

Pain (Chronic)
Updated: 08/26/2004

ABSTRACTS

CHSC.

CHSC.

1999;1999 Sep 15. California Assembly Bill 791

Serum and red cell magnesium levels in patients with premenstrual tension.

Abraham GE, Lubran MM.

Am J Clin Nutr. 1981 Nov; 34(11):2364-6.

Magnesium deficiency has been implicated as a possible causative factor in premenstrual tension (PMT). We have assessed serum and red cell magnesium concentration in nine normal premenopausal women and 26 PMT patients, using atomic absorption spectrometry. The following means +/- SEM were obtained from serum and red cell magnesium, respectively, in mg/100 ml: normal subjects: 1.7 +/- 0.04 and 4.5 +/- 0.25 PMT patients: 1.8 +/- 0.05 and 3.1 +/- 0.24. Mean red cell magnesium level was significantly (p less than 0.01) lower in PMT patients. Red cell magnesium determinations should be included in the evaluation of PMT

What Is Sclerotherapy?

ACOPMS.

2002;

Omega-3 fatty acids in rheumatoid arthritis: an overview.

Ariza-Ariza R, Mestanza-Peralta M, Cardiel MH.

Semin Arthritis Rheum. 1998 Jun; 27(6):366-70.

OBJECTIVES: To review background, pharmacological properties, mechanisms of action, and published clinical experience using omega-3 fatty acids in rheumatoid arthritis. **MATERIALS AND METHODS:** English language publications were identified through a computerized search (using MEDLINE) between 1979 and 1995 using the terms "omega-3 fatty acids" and "fish oil". In addition, manual search and cross references were used to obtain published articles on the subject. Papers showing evidence of pharmacological properties and mechanisms of action were analyzed. For therapeutic efficacy, only randomized clinical trials are presented in this article. All papers were reviewed by a board certified rheumatologist with training in research methodology and critical appraisal skills. He was aware of study objectives. **RESULTS:** Main results are summarized in the text and presented in tables. Mean change from baseline is presented only for patients treated with omega-3 fatty acids. Omega-3 fatty acids are superior with respect to placebo in improving some outcome measures, and decrease the long-term requirements for nonsteroidal antiinflammatory drugs. Some of these effects are statistically significant, but their clinical significance remain to be established. **CONCLUSIONS:** Treatment with omega-3 fatty acids has been associated with improvement in some outcome measures in rheumatoid arthritis. Studies are needed to determine if they might represent an alternative to nonsteroidal antiinflammatory drugs in certain circumstances

In Advances in Pain Research and Therapy.

Balagot RC.

1983;(Volume 5):289-93.

Buprenorphine treatment of patients with non-malignant musculoskeletal diseases.

Balint G.

Clin Rheumatol. 2002 Feb; 21 Suppl 1:S17-S18.

Adequate pain control is vital in the treatment of patients with musculoskeletal disease. These diseases are characterised by a number of pain-induced vicious circles, and satisfactory control of pain acts to disrupt these self-perpetuating processes. Consequently, early mobilisation can be achieved in patients with painful osteoporotic vertebral fractures, low back pain and sciatica, for example. In other cases analgesics may act simply to maintain the mobility of patients and in this way preserve their quality of life. When simple analgesics are not sufficient, the use of opioid-type analgesics is justified. Buprenorphine transdermal therapeutic system (TDS) is a novel formulation of a well-tolerated and highly effective drug for satisfactory pain control that can also be used in patients with chronic non-malignant pain (CNMP) due to musculoskeletal diseases. Three case reports are presented to illustrate the effectiveness of buprenorphine TDS in such patients

The composition of food consumed by Greenland Eskimos.

Bang HO, Dyerberg J, Hjoorne N.

Acta Med Scand. 1976; 200(1-2):69-73.

Food specimens have been collected, by means of the double-portion technique, from Greenland Eskimo hunters and their wives, in all seven persons, on seven consecutive days. Their food was found to contain more protein and less carbohydrates than average Danish food and an almost equal amount of fat. Compared with Danish food, the fatty acid pattern of the consumed lipids--essentially of mammalian marine origin--showed a higher content of long chain polyunsaturated fatty acids (especially C20:5) and lower contents of linoleic and linolenic acids. However, the sum of the polyunsaturated fatty acids was smaller than in Danish food. Using Keys' formula, describing the serum cholesterol level as a function of the nutritional fatty acids, the essentially lower serum cholesterol level found in Greenland Eskimos was not explained by our findings. It is suggested instead to be a special metabolic effect of the long chain polyunsaturated fatty acids from marine mammals. There might be a similar effect on the plasma triglyceride and very low density lipoprotein concentrations, explaining the much lower plasma concentrations of these components in Eskimos than in Western populations. Our findings might have an essential bearing on the difference in morbidity from coronary atherosclerotic disease between these populations

DL-phenylalanine in depressed patients: an open study.

Beckmann H, Strauss MA, Ludolph E.

J Neural Transm. 1977; 41(2-3):123-34.

In an open study dl-phenylalanine in doses from 75-200 mg/day was administered to 20 depressed patients for 20 days. Patients were classified according to the International Classification of Diseases (ICD). The AMP system, the Hamilton depression scale and the von Zerssen self rating questionnaire were used for documentation of psychopathological, neurologic and somatic changes. In addition a global clinical impression was agreed upon by experienced psychiatrists. At the end of the trial 12 patients (8 with complete, 4 with good response) could be discharged without any further treatment. 4 patients with partially atypical depressions experienced mild to moderate responses, whereas 4 patients did not respond at all to the phenylalanine administration. Depressive "core symptoms" as depressed mood, retardation and/or agitation were preferentially, anxiety and sleep disturbances moderately and hypochondriasis and compulsiveness were not influenced. It is concluded that dl-phenylalanine might have substantial antidepressant properties and that further more controlled investigations are warranted

Vitamin B6 in clinical neurology.

Bernstein AL.

Ann N Y Acad Sci. 1990; 585:250-60.

Many conditions in clinical neurology may be responsive to pyridoxine as a therapeutic agent. The current difficulty is in trying to isolate the conditions that are most likely to respond. Treating seizures is a major part of a neurologic practice. Our current therapeutic agents are only partially successful and limited by multiple side effects. One problem is that patients often have to take these agents for an entire lifetime, further raising the risk of toxicity. If pyridoxine supplementation can improve the efficacy of currently used medications, it will be gladly accepted into our therapeutic arsenal. Headache, chronic pain, and depression all

appear to run together in many of our patients. The observations that serotonin deficiency is a common thread between them and that pyridoxine can raise serotonin levels open a wide range of therapeutic options. Small studies have been carried out with mixed success. Comparison with amitriptyline in the treatment of headache appears to show about equal efficacy, although side effects would be expected to be more of a problem with the amitriptyline. Behavioral disorders are relatively common and continue to be a major problem, disrupting the lives of the patients and their families. Current treatments are not acceptable to most people because of the risk of side effects with long-term usage. If, as Dr. Feingold suggests, many of these problems are caused by "toxic" exposures to chemicals that are pyridoxine antagonists, supplementation at early ages may reduce the incidence of hyperactivity and aggressive behavior. This raises the question of safety. Is pyridoxine safe for long-term use in large segments of the population, including children? The studies on children with Down's syndrome and autism, utilizing much higher doses than are used for other therapeutic purposes, seem to indicate relative safety if carefully monitored. Studies involving large population groups with carpal tunnel syndrome, all adults, using 100-150 mg/day have shown minimal or no toxicity in five- to 10-year studies. Women self-medicating for PMS taking 500 to 5000 mg/day have shown peripheral neuropathy within one to three years. It would appear from this retrospective analysis that pyridoxine is safe at doses of 100 mg/day or less in adults. In children there is not enough data to make any sort of suggestion. Because the major neurologic complication is a peripheral neuropathy and the causes of this condition are myriad, pyridoxine may cause neuropathy only in patients with a pre-existing susceptibility to this condition

Protective effect of melatonin in carrageenan-induced acute local inflammation.

Bilici D, Akpınar E, Kiziltunc A.

Pharmacol Res. 2002 Aug; 46(2):133-9.

The aim of the present study was to investigate the protective effect of the pineal hormone melatonin in a model of acute local inflammation (carrageenan-induced paw oedema). Inflammation was assessed by measurement of nitric oxide (NO), Malondialdehyde (MDA) and glutathione levels in the paw tissue in rats. The intraplantar injection of carrageenan elicited an inflammatory response that was characterised by a time-dependent increase in paw oedema, increased level of nitrite/nitrate and MDA, a lipid peroxidation product and decreased glutathione levels in the paw tissue. The maximal increase in paw volume was observed at 4h after administration (maximal in paw volume 160±3.34 ml). In addition, NO level and MDA were markedly increased in the carrageenan-treated paw (59.96±6.58 and 19.33±3.35 micromol g⁻¹), respectively, versus in the control paw glutathione level decreased in paw tissue (3.24±0.24 micromol g⁻¹). However, carrageenan-induced paw oedema was significantly reduced in a dose-dependent manner by treatment with melatonin (given at 5 and 10 mg kg⁻¹) at 1, 2, 3, 4, 5 and 6h after injection of carrageenan. Melatonin treatment also caused a significant reduction of the NO and MDA levels, while increasing glutathione level in the paw tissue. Our findings support the view that melatonin exerts anti-inflammatory effects. Part of these anti-inflammatory effect may be related to an inhibition of the NO and MDA production, while another part may be related to increase of the glutathione level in the paw tissue

[Clinical effectiveness of Spondyvit (vitamin E) in activated arthroses. A multicenter placebo-controlled double-blind study].

