**Selected by
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Latest Publications You Should Not Miss

**Berman BM, Langevin HH, Witt CM, Dubner R:
Acupuncture for chronic low back pain. N Engl J Med
2010;363:454–461.**

A 45-year-old construction worker with a 7-year history of intermittent low back pain is seen by his family physician. The pain has gradually increased over the past 4 months, despite pain medications, physical therapy, and two epidural corticosteroid injections. The pain is described as a dull ache in the lumbosacral area with episodic aching in the posterior aspect of both thighs; it worsens with prolonged standing and sitting. He is concerned about losing his job, while at the same time worried that continuing to work could cause further pain. The results of a neurologic examination and a straight-leg-raising test are normal. Magnetic resonance imaging (MRI) shows evidence of moderate degenerative disk disease at the L4–L5 and L5–S1 levels and a small midline disk herniation at L5–S1 without frank nerve impingement. The patient wonders whether acupuncture would be beneficial and asks for a referral to a licensed acupuncturist.

**Wang C, Schmid CH, Roness R, Kalish R, Yinh J,
Goldenberg DL, Lee Y, McAlindon T: A randomized
trial of tai chi for fibromyalgia. N Engl J Med 2010;
363:743–754.**

Background: Previous research has suggested that tai chi offers a therapeutic benefit in patients with fibromyalgia.

Methods: We conducted a single-blind, randomized trial of classic Yang-style tai chi as compared with a control intervention consisting of wellness education and stretching for the treatment of fibromyalgia (defined by American College of Rheumatology 1990 criteria). Sessions lasted 60 min each and took place twice a week for 12 weeks for each of the study groups. The primary end point was a change in the Fibromyalgia Impact Questionnaire (FIQ) score (ranging from 0 to 100, with higher scores indicating more severe symptoms) at the end of 12 weeks. Secondary end points included summary scores on the physical and mental com-

ponents of the Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36). All assessments were repeated at 24 weeks to test the durability of the response.

Results: Of the 66 randomly assigned patients, the 33 in the tai chi group had clinically important improvements in the FIQ total score and quality of life. Mean ($\pm$ SD) baseline and 12-week FIQ scores for the tai chi group were 62.9 ± 15.5 and 35.1 ± 18.8 , respectively, versus 68.0 ± 11 and 58.6 ± 17.6 , respectively, for the control group (change from baseline in the tai chi group vs. change from baseline in the control group, -18.4 points; $p < 0.001$). The corresponding SF-36 physical-component scores were 28.5 ± 8.4 and 37.0 ± 10.5 for the tai chi group versus 28.0 ± 7.8 and 29.4 ± 7.4 for the control group (between-group difference, 7.1 points; $p = 0.001$), and the mental-component scores were 42.6 ± 12.2 and 50.3 ± 10.2 for the tai chi group versus 37.8 ± 10.5 and 39.4 ± 11.9 for the control group (between-group difference, 6.1 points; $p = 0.03$). Improvements were maintained at 24 weeks (between-group difference in the FIQ score, -18.3 points; $p < 0.001$). No adverse events were observed.

Conclusion: Tai chi may be a useful treatment for fibromyalgia and merits long-term study in larger study populations. (Funded by the National Center for Complementary and Alternative Medicine and others; ClinicalTrials.gov number, NCT00515008.)

**Angermeyer L, Melchart D, Linde K: Multifactorial
lifestyle interventions in the primary and secondary
prevention of cardiovascular disease and type 2
diabetes mellitus – a systematic review of randomized
controlled trials. Ann Behav Med 2010;40:49–64.**

