score distribution was significantly greater in smaller values in Groups P and A than in Group C (p < 0.01). The number of supplemental analgesics given in the first 18 hours postoperatively was significantly smaller in Group P than in Groups A or C (p < 0.05). CONCLUSIONS: Preoperative IV droperidol resulted in improved postoperative pain relief inpatients undergoing shoulder rotator cuff surgery with general anesthesia using IV morphine.

Yau, V., et al. "Pain management in cancer patients with bone metastases remains a challenge." *Journal of Pain & Symptom Management*. 27, no. 1(2004): 1-3 UI 14711462.

Yelland, M. J., et al. "Prolotherapy injections, saline injections, and exercises for chronic low-back pain: a randomized trial." *Spine*. 29, no. 1(2004): 9-16; discussion 16 UI 14699269.

OBJECTIVES: To assess the efficacy of a prolotherapy injection and exercise protocol in the treatment of chronic nonspecific low back pain. DESIGN: Randomized controlled trial with two-by-two factorial design, triple-blinded for injection status, and single-blinded for exercise status. SETTING: General practice. PARTICIPANTS: One hundred ten participants with nonspecific low-back pain of average 14 years duration were randomized to have repeated prolotherapy (20% glucose/0.2% lignocaine) or normal saline injections into tender lumbo-pelvic ligaments and randomized to perform either flexion/extension exercises or normal activity over 6 months. MAIN OUTCOME MEASURES: Pain intensity (VAS) and disability scores (Roland-Morris) at 2.5, 4, 6, 12, and 24 months. RESULTS: Follow-up was achieved in 96% at 12 months and 80% at 2 years. Ligament injections, with exercises and with normal activity, resulted in significant and sustained reductions in pain and disability throughout the trial, but no attributable effect was found for prolotherapy injections over saline injections or for exercises over normal activity. At 12 months, the proportions achieving more than 50% reduction in pain from baseline by injection group were glucose-lignocaine: 0.46 versus saline: 0.36. By activity group these proportions were exercise: 0.41 versus normal activity: 0.39. Corresponding proportions for >50% reduction in disability were glucose-lignocaine: 0.42 versus saline 0.36 and exercise: 0.36 versus normal activity: 0.38. There were no between group differences in any of the above measures. CONCLUSIONS: In chronic nonspecific low-back pain, significant and sustained reductions in pain and disability occur with ligament injections, irrespective of the solution injected or the concurrent use of exercises.

Ziessman, H. A. "Acute cholecystitis, biliary obstruction, and biliary leakage." *Seminars in Nuclear Medicine*. 33, no. 4(2003): 279-96 UI 14625840.

The use of cholescintigraphy to diagnose acute cholecystitis, biliary obstruction, and biliary leakage dates back to the late 1970s. Today, despite the many advances in imaging instrumentation, radiopharmaceuticals, and methodology over these years, cholescintigraphy still plays an important role in confirming or excluding these diagnoses in acutely ill patients. Acute calculous and acalculous cholecystitis, gallbladder perforation, biliary obstruction, and biliary leakage often present as acute abdominal pain, and must be differentiated from other surgical and nonsurgical etiologies with similar symptoms and presentation. Understanding the pathophysiology of acute hepatobiliary diseases is vital for deciding on the most advantageous

imaging work-up and for interpretation of the studies. To optimize the value of cholescintigraphy, up-to-date methodology, proper use of appropriate pharmacologic interventions, and recognition of characteristic image findings are critical. [References: 163]