Blankenhorn G.

Z Orthop Ihre Grenzgeb. 1986 May; 124(3):340-3.

50 patients with osteoarthritis were randomly assigned to two groups and treated over a period of 6 weeks with vitamin E-capsules (daily dose 400 I.E. d-alpha-tocopherylacetate) or an identical placebo preparation. The results of this double-blind controlled clinical trial showed that vitamin E was superior to placebo with respect to the relief of pain (pain at rest, pain during movement, pressure-induced pain) and the necessity of additional analgetic treatment (p less than 0.05 to p less than 0.01). Improvement of mobility was better in the group treated with vitamin E. However, this result was not statistically significant. The profile and the intensity of adverse reactions in both the vitamin E and placebo group was practically identical. This clinical study shows antiphlogistic efficacy of vitamin E in patients with osteoarthritis. In view of the possibility to reduce standard antiphlogistic, analgetic therapy together with the very good tolerance this result may be very important for the treatment of chronic rheumatic inflammatory disease

Pharmacognosy.

Brady LR.

1981; Eighth Edition:480.

Use of phenylalanine, an enkephalinase inhibitor, in the treatment of intractable pain. In *Advances in Pain Research and Therapy*.

Budd K.

1983;(Volume 5):305-8.

Taking ginger for nausea and vomiting during pregnancy.

Chandra K, Einarson A, Koren G.

Can Fam Physician. 2002 Sep; 48:1441-2.

QUESTION: Many of my patients prefer to use natural or herbal medicines, such as ginger, before taking drugs to treat nausea and vomiting of pregnancy. Is there evidence that ginger is safe to use during pregnancy? Is it effective? ANSWER: Although ginger is used in many cultures to treat the symptoms of nausea and vomiting, no trials have established its safety for use during pregnancy. On the other hand, its efficacy has been documented in two randomized, blinded controlled trials

Correlation of genetic differences in endorphin systems with analgesic effects of D-amino acids in mice.

Cheng RS, Pomeranz B.

Brain Res. 1979 Nov 30; 177(3):583-7.

Capsaicin: identification, nomenclature, and pharmacotherapy.

Cordell GA, Araujo OE.

Ann Pharmacother. 1993 Mar; 27(3):330-6.

OBJECTIVE: To provide a brief overview of the chemical history, analysis, nomenclature, biology, pharmacology, and pharmacotherapy of capsaicin. DATA SOURCES: Chemical Abstracts, Biological Abstracts, and a MEDLINE search were used to identify pertinent literature; selected literature was used in this review. DATA EXTRACTION: Original articles, reviews, and abstracts of articles were used to select material pertinent to the objectives of the review. The volume of material available prohibits comprehensive data extraction. CONCLUSIONS: A history of the use of *Capsicum* spp. and the predominant active ingredient, capsaicin, the parent compound of a group of vanillyl fatty acid amides, is presented. Distinct structural differences are noted between this compound and the capsaicinoids, especially the synthetic analog nonivamide, which has appeared as an adulterant in capsaicin-labeled products. Analysis shows that although some of these synthetic analogs eventually may prove to be true natural products, conclusive evidence based on isolation and structure elucidation is still absent after decades of attempted isolation from several potential natural sources. Although the crude, dark oleoresin extract of *capsicum* contains over 100 distinct volatile compounds and therefore may function in many ways dissimilar to capsaicin, the oleoresin continues to be marketed in products with a high degree of variability in efficacy. Capsaicin as a pure white crystalline material, however, acts specifically by depleting stores of substance P from sensory neurons, and has been successful in the treatment of several painful conditions (e.g., rheumatoid arthritis, osteoarthritis, peripheral neuropathies

Pharmacological actions of melatonin in acute and chronic inflammation.

Cuzzocrea S, Reiter RJ.

Curr Top Med Chem. 2002 Feb; 2(2):153-65.

A vast number of experimental and clinical studies implicates oxygen-derived free radicals (especially, superoxide and the hydroxyl radical) and high energy oxidants (such as peroxynitrite) as mediators of acute and chronic inflammation. The purpose of this review is to summarize the pharmacological actions of melatonin in acute and chronic inflammation. Reactive oxygen species can modulate a wide range of toxic oxidative reactions. These include initiation of lipid peroxidation, direct inhibition of mitochondrial respiratory chain enzymes, inactivation of glyceraldehyde-3-phosphate dehydrogenase, inhibition of membrane sodium/potassium ATPase activity, inactivation of membrane sodium channels, and other oxidative modifications of proteins. Reactive oxygen species (e.g., superoxide, peroxynitrite, hydrogen peroxide and hydroxyl radical) are all potential reactants capable of initiating DNA single strand breakage, with subsequent activation of the nuclear enzyme poly (ADP ribose) synthetase (PARS), leading to eventual severe energy depletion of the cells, and necrotic-type cell death. These toxic reactions are likely to play a role in the pathophysiology of inflammation. Melatonin has been shown to possess both in vitro and in vivo important antioxidant activities as well as to inhibit the activation of poly (ADP ribose) synthetase. A large number of experimental studies have documented that melatonin exerts important anti-inflammatory actions

Treatment and prevention of osteoarthritis.

de Fabio A.

Townsend Lett Doctors. 1990;143-8.

Treatment of arthritis with topical capsaicin: a double-blind trial.

Deal CL, Schnitzer TJ, Lipstein E, et al.

Clin Ther. 1991 May; 13(3):383-95.

The neuropeptide substance P has been implicated in the pathogenesis of inflammation and pain in arthritis. In this double-blind randomized study, 70 patients with osteoarthritis (OA) and 31 with rheumatoid arthritis (RA) received capsaicin (a substance P depletor) or placebo for four weeks. The patients were instructed to apply 0.025% capsaicin cream or its vehicle (placebo) to painful knees four times daily. Pain relief was assessed using visual analog scales for pain and relief, a categorical pain scale, and physicians' global evaluations. Most of the patients continued to receive concomitant arthritis medications. Significantly more relief of pain was reported by the capsaicin-treated patients than the placebo patients throughout the study; after four weeks of capsaicin treatment, RA and OA patients demonstrated mean reductions in pain of 57% and 33%, respectively. These reductions in pain were statistically significant compared with those reported with placebo ($P = 0.003$ and $P = 0.033$, respectively). According to the global evaluations, 80% of the capsaicin-treated patients experienced a reduction in pain after two weeks of treatment. Transient burning was felt at the sites of drug application by 23 of the 52 capsaicin-treated patients; two patients withdrew from treatment because of this side effect. It is concluded that capsaicin cream is a safe and effective treatment for arthritis

Therapeutic activity of oral glucosamine sulfate in osteoarthrosis: a placebo-controlled double-blind investigation.

Drovanti A, Bignamini AA, Rovati AL.

Clin Ther. 1980; 3(4):260-72.

Acupuncture and Trager psychophysical integration in the treatment of wheelchair user's shoulder pain in individuals with spinal cord injury.

Dyson-Hudson TA, Shiflett SC, Kirshblum SC, et al.

Arch Phys Med Rehabil. 2001 Aug; 82(8):1038-46.

OBJECTIVE: To determine the effectiveness of acupuncture and Trager Psychophysical Integration (a form of manual therapy) in decreasing chronic shoulder pain in wheelchair users with spinal cord injury (SCI). **DESIGN:** A prospective clinical trial, with subjects randomized to acupuncture or Trager treatment condition. Subjects served as their own controls by including a 5-week pretreatment baseline period and a 5-week posttreatment follow-up period. **SETTING:** Rehabilitation hospital research department. **PARTICIPANTS:** Eighteen subjects with chronic SCI and chronic shoulder pain who used manual wheelchairs as their primary means of mobility. **INTERVENTION:** Ten acupuncture or 10 Trager treatments over a 5-week period. **MAIN OUTCOME MEASURES:** Changes in performance-corrected Wheelchair User's Shoulder Pain Index (PC-WUSPI) scores during baseline, treatment, and follow-up periods were assessed by using analysis of variance. **RESULTS:** The mean PC-WUSPI score +/- standard deviation of the 18 subjects at entry was 48.9 +/- 24.6 (range, 8.0-94). No significant change in mean PC-WUSPI scores occurred during the pretreatment baseline period. Mean PC-WUSPI scores decreased significantly during the treatment period in both the acupuncture (53.4%; 23.3 points) and Trager (53.8%; 21.7 points) treatment groups. The reduced PC-WUSPI scores were maintained in both groups throughout the 5-week posttreatment follow-up period. **CONCLUSION:** Acupuncture and Trager are both effective treatments for reducing chronic shoulder pain associated with functional activities in persons with SCI

Naloxone reversible analgesia in mice and man produced by D-phenylalanine and hydrocinnamic acid, inhibitors of carboxypeptidase A. In *Advances in Pain Research and Therapy.*

Ehrenpreis S.

1978;(Volume 3):479-88.

The effect of guided imagery and amitriptyline on daily fibromyalgia pain: a prospective, randomized, controlled trial.

Fors EA, Sexton H, Gotestam KG.

J Psychiatr Res. 2002 May; 36(3):179-87.