This systematic review aims to summarize the available randomized trials of multifactorial lifestyle interventions in the primary and secondary prevention of coronary heart disease and type 2 diabetes mellitus. Randomized trials investigating the effects of lifestyle interventions including the elements of diet, physical activity, and stress management in people at increased risk for or with manifest coronary heart disease or type 2 diabetes mellitus were searched for in five electronic databases and by citation tracking. Quality was assessed using the Cochrane Collaboration's risk of

bias tool. Exploratory effect size calculations were performed for a variety of laboratory and clinical outcome measures. Twenty-five trials including a total of 7,703 participants met the inclusion criteria. Fifteen trials were in patients with coronary heart disease, seven in patients with type 2 diabetes mellitus, and three on primary prevention. The interventions varied greatly regarding concept, intensity, and providers. Compared to participants in 'usual care' control groups, there were no consistent effects on lipid levels and blood pressure and small effects on body mass index and glycated hemoglobin (HbA1c). Composite cardiac event rates were significantly less in the intervention groups of the few trials reporting these outcomes. Mortality was also lower in the intervention groups, but the difference was not statistically significant, and confidence intervals were wide. The evidence base for multifactorial lifestyle interventions is weak. Effects on surrogate measures seem minor, but there may be clinically relevant effects on major clinical endpoints.

**Rasmussen HN, Scheier MF, Greenhouse JB:
Optimism and physical health: a meta-analytic review.
Ann Behav Med 2009;37:239–256.**

Background: Prior research links optimism to physical health, but the strength of the association has not been systematically evaluated.

Purpose: The purpose of this study is to conduct a meta-analytic review to determine the strength of the association between optimism and physical health.

Methods: The findings from 83 studies, with 108 effect sizes (ESs), were included in the analyses, using random-effects models.

Results: Overall, the mean ES characterizing the relationship between optimism and physical health outcomes was 0.17, $p < 0.001$. ESs were larger for studies using subjective (versus objective) measures of physical health. Subsidiary analyses were also conducted grouping studies into those that focused solely on mortality, survival, cardiovascular outcomes, physiological markers (including immune function), immune function only, cancer outcomes, outcomes related to pregnancy, physical symptoms, or pain. In each case, optimism was a significant predictor of health outcomes or markers, all $p < 0.001$.

Conclusions: Optimism is a significant predictor of positive physical health outcomes.

Davidson KW, Mostofsky E, Whang W: Don't worry, be happy: positive affect and reduced 10-year incident coronary heart disease: the Canadian Nova Scotia Health Survey. Eur Heart J 2010;31:1065–1070.

Aims: Positive affect is believed to predict cardiovascular health independent of negative affect. We examined whether higher levels of positive affect are associated with a lower risk of coronary heart disease (CHD) in a large prospective study with 10 years of follow-up.

Methods and Results: We examined the association between positive affect and cardiovascular events in 1,739 adults (862 men and 877 women) in the 1995 Nova Scotia Health Survey. Trained nurses conducted Type A Structured Interviews, and coders rated the degree of outwardly displayed positive affect on a five-point scale. To test that positive affect predicts incident CHD when controlling for depressive symptoms and other negative affects, we used as covariates: Center for Epidemiological Studies Depressive symptoms Scale, the Cook Medley Hostility scale, and the Spielberger Trait Anxiety Inventory. There were 145 (8.3%) acute non-fatal or fatal ischaemic heart disease events during the 14,916 person-years of observation. In a proportional hazards model controlling for age, sex, and cardiovascular risk factors, positive affect predicted CHD (ad-

justed HR, 0.78; 95% CI 0.63–0.96 per point; $p = 0.02$), the covariate depressive symptoms continued to predict CHD as had been published previously in the same patients (HR, 1.04; 95% CI 1.01–1.07 per point; $p = 0.004$) and hostility and anxiety did not (both $p > 0.05$).

Conclusion: In this large, population-based study, increased positive affect was protective against 10-year incident CHD, suggesting that preventive strategies may be enhanced not only by reducing depressive symptoms but also by increasing positive affect.

**Goldbach-Mansky R, Wilson M, Fleischmann R, Olsen N, Silverfield J, Kempf P, Kivitz A, Sherrer Y, Pucino F, Csako G, Costello R, Pham TH, Snyder C, van der Heijde D, Tao X, Wesley R, Lipsky PE:
Comparison of *Tripterygium wilfordii* Hook F versus sulfasalazine in the treatment of rheumatoid arthritis: a randomized trial. Ann Intern Med 2009;151:229–240.**

Background: Extracts of the medicinal plant *Tripterygium wilfordii* Hook F (TwHF) have been used in China for centuries to treat a spectrum of inflammatory diseases.