OBJECTIVE: The effectiveness of an attention distracting and an attention focusing guided imagery as well as the effect of amitriptyline on fibromyalgic pain was studied prospectively. **METHODS:** Fifty-five women with previously diagnosed fibromyalgia were monitored for daily pain (VAS) in a randomized, controlled clinical trial. One group received relaxation training and guided instruction in "pleasant imagery" (PI) in order to distract from the pain experience (n=17). Another group received relaxation training and attention imagery upon the "active workings of the internal pain control systems", "attention imagery" (AI) (n=21). The control group (CG) received treatment as usual (n=17). Patients were also randomly assigned to 50-mg amitriptyline/day or placebo. Some psychological and socio-demographic variables were also measured initially. The slopes of diary pain ratings over a 4-week period were used as the outcome measures. **RESULTS:** We found significant differences of the pain-slopes between the three psychological conditions (P=0.0001). The pleasant imagery (P0.05). There was neither a difference between the amitriptyline and placebo slopes (main effects, P=0.98) nor a significant amitriptyline x psychological interaction (P=0.76). **CONCLUSION:** Pleasant imagery (PI) was an effective intervention in reducing fibromyalgic pain during the 28-day study period. Amitriptyline had no significant advantage over placebo during the study period

Validation of a meta-analysis: the effects of fish oil in rheumatoid arthritis.

Fortin PR, Lew RA, Liang MH, et al.

J Clin Epidemiol. 1995 Nov; 48(11):1379-90.

The purpose of this study was to validate the results of a meta-analysis showing the efficacy of fish oil in rheumatoid arthritis with the results of a re-analysis of the complete primary data set. A Medline search yielded seven published papers. Three additional trials were found by contacting authorities in the field. Inclusion criteria included (1) a double-blind, placebo-controlled study, (2) use of at least one of seven predetermined outcome measures, (3) results reported for both placebo and treatment groups at baseline and follow-up, (4) randomization, and (5) parallel or cross-over design. Papers were scored for quality. Demographic and outcomes variables were collected. For the re-analysis of the primary data, the same variables were abstracted for the 395 individual patients randomized. The meta-analysis demonstrated that dietary fish oil supplementation for 3 months significantly reduced tender joint count (rate difference [RD] [95% CI] = -2.9 [-3.8 to -2.1] [p = 0.001]) and morning stiffness (RD [95% CI] = -25.9 [-44.3 to -7.5] [p < 0.01]) as compared with heterogeneous dietary control oils. The re-analysis of the primary data confirmed a significant reduction in tender joint count (p = "0.001") and in morning stiffness (p < 0.02) in the parallel analysis that ignored interaction terms. The analyses that included an interaction term between site and treatment again confirmed a significant reduction in tender joint count. The results for morning stiffness were similar to the meta-analysis, but did not quite reach statistical significance (p = "0.052-0.083)." The relative improvements in the other outcome variables did not reach statistical significance. Use of fish oil improved the number of tender joints and duration of morning stiffness at 3 months as analyzed by both meta- and mega-analysis. The fuller mega-analysis confirmed the results of the meta-analysis. The advantages of mega-analysis were as follows: (1) the ability to analyze the homogeneity of the patient populations, (2) the ability to make clinically sensible adjustments in the form of the comparison, and (3) the ability to examine subsets of the data

Physiological control of brain catechol synthesis by brain tyrosine concentration.

Gibson CJ, Wurtman RJ.

Biochem Pharmacol. 1977 Jun 15; 26(12):1137-42.

Efficacy and safety of glucosamine sulfate versus ibuprofen in patients with knee osteoarthritis.

Giu G.X. GSNGGRLSI.

Arzneim Forsch Drug Res. 1998; 48(5):469-74.

Anti-inflammatory and antipyretic activities of beta-sitosterol.

Gupta MB, Nath R, Srivastava N, et al.

Planta Med. 1980 Jun; 39(2):157-63.

Post suxamethonium pains and vitamin C.

Gupte SR, Savant NS.

Anaesthesia. 1971 Oct; 26(4):436-40.

Analgesic and anti-inflammatory properties of vitamins.

Hanck A, Weiser H.

Int J Vitam Nutr Res Suppl. 1985; 27:189-206.

National Pain Survey.

Harris (Louis) & Associates.

1999;

[Fish oil--healing principle in the Eskimo diet?].

Henzen C.

Schweiz Rundsch Med Prax. 1995 Jan 3; 84(1):11-5.

The low incidence of coronary heart disease among Eskimos is related to their diet rich in marine fatty acids, which contain large amounts of polyunsaturated omega-3 fatty acids, mainly eicosapentaenoic and docosahexaenoic acids. The beneficial effects on atherosclerotic vascular disease result from favorable influence on prostaglandin/thromboxane metabolism. Clinical studies have also reported antiinflammatory effects

[Treatment of vertebragenous pain and sensitivity disorders using high doses of hydroxocobalamin].

Hieber H.

Med Monatsschr. 1974 Dec; 28(12):545-8.

Randomised trial of acupuncture compared with conventional massage and "sham" laser acupuncture for treatment of chronic neck pain.

Irnich D, Behrens N, Molzen H, et al.

BMJ. 2001 Jun 30; 322(7302):1574-8.

OBJECTIVES: To compare the efficacy of acupuncture and conventional massage for the treatment of chronic neck pain. **DESIGN:** Prospective, randomised, placebo controlled trial. Setting: Three outpatient departments in Germany. **PARTICIPANTS:** 177 patients aged 18-85 years with chronic neck pain. Interventions: Patients were randomly allocated to five treatments over three weeks with acupuncture (56), massage (60), or "sham" laser acupuncture (61). **MAIN OUTCOME MEASURES:** Primary outcome measure: maximum pain related to motion (visual analogue scale) irrespective of direction of movement one week after treatment. Secondary outcome measures: range of motion (3D ultrasound real time motion analyser), pain related to movement in six directions (visual analogue scale), pressure pain threshold (pressure algometer), changes of spontaneous pain, motion related pain, global complaints (seven point scale), and quality of life (SF-36). Assessments were performed before, during, and one week and three months after treatment. Patients' beliefs in treatment were assessed. **RESULTS:** One week after five treatments the acupuncture group showed a significantly greater improvement in motion related pain compared with massage (difference 24.22 (95% confidence interval 16.5 to 31.9), $P=0.0052$) but not compared with sham laser (17.28 (10.0 to 24.6), $P=0.327$). Differences between acupuncture and massage or sham laser were greater in the subgroup who had had pain for longer than five years ($n=75$) and in patients with myofascial pain syndrome ($n=129$). The acupuncture group had the best results in most secondary outcome measures. There were no differences in patients' beliefs in treatment. **CONCLUSIONS:** Acupuncture is an effective short term treatment for patients with chronic neck pain, but there is only limited evidence for long term effects after five treatments

Declaration and Therapeutic Advances in the Use of Medicines 2001.

ISDB.

2001

Low-amplitude, extremely low frequency magnetic fields for the treatment of osteoarthritic knees: a double-blind clinical study.

Jacobson JI, Gorman R, Yamanashi WS, et al.

Altern Ther Health Med. 2001 Sep; 7(5):54-9.

CONTEXT: Noninvasive magnetotherapeutic approaches to bone healing have been successful in past clinical studies. OBJECTIVE: To determine the effectiveness of low-amplitude, extremely low frequency magnetic fields on patients with knee pain due to osteoarthritis. DESIGN: Placebo-controlled, randomized, double-blind clinical study. SETTING: 4 outpatient clinics. PARTICIPANTS: 176 patients were randomly assigned to 1 of 2 groups, the placebo group (magnet off) or the active group (magnet on). INTERVENTION: 6-minute exposure to each magnetic field signal using 8 exposure sessions for each treatment session, the number of treatment sessions totaling 8 during a 2-week period, yielded patients being exposed to uniform magnetic fields for 48 minutes per treatment session 8 times in 2 weeks. The magnetic fields used in this study were generated by a Jacobson Resonator, which consists of two 18-inch diameter (46-cm diameter) coils connected in series, in turn connected to a function generator via an attenuator to obtain the specific amplitude and frequency. The range of magnetic field amplitudes used was from 2.74×10^{-7} to 3.4×10^{-8} G, with corresponding frequencies of 7.7 to 0.976 Hz. OUTCOME MEASURES: Each subject rated his or her pain level from 1 (minimal) to 10 (maximal) before and after each treatment and 2 weeks after treatment. Subjects also recorded their pain intensity in a diary while outside the treatment environment for 2 weeks after the last treatment session (session 8) twice daily: upon awakening (within 15 minutes) and upon retiring (just before going to bed at night). RESULTS: Reduction in pain after a treatment session was significantly ($P < .001$) greater in the magnet-on group (46%) compared to the magnet-off group (8%). CONCLUSION: Low-amplitude, extremely low frequency magnetic fields are safe and effective for treating patients with chronic knee pain due to osteoarthritis

Efficacy of feverfew as prophylactic treatment of migraine.

Johnson ES, Kadam NP, Hylands DM, et al.

Br Med J (Clin Res Ed). 1985 Aug 31; 291(6495):569-73.

Seventeen patients who ate fresh leaves of feverfew daily as prophylaxis against migraine participated in a double blind placebo controlled trial of the herb: eight patients received capsules containing freeze dried feverfew powder and nine placebo. Those who received placebo had a significant increase in the frequency and severity of headache, nausea, and vomiting with the emergence of untoward effects during the early months of treatment. The group given capsules of feverfew showed no change in the frequency or severity of symptoms of migraine. This provides evidence that feverfew taken prophylactically prevents attacks of migraine, and confirmatory studies are now indicated, preferably with a formulation controlled for sesquiterpene lactone content, in migraine sufferers who have never treated themselves with this herb

The use of vitamin therapy to reverse certain concomitants of aging.

KAUFMAN W.

J Am Geriatr Soc. 1955 Nov; 3(11):927-36.

Topical Treatment for Arthritis Clinical Study 2002.

Keller BC.

2002

A fish oil diet rich in eicosapentaenoic acid reduces cyclooxygenase metabolites, and suppresses lupus in MRL-lpr mice.

Kelley VE, Ferretti A, Izui S, et al.

J Immunol. 1985 Mar; 134(3):1914-9.

Dietary supplementation of fish oil as the exclusive source of lipid suppresses autoimmune lupus in MRL-lpr mice. This marine oil diet decreases the lymphoid hyperplasia regulated by the lpr gene, prevents an increase in macrophage surface Ia

expression, reduces the formation of circulating retroviral gp70 immune complexes, delays the onset of renal disease, and prolongs survival. We show that a fatty acid component uniquely present in fish oil but not in vegetable oil decreases the quantity of dienoic prostaglandin E, thromboxane B, and prostacyclin normally synthesized by multiple tissues, including kidney, lung, and macrophages, and promotes the synthesis of small amounts of trienoic prostaglandin in autoimmune mice. We suggest that this change in endogenous cyclooxygenase metabolite synthesis directly suppresses immunologic and/or inflammatory mediators of murine lupus

Preoperative intradermal acupuncture reduces postoperative pain, nausea and vomiting, analgesic requirement, and sympathoadrenal responses.

Kotani N, Hashimoto H, Sato Y, et al.

Anesthesiology. 2001 Aug; 95(2):349-56.

BACKGROUND: In a controlled and double-blind study, the authors tested the hypothesis that preoperative insertion of intradermal needles at acupoints 2.5 cm from the spinal vertebrae (bladder meridian) provide satisfactory postoperative analgesia. **METHODS:** The authors enrolled patients scheduled for elective upper and lower abdominal surgery. Before anesthesia, patients undergoing each type of surgery were randomly assigned to one of two groups: acupuncture (n = 50 and n = 39 for upper and lower abdominal surgery, respectively) or control (n = 48 and n = 38 for upper and lower abdominal surgery, respectively). In the acupuncture group, intradermal needles were inserted to the left and right of bladder meridian 18-24 and 20-26 in upper and lower abdominal surgery before induction of anesthesia, respectively. Postoperative analgesia was maintained with epidural morphine and bolus doses of intravenous morphine. Consumption of intravenous morphine was recorded. Incisional pain at rest and during coughing and deep visceral pain were recorded during recovery and for 4 days thereafter on a four-point verbal rating scale. We also evaluated time-dependent changes in plasma concentrations of cortisol and catecholamines. **RESULTS:** Starting from the recovery room, intradermal acupuncture increased the fraction of patients with good pain relief as compared with the control (P < 0.05). Consumption of supplemental intravenous morphine was reduced 50%, and the incidence of postoperative nausea was reduced 20-30% in the acupuncture patients who had undergone either upper or lower abdominal surgery (P < 0.01). Plasma cortisol and epinephrine concentrations were reduced 30-50% in the acupuncture group during recovery and on the first postoperative day (P < 0.01). **CONCLUSION:** Preoperative insertion of intradermal needles reduces postoperative pain, the analgesic requirement, and opioid-related side effects after both upper and lower abdominal surgery. Acupuncture analgesia also reduces the activation of the sympathoadrenal system that normally accompanies surgery

Effects of manipulation of dietary fatty acids on clinical manifestations of rheumatoid arthritis.

Kremer JM, Bigauoette J, Michalek AV, et al.

Lancet. 1985 Jan 26; 1(8422):184-7.

The effects of manipulation of dietary fatty acids in patients with rheumatoid arthritis were investigated in a 12-week, prospective, double-blind, controlled study. 17 patients took an experimental diet high in polyunsaturated fat and low in saturated fat, with a daily supplement (1.8 g) of eicosapentaenoic acid. 20 patients took a control diet with a lower polyunsaturated to saturated fat ratio and a placebo supplement. Compliance was monitored by plasma lipid gas-chromatographic analysis, Ivy bleeding time, and diet diaries. Results favoured the experimental group at 12 weeks for morning stiffness and number of tender joints. On follow-up evaluation 1-2 months after stopping the diet, the experimental group had deteriorated significantly in patient and physician global evaluation of disease activity, pain assessment, and number of tender joints. The control group had improved in morning stiffness and number of tender joints on follow-up

Fish-oil fatty acid supplementation in active rheumatoid arthritis. A double-blinded, controlled, crossover study.

Kremer JM, Jubiz W, Michalek A, et al.

Ann Intern Med. 1987 Apr; 106(4):497-503.

Study Objective: to determine the efficacy of fish-oil dietary supplements in active rheumatoid arthritis and their effect on neutrophil leukotriene levels. **Design:** nonrandomized, double-blinded, placebo-controlled, crossover trial with 14-week treatment periods and 4-week washout periods. **Setting:** academic medical center, referral-based rheumatology clinic. **Patients:** forty volunteers with active, definite, or classical rheumatoid arthritis. Five patients dropped out, and two were removed for noncompliance. **Interventions:** treatment with nonsteroidal anti-inflammatory drugs, slow-acting antirheumatic drugs, and prednisone was continued. Twenty-one patients began with a daily dosage of 2.7 g of eicosapentaenoic acid and 1.8 g of docosahexaenoic acid given in 15 MAX-EPA capsules (R.P. Scherer, Clearwater, Florida), and 19 began with identical-appearing placebos. The background diet was unchanged. **Measurements and Main Results:** the following results favored fish oil placebo after 14 weeks: mean time to onset of fatigue improved by 156 minutes (95% confidence interval, 1.2 to 311.0 minutes), and

number of tender joints decreased by 3.5 (95% CI, -6.0 to -1.0). Other clinical measures favored fish oil as well but did not reach statistical significance. Neutrophil leukotriene B4 production was correlated with the decrease in number of tender joints (Spearman rank correlation $r=0.53$; p less than 0.05). There were no statistically significant differences in hemoglobin level, sedimentation rate, or presence of rheumatoid factor or in patient-reported adverse effects. An effect from the fish oil persisted beyond the 4-week washout period. Conclusions: fish-oil ingestion results in subjective alleviation of active rheumatoid arthritis and reduction in neutrophil leukotriene B4 production. Further studies are needed to elucidate mechanisms of action and optimal dose and duration of fish-oil supplementation

Dietary fish oil and olive oil supplementation in patients with rheumatoid arthritis. Clinical and immunologic effects.

Kremer JM, Lawrence DA, Jubiz W, et al.

Arthritis Rheum. 1990 Jun; 33(6):810-20.

Forty-nine patients with active rheumatoid arthritis completed a 24-week, prospective, double-blind, randomized study of dietary supplementation with 2 different dosages of fish oil and 1 dosage of olive oil. Clinical evaluations were performed at baseline and every 6 weeks thereafter, and immunologic variables were measured at baseline and after 24 weeks of study. The 3 groups of patients were matched for age, sex, disease severity, and use of disease-modifying antirheumatic drugs (DMARDs). Subjects continued receiving DMARDs and other background medications without change during the study. Twenty patients consumed daily dietary supplements of n3 fatty acids containing 27 mg/kg eicosapentaenoic acid (EPA) and 18 mg/kg docosahexaenoic acid (DHA) (low dose), 17 patients ingested 54 mg/kg EPA and 36 mg/kg DHA (high dose), and 12 patients ingested olive oil capsules containing 6.8 gm of oleic acid. Significant improvements from baseline in the number of tender joints were noted in the low-dose group at week 24 ($P = 0.05$) and in the high-dose group at week 18 ($P = 0.04$) and 24 ($P = 0.02$). Significant decreases from baseline in the number of swollen joints were noted in the low-dose group at weeks 12 ($P = 0.003$), 18 ($P = 0.002$), and 24 ($P = 0.001$) and in the high-dose group at weeks 12 ($P = 0.0001$), 18 ($P = 0.008$), and 24 ($P = 0.02$). A total of 5 of 45 clinical measures were significantly changed from baseline in the olive oil group, 8 of 45 in the low-dose fish oil group, and 21 of 45 in the high-dose fish oil group during the study ($P = 0.0002$). Neutrophil leukotriene B4 production decreased by 19% from baseline in the low-dose fish oil group ($P = 0.0003$) and 20% in the high-dose group ($P = 0.03$), while macrophage interleukin-1 production decreased by 38.5% in the olive oil group (P not significant), 40.6% in the low-dose group ($P = 0.06$), and 54.7% in the high-dose group ($P = 0.0005$). Tritiated thymidine incorporation in peripheral blood mononuclear cells after stimulation with concanavalin A increased significantly in all 3 groups after 24 weeks, compared with baseline values. We conclude that the clinical benefits of dietary supplementation with omega-3 fatty acids are more commonly observed in patients consuming higher dosages of fish oil for time intervals that are longer than those previously studied. Dietary supplementation with olive oil is also associated with certain changes in immune function, which require further investigation

[Endogenous opioid system in the realization of the analgesic effect of alpha-tocopherol in reference to algomenorrhea].

Kryzhanovskii GN, Bakuleva LP, Luzina NL, et al.

Biull Eksp Biol Med. 1988 Feb; 105(2):148-50.

Beta-endorphin-like immunoreactivity was studied in 7 patients with algomenorrhea during pain attack and 15 minutes after alpha-tocopherol administration with a therapeutic aim (till the analgetic effect was reached). There was an increase in beta-endorphin-like immunoreactivity after alpha-tocopherol administration. Naloxone administration to 9 patients with algomenorrhea of various etiology resumed the pain. The effect of alpha-tocopherol application for pain relief depended on the pathogenesis of algomenorrhea. At the same time naloxone administration failed to resume the pain in patients, in whom alpha-tocopherol had a strong analgetic effect. It is assumed that the endogenous opioid system participates in alpha-tocopherol effect on pain relief in patients with algomenorrhea

Treatment of osteoarthritis with a herbomineral formulation: a double-blind, placebo-controlled, cross-over study.