Objective: To compare the benefits and side effects of TwHF extract with those of sulfasalazine for the treatment of active rheumatoid arthritis.

Design: Randomized, controlled trial. A computer-generated code with random, permuted blocks was used to assign treatment.

Setting: 2 U.S. academic centers (National Institutes of Health, Bethesda, Maryland, and University of Texas, Dallas, Texas) and 9 rheumatology subspecialty clinics (in Dallas and Austin, Texas; Tampa and Fort Lauderdale, Florida; Arlington, Virginia; Duncanville, Pennsylvania; Wheaton and Greenbelt, Maryland; and Lansing, Michigan).

Patients: 121 patients with active rheumatoid arthritis and 6 or more painful and swollen joints.

Intervention: TwHF extract, 60 mg 3 times daily, or sulfasalazine, 1 g twice daily. Patients could continue stable doses of oral prednisone or nonsteroidal anti-inflammatory drugs but had to stop taking disease-modifying antirheumatic drugs at least 28 days before randomization.

Measurements: The primary outcome was the rate of achievement of 20% improvement in the American College of Rheumatology criteria (ACR 20) at 24 weeks. Secondary end points were safety; radiographic scores of joint damage; and serum levels of interleukin-6, cholesterol, cortisol, and adrenocorticotrophic hormone.

Results: Outcome data were available for only 62 patients at 24 weeks. In a mixed-model analysis that imputed data for patients who dropped out, 65.0% (95% CI, 51.6–76.9%) of the TwHF group and 32.8% (CI, 21.3–46.0%) of the sulfasalazine group met the ACR 20 response criteria ($p = 0.001$). Patients receiving TwHF also had significantly higher response rates for ACR 50 and ACR 70 in mixed-model analyses. Analyses of only completers showed similar significant differences between the treatment groups. Significant improvement was demonstrated in all individual components of the ACR response, including the Health Assessment Questionnaire disability score. Interleukin-6 levels rapidly and significantly decreased in the TwHF group. Although not statistically significant, radiographic progression was lower in the TwHF group. The frequency of adverse events was similar in both groups.

Limitations: Only 62% and 41% of patients continued receiving TwHF extract and sulfasalazine, respectively, during the 24 weeks of the study. Long-term outcome data were not collected on participants who discontinued treatment.

Conclusion: In patients who continued treatment for 24 weeks and could also use stable oral prednisone and nonsteroidal anti-inflammatory drugs, attainment of the ACR 20 response criteria was significantly greater with TwHF extract than with sulfasalazine.

Cohen S, Doyle WJ, Alper CM, Janicki-Deverts D, Turner RB: Sleep habits and susceptibility to the common cold. Arch Intern Med 2009;169:62–67.

Background: Sleep quality is thought to be an important predictor of immunity and, in turn, susceptibility to the common cold. This article examines whether sleep duration and efficiency in the weeks preceding viral exposure are associated with cold susceptibility.

Methods: A total of 153 healthy men and women (age range, 21–55 years) volunteered to participate in the study. For 14 consecutive days, they reported their sleep duration and sleep efficiency (percentage of time in bed actually asleep) for the previous night and whether they felt rested. Average scores for each sleep variable were calculated over the 14-day baseline. Subsequently, participants were quarantined, administered nasal drops containing a rhinovirus, and monitored for the development of a clinical cold (infection in the presence of objective signs of illness) on the day before and for 5 days after exposure.

Results: There was a graded association with average sleep duration: participants with less than 7 h of sleep were 2.94 times (95% confidence interval (CI), 1.18–7.30) more likely to develop a cold than those with 8 h or more of sleep. The association with sleep efficiency was also graded: participants with less than 92% efficiency were 5.50 times (95% CI, 2.08–14.48) more likely to develop a cold than those with 98% or more efficiency. These relationships could not be explained by differences in pre-challenge virus-specific antibody titers, demographics, season of the year, body mass, socioeconomic status, psychological variables, or health practices. The percentage of days feeling rested was not associated with colds.

Conclusion: Poorer sleep efficiency and shorter sleep duration in the weeks preceding exposure to a rhinovirus were associated with lower resistance to illness.