Kulkarni RR, Patki PS, Jog VP, et al.

J Ethnopharmacol. 1991 May; 33(1-2):91-5.

The clinical efficacy of a herbomineral formulation containing roots of *Withania somnifera*, the stem of *Boswellia serrata*, rhizomes of *Curcuma longa* and a zinc complex (Articulon-F), was evaluated in a randomized, double-blind, placebo controlled, cross-over study in patients with osteoarthritis. After a one-month single blind run-in period, 42 patients with osteoarthritis were randomly allocated to receive either a drug treatment or a matching placebo for a period of three months. After a 15-day wash-out period the patients were transferred to the other treatment for a further period of three months. Clinical efficacy was evaluated every fortnight on the basis of severity of pain, morning stiffness, Ritchie articular index, joint score, disability score and grip strength. Other parameters like erythrocyte sedimentation rate and radiological examination were carried out on a monthly

basis. Treatment with the herbomineral formulation produced a significant drop in severity of pain (P less than 0.001) and disability score (P less than 0.05). Radiological assessment, however, did not show any significant changes in both the groups. Side effects observed with this formulation did not necessitate withdrawal of treatment

Treatment of rheumatoid arthritis with gammalinolenic acid.

Leventhal LJ, Boyce EG, Zurier RB.

Ann Intern Med. 1993 Nov 1; 119(9):867-73.

OBJECTIVE: To assess the clinical efficacy and side effects of gammalinolenic acid, a plant-seed-derived essential fatty acid that suppresses inflammation and joint tissue injury in animal models. **DESIGN:** A randomized, double-blind, placebo-controlled, 24-week trial. **SETTING:** Rheumatology clinic of a university hospital. **PATIENTS:** Thirty-seven patients with rheumatoid arthritis and active synovitis. **INTERVENTION:** Treatment with 1.4 g/d gammalinolenic acid in borage seed oil or cotton seed oil (placebo). **MEASUREMENTS:** Physicians' and patients' global assessment of disease activity; joint tenderness, joint swelling, morning stiffness, grip strength, and ability to do daily activities. **RESULTS:** Treatment with gammalinolenic acid resulted in clinically important reduction in the signs and symptoms of disease activity in patients with rheumatoid arthritis (P < 0.05). In contrast, patients given a placebo showed no change or showed worsening of disease. Gammalinolenic acid reduced the number of tender joints by 36%, the tender joint score by 45%, swollen joint count by 28%, and the swollen joint score by 41%, whereas the placebo group did not show significant improvement in any measure. Overall clinical responses (significant change in four measures) were also better in the treatment group (P < 0.05). No patients withdrew from gammalinolenic acid treatment because of adverse reactions. **CONCLUSION:** Gammalinolenic acid in doses used in this study is a well-tolerated and effective treatment for active rheumatoid arthritis. Gammalinolenic acid is available worldwide as a component of evening primrose and borage seed oils. It is usually taken in far lower doses than used in this trial. It is not approved in the United States for the treatment of any condition and should not be viewed as therapy for any disease. Further controlled studies of its use in rheumatoid arthritis are warranted

Treatment of rheumatoid arthritis with blackcurrant seed oil.

Leventhal LJ, Boyce EG, Zurier RB.

Br J Rheumatol. 1994 Sep; 33(9):847-52.

The objective of this study was to assess the clinical efficacy and side effects of blackcurrant seed oil (BCSO), in a randomized, double-blind, placebo controlled, 24-week trial in patients with RA and active synovitis. BCSO is rich in gammalinolenic acid (GLA) and alphalinolenic acid (ALA). Both GLA and eicosapentaenoic acid which derives from ALA suppress inflammation and joint tissue injury in animal models. Treatment with BCSO resulted in reduction in signs and symptoms of disease activity in patients with RA (P < 0.05). In contrast, patients given a placebo showed no change in disease. Overall clinical responses (significant change in four measures) were no better in the treatment group than in the placebo group. No patients withdrew from BCSO treatment because of adverse reactions. However, many patients withdrew because BCSO and its placebo had to be administered in 15 large capsules daily. Nonetheless, the study indicates that BCSO is a potentially effective treatment for active RA. However, means must be found to reduce the size and number of capsules taken, so that larger studies of longer duration in RA patients can be done

Anti-inflammatory effect and mechanism of proanthocyanidins from grape seeds.

Li WG, Zhang XY, Wu YJ, et al.

Acta Pharmacol Sin. 2001 Dec; 22(12):1117-20.

AIM: To investigate the anti-inflammatory effect and mechanism of proanthocyanidins (PA) from grape seeds. **METHODS:** Croton oil-induced ear swelling in mice and carrageenan-induced hind paw edema in rats were prepared. The nitric oxide synthase (NOS) activity was measured by NADPH-diaphorase stain assay, nitric oxide (NO) content by Griess diazotization assay, N-acetyl-beta-D-glucosaminidase (beta-NAG) activity by spectrophotography, malondialdehyde (MDA) content by thiobarbituric acid (TBA) fluorescence technique, and IL-1beta, TNFalpha, and PGE2 content by radioimmunoassay (RIA). **RESULTS:** PA 10-40 mg/kg ip inhibited carrageenan-induced paw edema in rats and croton oil-induced ear swelling in mice in a dose-dependent manner. PA 10 mg/kg reduced MDA content in inflamed paws, inhibited beta-NAG and NOS activity, and lowered the content of NO, IL-1beta, TNFalpha, and PGE2 in exudate from edema paws of rats induced by carrageenan. The inhibitory effect of PA on all above indices was more evident than that of dexamethasone 2 mg/kg. **CONCLUSION:** PA has anti-inflammatory effect on experimental inflammation in rats and mice. Its mechanisms of anti-inflammatory action are relevant to oxygen free radical scavenging, anti-lipid peroxidation, and inhibition of the formation of inflammatory cytokines

Traditional Indian systems of medicine.

Lodha R, Bagga A.

Ann Acad Med Singapore. 2000 Jan; 29(1):37-41.

INTRODUCTION: A number of traditional systems of medicine exist in India of which Ayurveda is the most popular. Despite being in use for more than 3000 years, few properly designed trials have scientifically examined the clinical potential of Ayurvedic and other medications. **METHODS:** We reviewed the MEDLINE database to identify clinical trials conducted using traditional Indian medicines. Single case reports were excluded. **RESULTS:** Ayurvedic preparations have been successfully used for the treatment of bronchial asthma, ischaemic heart disease and hyperlipidaemia. Formulations containing curcumin were reported to reduce inflammation and disability in double-blind clinical trials on patients with rheumatoid arthritis. A number of products are reported to be useful in patients with acute viral hepatitis. A multicentric study by the Indian Council of Medical Research showed that a preparation from *Pterocarpus marsupium* was effective in reducing levels of blood glucose and glycosylated haemoglobin in patients with non-insulin-dependent diabetes mellitus. In another multicentric trial, patients with fistula-in-ano were randomised to surgery or application of medicated seton (Ksharsootra). Surgical treatment led to a faster cure but recurrence rates were lower with medicated seton. Administration of extract from *Bacopa monnieri*, to children with mental retardation, was reported to significantly improve short-term and long-term memory. **CONCLUSIONS:** Evidence-based studies on the efficacy and safety of traditional Indian medicines are limited. The essential ingredient in most formulations is not precisely defined. High quality studies are necessary to evaluate and compare the value of traditional Indian drugs to modern medicine

Double-blind clinical evaluation of the relative efficacy of ibuprofen and glucosamine sulphate in the management of osteoarthritis of the knee in out-patients.

Lopes VA.

Curr Med Res Opin. 1982; 8(3):145-9.

A double-blind trial was carried out in 40 out-patients with unilateral osteoarthritis of the knee to compare the efficacy and tolerance of oral treatment with 1.5 g glucosamine sulphate or 1.2 g ibuprofen daily over a period of 8 weeks. Pain scores decreased faster during the first 2 weeks in the ibuprofen than in the glucosamine treatment group. Although the rate of decrease was slower, the reduction in pain scores was continued throughout the trial period in patients on glucosamine and the difference between the two groups turned significantly in favour of glucosamine at Week 8. No significant differences were observed in swelling or any of the other parameters monitored. Tolerance was satisfactory with both treatments, with only minor complaints being reported by 2 patients on glucosamine compared with 5 patients on ibuprofen

Acupuncture and clinical hypnosis for facial and head and neck pain: a single crossover comparison.

Lu DP, Lu GP, Kleinman L.

Am J Clin Hypn. 2001 Oct; 44(2):141-8.

Despite their long histories, acupuncture and hypnosis have only recently been acknowledged as valuable by the medical establishment in the U.S. Few studies have used rigorous prospective measurement to evaluate the individual or relative merits of hypnosis and acupuncture in specific clinical settings. In this study, 25 patients with various head and neck pain were studied. Each had an initial assessment of their pain, as well as of their attitudes and expectations. All patients received acupuncture, followed by a reassessment of their pain. After a washout period they received another assessment of pain before and after hypnosis therapy. Preferences for therapy were sought following the hypnotic intervention. Both acupuncture and hypnosis were effective at relieving pain under these conditions. The average relief in pain reported was 4.2 units on a ten point scale, with hypnosis reducing pain by a mean of 4.8 units, compared to 3.7 for acupuncture ($p = 0.26$). Patient characteristics appeared to impact the effectiveness of treatment: patients with acute pain benefited most from acupuncture treatment, whereas patients with psychogenic pain were more likely to benefit from hypnosis. Patients with chronic pain had more variation in their results. Patients who received healing suggestions from a tape during a hypnotic trance benefited more than those who received no such suggestion, and acupuncture patients who were needle phobic benefited less than those who were not fearful of needles. This study demonstrates the benefits of well designed studies of the effectiveness of these alternative modalities. More work is needed to help practitioners identify which patients are most likely to benefit from these complementary therapies

Chronic dental pain: possible benefits of food restriction and sodium ascorbate.

Lytle RL.

Tocopherol in Osteoarthritis: a controlled pilot study.

Machtey I, Ouaknine L.

J Am Geriatr Soc. 1978 Jul; 26(7):328-30.

Thirty-two patients entered a simple-blind, cross-over study on the action of tocopherol in osteoarthritis; only 3 did not complete the course. Each patient was randomly assigned either to the tocopherol group (600 mg/day for 10 days) or to the placebo group. After 10 days the groups were transposed. The analgesic and other possible effects of tocopherol vs. placebo were assessed by the patients' daily records, by the physician's personal examination and interview, and by observations on the use of an additionally permitted analgesic (pro re nata). In 52 percent of the 29 patients who completed the study of good tocopherol analgesic effect was noted, but only 4 percent of those receiving placebo reported a similar effect. The difference was statistically significant. Further large-scale assessment of the influence of tocopherol in osteoarthritis would seem to be justified

The immunotherapeutic potential of melatonin.

Maestroni GJ.

Expert Opin Investig Drugs. 2001 Mar; 10(3):467-76.

The interaction between the brain and the immune system is essential for the adaptive response of an organism against environmental challenges. In this context, the pineal neurohormone melatonin (MEL) plays an important role. T-helper cells express G-protein coupled cell membrane MEL receptors and, perhaps, MEL nuclear receptors. Activation of MEL receptors enhances the release of T-helper cell Type 1 (Th1) cytokines, such as gamma-interferon (gamma-IFN) and IL-2, as well as of novel opioid cytokines. MEL has been reported also to enhance the production of IL-1, IL-6 and IL-12 in human monocytes. These mediators may counteract stress-induced immunodepression and other secondary immunodeficiencies and protect mice against lethal viral encephalitis, bacterial diseases and septic shock. Therefore, MEL has interesting immunotherapeutic potential in both viral and bacterial infections. MEL may also influence haemopoiesis either by stimulating haemopoietic cytokines, including opioids, or by directly affecting specific progenitor cells such as pre-B cells, monocytes and NK cells. MEL may thus be used to stimulate the immune response during viral and bacterial infections as well as to strengthen the immune reactivity as a prophylactic procedure. In both mice and cancer patients, the haemopoietic effect of MEL may diminish the toxicity associated with common chemotherapeutic protocols. Through its pro-inflammatory action, MEL may play an adverse role in autoimmune diseases. Rheumatoid arthritis patients have increased nocturnal plasma levels of MEL and their synovial macrophages respond to MEL with an increased production of IL-12 and nitric oxide (NO). In these patients, inhibition of MEL synthesis or use of MEL antagonists might have a therapeutic effect. In other diseases such as multiple sclerosis the role of MEL is controversial. However, the correct therapeutic use of MEL or MEL antagonists should be based on a complete understanding of their mechanism of action. It is not yet clear whether MEL acts only on Th1 cells or also on T-helper Type 2 cells (Th2). This is an important point as the Th1/Th2 balance is of crucial importance in the immune system homeostasis. Furthermore, MEL being the endocrine messenger of darkness, its endogenous synthesis depends on the photoperiod and shows seasonal variations. Similarly, the pharmacological effects of MEL might also be season-dependent. No information is available concerning this point. Therefore, studies are needed to investigate whether the immunotherapeutic effect of MEL changes with the alternating seasons

Osteoarthritis: a new paradigm for the arthrocline. I. Longevity News.

Maher JH.

2001;

The diagnostic validity and therapeutic value of lumbar facet joint nerve blocks with or without adjuvant agents.

Manchikanti L, Pampati V, Fellows B, et al.

Curr Rev Pain. 2000; 4(5):337-44.

Facet joints have been described as an important source of low back pain. The value of medial branch blocks in the diagnosis of facet joint mediated pain is considered important. However, the therapeutic value of medial branch blocks has not been determined. This study was designed to evaluate the duration of relief obtained and therapeutic value following controlled medial

branch blocks with or without adjuvant agents Sarapin (High Chemical Company, Levittown, PA) and Depo-medrol (Pharmacia and Upjohn Company, Kalamazoo, MI). The study population consisted of 180 consecutive patients seen in a single pain management practice, divided into three groups with 60 patients in each group. Group I was treated with local anesthetic only, Group II with the addition of Sarapin, and Group III with the addition of Depo-medrol along with Sarapin. The prevalence of facet joint pain in chronic low back pain was determined as 36%, with a false-positive rate of 25%. Comparison of duration of relief in days with each block in the three groups showed that the relief was significantly superior in Group III compared with Group I and Group II, whereas Group II was superior to Group I

Effect of guided imagery on quality of life for patients with chronic tension-type headache.

Mannix LK, Chandurkar RS, Rybicki LA, et al.

Headache. 1999 May; 39(5):326-34.

OBJECTIVE: To determine the effect of adjuvant guided imagery on patients with chronic tension-type headache. **BACKGROUND:** Management of chronic tension-type headache often requires a combination of pharmacological and nonpharmacological therapies. Guided imagery is a relaxation technique based on visualizing pleasant images and body awareness. **METHODS:** One hundred twenty-nine patients with chronic tension-type headache completed the Headache Disability Inventory and the Medical Outcomes Study Short Form (SF-36) at their initial visit to a specialty headache center and again 1 month after the visit. In addition to individualized headache therapy, patients listened to a guided imagery audiocassette tape daily for the month. One hundred thirty-one control subjects received individualized therapy without guided imagery. **RESULTS:** Controls and the patients who listened to the guided imagery tape improved in headache frequency, headache severity, patient global assessment, quality of life, and disability caused by headache. More guided imagery patients (21.7%) than controls (7.6%) reported that their headaches were much better ($P = .004$). The guided imagery patients had significantly more improvement than the controls in three of the SF-36 domains: bodily pain (95% CI; guided imagery patients 11.0, controls 0.2), vitality (95% CI; guided imagery patients 10.9, controls 1.7), and mental health (95% CI; guided imagery patients 7.8, controls 0.4). **CONCLUSIONS:** Guided imagery is an effective adjunct therapy for the management of chronic tension-type headache

Glucosamine sulfate compared to ibuprofen in osteoarthritis of the knee.

Muller-Fassbender H, Bach GL, Haase W, et al.

Osteoarthritis Cartilage. 1994 Mar; 2(1):61-9.

Glucosamine sulfate is able to stimulate proteoglycan synthesis by chondrocytes and has mild anti-inflammatory properties. In clinical trials, glucosamine sulfate was more effective than placebo in controlling the symptoms of osteoarthritis (OA). In order to better characterize this therapeutic activity, we conducted a randomized, double-blind, parallel-group study of glucosamine sulfate 500 mg t.i.d. vs ibuprofen 400 mg t.i.d., orally for 4 weeks. The study included 200 hospitalized patients with active OA of the knee, symptoms for at least 3 months and a Lequesne's index of at least 7 points. Patients were evaluated weekly. Response was defined as a reduction in the Lequesne's index by at least 2 points if the enrollment value was higher than 12 points, or by at least 1 point if the enrollment value was 12 or less points, together with a positive overall assessment by the investigator. The improvement tended to be sooner under ibuprofen (48% responders vs 28% after the 1st treatment week; $P = 0.06$, Fisher's Exact test), but there was no difference from the 2nd week onward, with a success rate of 52% in the ibuprofen group and of 48% in the glucosamine group ($P = 0.67$) at the end of treatment. The average Lequesne's index at enrollment was around 16 points and decreased by over 6 points in both groups, again with the above described trend. On the other hand, 35% of patients on ibuprofen reported adverse events, mainly of gastrointestinal origin, vs 6% adverse events with glucosamine ($P < 0.001$, Fisher's Exact test). The number of adverse event related drop-outs was different between the two groups (7% vs 1%, respectively; $P = "0.035$)." Glucosamine sulfate was therefore as effective as ibuprofen on symptoms of knee OA. These data confirm glucosamine sulfate as a safe symptomatic Slow Acting Drug for OA

Randomised double-blind placebo-controlled trial of feverfew in migraine prevention.

Murphy JJ, Heptinstall S, Mitchell JR.

Lancet. 1988 Jul 23; 2(8604):189-92.

The use of feverfew (*Tanacetum parthenium*) for migraine prophylaxis was assessed in a randomised, double-blind, placebo-controlled crossover study. After a one-month single-blind placebo run-in, 72 volunteers were randomly allocated to receive either one capsule of dried feverfew leaves a day or matching placebo for four months and then transferred to the other treatment limb for a further four months. Frequency and severity of attacks were determined from diary cards which were issued every two months; efficacy of each treatment was also assessed by visual analogue scores. 60 patients completed the study and full

information was available in 59. Treatment with feverfew was associated with a reduction in the mean number and severity of attacks in each two-month period, and in the degree of vomiting; duration of individual attacks was unaltered. Visual analogue scores also indicated a significant improvement with feverfew. There were no serious side-effects

Ginger (*Zingiber officinale*) in migraine headache.

Mustafa T, Srivastava KC.

J Ethnopharmacol. 1990 Jul; 29(3):267-73.

Migraine is considered as a neurological disorder with little convincing evidence of the involvement of some vascular phenomenon. Recent understanding of the mechanisms behind migraine pain generation and perception have considerably helped the development of modern migraine drugs. Most migraine drugs in use, i.e., ergotamine and dihydroergotamine, iprazochrome, pizotifen and diazepam; and non-steroidal antiinflammatory drugs (i.e. aspirin, paracetamol, persantin, etc.) have side-effects and are prescribed with caution for a limited duration. Ginger is reported in Ayurvedic and Tibb systems of medicine to be useful in neurological disorders. It is proposed that administration of ginger may exert abortive and prophylactic effects in migraine headache without any side-effects

[Examples of the use of music in clinical medicine].

Myskja A, Lindbaek M.

Tidsskr Nor Laegeforen. 2000 Apr 10; 120(10):1186-90.

Music has been an element in medical practice throughout history. There is growing interest in music as a therapeutic tool. Since there is no generally accepted standard for how, when and where music should be applied within a medical framework, this literature study endeavours to present an overview of central areas of application of music in medicine. It further attempts to find tentative conclusions that may be drawn from existing clinical research on the efficacy of music as a medical tool. Traditionally, music has been linked to the treatment of mental illness, and has been used successfully to treat anxiety and depression and improve function in schizophrenia and autism. In clinical medicine several studies have shown analgetic and anxiolytic properties that have been used in intensive care units, both in diagnostic procedures like gastroscopy and in larger operations, in preoperative as well as postoperative phases, reducing the need for medication in several studies. The combination of music with guided imagery and deep relaxation has shown reduction of symptoms and increased well-being in chronic pain syndromes, whether from cancer or rheumatic origin. Music has been used as support in pregnancy and gestation, in internal medicine, oncology, paediatrics and other related fields. The use of music with geriatric patients could prove to be especially fruitful, both in its receptive and its active aspect. Studies have shown that music can improve function and alleviate symptoms in stroke rehabilitation, Parkinson's disease, Alzheimer's disease and other forms of dementia. The role of music in medicine is primarily supportive and palliative. The supportive role of music has a natural field of application in palliative medicine and terminal care. Music is well tolerated, inexpensive, with good compliance and few side effects

Boron beats arthritis.

Newnham RE.

Proc ANZAAS. 1979;

Arthritis or skeletal fluorosis and boron.

Newnham RE.

Letter Int Clin Nutr Rev. 1991; 11(2):68-70.

Therapeutic effect of shark cartilage.

Orcasita JA.

Townsend Lett Doctors. 1989;288-91.

Glucosamine sulfate use and delay of progression of knee osteoarthritis: a 3-year, randomized, placebo-controlled, double-blind study.

Arch Intern Med. 2002 Oct 14; 162(18):2113-23.

BACKGROUND: Conventional symptomatic treatments for osteoarthritis do not favorably affect disease progression. The aim of this randomized, placebo-controlled trial was to determine whether long-term (3-year) treatment with glucosamine sulfate can modify the progression of joint structure and symptom changes in knee osteoarthritis, as previously suggested. **METHODS:** Two hundred two patients with knee osteoarthritis (using American College of Rheumatology criteria) were randomized to receive oral glucosamine sulfate, 1500 mg once a day, or placebo. Changes in radiographic minimum joint space width were measured in the medial compartment of the tibiofemoral joint, and symptoms were assessed using the algo-functional indexes of Lequesne and WOMAC (Western Ontario and McMaster Universities). **RESULTS:** Osteoarthritis was of mild to moderate severity at enrollment, with average joint space widths of slightly less than 4 mm and a Lequesne index score of less than 9 points. Progressive joint space narrowing with placebo use was -0.19 mm (95% confidence interval, -0.29 to -0.09 mm) after 3 years. Conversely, there was no average change with glucosamine sulfate use (0.04 mm; 95% confidence interval, -0.06 to 0.14 mm), with a significant difference between groups ($P = .001$). Fewer patients treated with glucosamine sulfate experienced predefined severe narrowings (>0.5 mm): 5% vs 14% ($P = .05$). Symptoms improved modestly with placebo use but as much as 20% to 25% with glucosamine sulfate use, with significant final differences on the Lequesne index and the WOMAC total index and pain, function, and stiffness subscales. Safety was good and without differences between groups. **CONCLUSION:** Long-term treatment with glucosamine sulfate retarded the progression of knee osteoarthritis, possibly determining disease modification

A highly successful and novel model for treatment of chronic painful diabetic peripheral neuropathy.

Pfeifer MA, Ross DR, Schrage JP, et al.

Diabetes Care. 1993 Aug; 16(8):1103-15.

OBJECTIVE--To investigate why, in spite of a vast variety of treatment agents, the alleviation of pain in patients with diabetic neuropathy is difficult. Previous studies have not used a treatment algorithm based on anatomic site and neuropathophysiological source of the neuropathic pain. **RESEARCH DESIGN AND METHODS--**A model that categorizes the types of pain into three groups (superficial, deep, and muscular) was applied in 75 diabetic patients with chronic (> 12 mo) painful distal symmetrical polyneuropathy in a controlled case series. Twenty-two patients were untreated and 53 patients were treated with imipramine +/- mexiletine for deep pain, capsaicin for superficial pain, and stretching exercises and metaxalone +/- piroxicam for muscular pain. Each type of pain was scored separately on a scale of 0 (none) to 19 (worst), and the total of all three types was used as an index of overall pain. Ability to sleep through the night was scored by a scale of 1 (never) to 5 (always). **RESULTS--**No significant differences were observed in initial pain scores, sleep scores, demographics, biochemistries, or physical findings between the two groups. After 3 mo a significant improvement in scores was noted in the treated but not the untreated patients. In addition, a significant difference was found in the change of scores between the treated and untreated patients: total pain (-18 +/- 2 vs. 0 +/- 2), deep pain (-7 +/- 1 vs. 0 +/- 1), superficial pain (-5 +/- 1 vs. 0 +/- 1), muscular pain (-6 +/- 1 vs. 0 +/- 1), and sleep (1.2 +/- 0.2 vs. 0.2 +/- 0.2), all $P < 0.0001$. In treated patients 21% became pain-free (total pain 5, but not total elimination of painful symptoms), and 13% were considered treatment failures (a decrease in total pain of $< \text{or} = 5$)." This compares with 0 ($P < 0.02$), 10 ($P < 0.0001$), and 90% ($P < 0.0001$), respectively, in the untreated patients. **CONCLUSIONS--**This study presents a new rationale and hypothesis for the successful treatment of chronic painful diabetic peripheral neuropathy. It uniquely bases the treatment algorithm on the types and sources of the pain

Double-blind clinical evaluation of oral glucosamine sulphate in the basic treatment of osteoarthrosis.

Pujalte JM, Llavore EP, Ylescupidéz FR.

Curr Med Res Opin. 1980; 7(2):110-4.

The efficacy and tolerance of oral glucosamine sulphate were tested against placebo in a prospective double-blind trial in 20 out-patients with established osteoarthrosis. Two capsules of either glucosaminine sulphate (250 mg) or placebo were administered 3-times daily over a period of 6 to 8 weeks. Articular pain, joint tenderness and restricted movement were semi-quantitatively scored 1 to 4 every 3 days, and individually averaged over the treatment period (overall composite score). Possible side-reactions were similarly scored upon positive questioning of the patients. Haematology, erythrocyte sedimentation rate, urine analysis and X-rays were recorded before and after treatment. Significant alleviation of symptoms was associated with the use of the active drug at the prescribed dose. Similarly, patients given glucosamine sulphate experienced earlier alleviation of symptoms compared with those who had placebo. The use of glucosamine sulphate also resulted in a significantly larger proportion of patients who experienced lessening or disappearance of symptoms within the trial period. No adverse reactions were reported by the patients treated with glucosamine, and no variation in laboratory tests was recorded

Pain and vitamin B1 therapy.

Quirin H.

Bibl Nutr Dieta. 1986;(38):110-1.

Topical capsaicin. A review of its pharmacological properties and therapeutic potential in post-herpetic neuralgia, diabetic neuropathy and osteoarthritis.

Rains C, Bryson HM.

Drugs Aging. 1995 Oct; 7(4):317-28.

Capsaicin, the active principle of hot chili pepper, is thought to selectively stimulate unmyelinated C fibre afferent neurons and cause the release of substance P. Prolonged application of capsaicin reversibly depletes stores of substance P, and possibly other neurotransmitters, from sensory nerve endings. This reduces or abolishes the transmission of painful stimuli from the peripheral nerve fibres to the higher centres. In clinical studies of patients with post-herpetic neuralgia, diabetic neuropathy or osteoarthritis, adjunctive therapy with topical capsaicin achieved better relief than its vehicle in most studies. In a single trial, topical capsaicin demonstrated similar efficacy to oral amitriptyline in patients with diabetic neuropathy. Topical capsaicin is not associated with any severe systemic adverse effects. However, stinging and burning, particularly during the first week of therapy, is reported by many patients. Topical capsaicin merits consideration as adjuvant therapy in conditions such as post-herpetic neuralgia, diabetic neuropathy and osteoarthritis, where the pain can be chronic and difficult to treat

Long-term studies of antiosteoarthritic drugs: an assessment.

Rejholec V.

Semin Arthritis Rheum. 1987 Nov; 17(2 Suppl 1):35-53.

DL-phenylalanine markedly potentiates opiate analgesia - an example of nutrient/pharmaceutical up-regulation of the endogenous analgesia system.

Russell AL, McCarty MF.

Med Hypotheses. 2000 Oct; 55(4):283-8.

In the author's clinical experience, concurrent treatment with DL-phenylalanine (DLPA) often appears to potentiate pain relief and also ease depression in patients receiving opiates for chronic non-malignant pain. An analysis of this phenomenon suggests that it may be mediated, at least in part, by up-regulation of the 'endogenous analgesia system' (EAS), a neural pathway that projects caudally from medullary nuclei to the dorsal horn of the spinal column; when stimulated by chronic pain or therapeutic measures such as opiates or acupuncture, the EAS suppresses activation of second-order pain-receptive neurons in the dorsal horn, and thereby alleviates pain. Since serotonin and enkephalins are key neurotransmitters in the EAS, it is reasonable to predict that measures which promote serotonin activity (such as 5-hydroxytryptophan and serotonin-reuptake inhibitors) as well as enkephalin activity (such as D-phenylalanine, an enkephalinase inhibitor) should potentiate EAS-mediated analgesia - a view consistent with much previous medical research. Comprehensive support of the EAS with well-tolerated nutrients and pharmaceuticals may amplify the analgesic efficacy of chronic opiate therapy, while enabling dosage reductions that minimize opiate side-effects. Analogously, this approach may complement the efficacy of acupuncture and other analgesic measures that activate the EAS

Pain and public policy: pain care remains on Congressional agenda.

Saner RJ.

2000;

Medical hypnosis for temporomandibular disorders: treatment efficacy and medical utilization outcome.

Simon EP, Lewis DM.

Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2000 Jul; 90(1):54-63.

AIM: The aim of this study was to examine the effectiveness of a particular behavioral medicine treatment modality, medical hypnosis, on reducing the pain symptoms of temporomandibular disorders (TMD). METHODS: Twenty-eight patients who were recalcitrant to conservative treatment for TMD participated in a medical hypnosis treatment program and completed measures of their pain symptoms on 4 separate occasions: during wait list, before treatment, after treatment, and at a 6-month follow-up. In addition, pretreatment and posttreatment medical use were examined. RESULTS: Statistical analysis of this open trial suggests that medical hypnosis is a potentially valuable treatment modality for TMD. Patients reported a significant decrease in pain frequency ($F [3, 87] = 14.79, P < .001$), pain duration ($F [3, 87] = 9.56, P < .001$), and pain intensity ($F [3, 87] = 15.08, P < .001$), and an increase in daily functioning. Analysis suggests that their symptoms did not simply spontaneously improve, and that their treatment gains were maintained for 6 months after hypnosis treatment. Further, after hypnosis treatment, patients exhibited a significant reduction in medical use. CONCLUSION: Medical hypnosis appears to be an effective treatment modality for TMD, in terms of reducing both symptoms and medical use

Topical capsaicin in painful diabetic neuropathy. Controlled study with long-term follow-up.

Tandan R, Lewis GA, Krusinski PB, et al.

Diabetes Care. 1992 Jan; 15(1):8-14.

OBJECTIVE--We conducted an 8-wk controlled study with topical 0.075% capsaicin in subjects with chronic severe painful diabetic neuropathy who were unresponsive or intolerant to conventional therapy. Capsaicin is an alkaloid found in capsicum peppers and produces desensitization to noxious thermal, chemical, and mechanical stimuli when applied topically. RESEARCH DESIGN AND METHODS--In 22 randomly assigned subjects, either capsaicin or vehicle cream was applied to painful areas 4 times/day. Pain measurements were recorded at baseline and at 2-wk intervals for 8 wk. RESULTS--Capsaicin treatment was more beneficial than vehicle treatment in the overall clinical improvement of pain status, as measured by physician's global evaluation ($P = 0.038$) and by a categorical pain severity scale ($P = 0.057$). Decrease in mean pain intensity by a visual analogue scale was 16% in capsaicin-treated and 4.1% in vehicle-treated subjects. Mean pain relief on visual analogue scale was 44.6 and 23.2%, respectively. In a follow-up open-label study, approximately 50% of subjects reported improved pain control or were cured, and 25% each were unchanged or worse. A burning sensation at the application site was noted by some subjects but both its magnitude and duration decreased with time. CONCLUSIONS-- Results from this preliminary study suggest that topical 0.075% capsaicin may be of value in subjects with diabetic neuropathy and intractable pain

Evaluation of electromagnetic fields in the treatment of pain in patients with lumbar radiculopathy or the whiplash syndrome.

Thuile C, Walzl M.

NeuroRehabilitation. 2002; 17(1):63-7.

Back pain and the whiplash syndrome are very common diseases involving tremendous costs and extensive medical effort. A quick and effective reduction of symptoms, especially pain, is required. In two prospective randomized studies, patients with either lumbar radiculopathy in the segments L5/S1 or the whiplash syndrome were investigated. Inclusion criteria were as follows: either clinically verified painful lumbar radiculopathy in the segments L5/S1 and a Lasegue's sign of 30 degrees (or more), or typical signs of the whiplash syndrome such as painful restriction of rotation and flexion/extension. Exclusion criteria were prolapsed intervertebral discs, systemic neurological diseases, epilepsy, and pregnancy. A total of 100 patients with lumbar radiculopathy and 92 with the whiplash syndrome were selected and entered in the study following a 1:1 ratio. Both groups (magnetic field treatment and controls) received standard medication consisting of diclofenac and tizanidine, while the magnetic field was only applied in group 1, twice a day, for a period of two weeks. In patients suffering from radiculopathy, the average time until pain relief and painless walking was 8.2 +/- 0.5 days in the magnetic field group, and 11.7 +/- 0.5 days in controls ($p < 0.04$). In patients with the whiplash syndrome, pain was measured on a ten-point scale. Pain in the head was on average 4.6 before and 2.1 after treatment in those receiving magnetic field treatment, and 4.2/3.5 in controls. Neck pain was on average 6.3/1.9 as opposed to 5.3/4.6, and pain in the shoulder/arm was 2.4/0.8 as opposed to 2.8/2.2 ($p < 0.03$ for all regions). Hence, magnetic fields appear to have a considerable and statistically significant potential for reducing pain in cases of lumbar radiculopathy and the whiplash syndrome

N-3 polyunsaturated fatty acids, interleukin-1, and tumor necrosis factor.

Tulleken JE.

Engl J Med. 1989; 321(1):55-6.

Characterization of extracellular phospholipase A2 in rheumatoid synovial fluid.

Vadas P, Stefanski E, Pruzanski W.

Life Sci. 1985 Feb 11; 36(6):579-87.

Phospholipase A2 (PLA2) activity has now been identified in rheumatoid synovial fluids. This PLA2 is a calcium-requiring protein of MW 11,000 with a neutral pH optimum. Its activity was inhibited by high concentrations of Mg²⁺, and by the active site-directed histidine reagent p-bromophenacyl bromide. Ionic and nonionic detergents, or the sulfhydryl reagent dithiothreitol caused loss of enzyme activity. Synovial fluid PLA2 did not interact with sulphated mucopolysaccharides such as heparin or chondroitin sulphate. Release and sequestration of PLA2 in the joint space may contribute to the characteristic rheumatoid inflammatory changes

Double-blind clinical evaluation of intra-articular glucosamine in outpatients with gonarthrosis.

Vajaradul Y.

Clin Ther. 1981; 3(5):336-43.

Fifty-four outpatients with gonarthrosis participated in a double-blind clinical test with the aim of evaluating the efficacy and tolerance of intra-articular glucosamine in comparison with a 0.9% NaCl placebo. Each patient had one intra-articular injection per week for five consecutive weeks. Pain, active and passive mobility of the joint, swelling, and generalized and local intolerance symptoms were recorded before beginning the treatment, and four weeks after the last injection. Glucosamine reduced pain to a significantly greater extent than did placebo, and resulted in significantly more pain-free patients. The angle of joint flexion substantially increased after glucosamine treatment. Active mobility increased with both treatments, with a more favorable trend after glucosamine administration. Knee swelling did not decrease significantly after glucosamine, whereas it worsened (although not significantly) after placebo. There were no local or general intolerance symptoms during and after treatment. Glucosamine administration was able to accelerate the recovery of arthrosic patients, with no resulting side effects, and to partially restore articular function. In addition, the clinical recovery did not fade after treatment ended, but lasted for the following month, at least. These features are a definite improvement over antirheumatic drugs, the major drawbacks of which are action of short duration and side effects. Glucosamine therapy therefore deserves a selected place in the management of osteoarthritis

Selenium deficiency in total parenteral nutrition.

van Rij AM, Thomson CD, McKenzie JM, et al.

Am J Clin Nutr. 1979 Oct; 32(10):2076-85.

Magnesium and its role in vascular reactivity and coagulation.

Weaver K.

Contemp Nutr. 1987;(12):3.

Physicians' attitudes toward pain and the use of opioid analgesics: results of a survey from the Texas Cancer Pain Initiative.

Weinstein SM, Laux LF, Thornby JI, et al.

South Med J. 2000 May; 93(5):479-87.

BACKGROUND: Despite extensive progress in the scientific understanding of pain in humans, serious mismanagement and undermedication in treating acute and chronic pain is a continuing problem. This study was designed to examine the barriers to adequate pain management, especially as they might be associated with community size and medical discipline. **METHODS:** A 59-item survey was used to measure physicians' attitudes, knowledge, and psychological factors that contribute to pain management practices. **RESULTS:** Overall, a significant number of physicians in this survey revealed opiophobia (prejudice against the use of opioid analgesics), displayed lack of knowledge about pain and its treatment, and had negative views about patients with chronic pain. There were significant differences among groups of physicians based on size of geographic practice area and medical discipline. **CONCLUSIONS:** New educational strategies are needed to overcome these barriers and to improve pain treatment in routine medical practice. The effect of practice milieu must be taken into consideration

Magnesium can relieve migraine (and other magnesium-related matter).

Wright JV.

AAEM Newsletter. 1989;1989 Winter:14.

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