Recommendations for clinical practice **Treatment of low back pain by chiropractic manipulation or the McKenzie method of physical therapy provides few advantages over simple written information, and there is no evidence that physical therapy is better than chiropractic or vice versa. Most of the benefit appears to be related to patient satisfaction and not clinical end points. The costs per patient using these alternative methods are higher. It is reasonable for primary care physicians to treat patients with uncomplicated LBP conservatively and refer them to allied health professionals only if the standard treatment fails.**

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Therapeutic Touch and Osteoarthritis of the Knee

Gordon A, Merenstein JH, D'Amico F, et al. The effects of therapeutic touch on patients with osteoarthritis of the knee. J Fam Pract 1998; 47:271-7.

Clinical question **What effects does therapeutic touch have on pain, functioning, and general well-being in patients with osteoarthritis of the knee?**

Background Osteoarthritis is a common disease and a leading cause of disability, but our treatment options remain limited. Therapeutic touch (TT) is a form of complementary medicine in which a practitioner attempts to heal or improve many medical problems by manual manipulation of an energy field above the patient's skin. This study examines the efficacy of TT for patients with osteoarthritis of the knee.

Population studied Thirty-one patients with osteoarthritis in at least one knee were enrolled at a family practice residency office. Patients with connective tissue disease or knee replacement were excluded. Most of the enrollees were women, and the average age was 64 years to 68 years. An attempt was made to estimate severity of disease with a questionnaire and review of radiographs. The population seems similar to those in the usual family practice, but additional information about physical findings, functional status, current treatment, and comorbidities would have provided a clinical anchor for the study.

Study design and validity This single-blinded randomized controlled trial compared 3 groups: a group receiving TT, a placebo group receiving a mock TT intervention (MTT), and a group receiving no additional treatment. The TT and MTT groups received treatments weekly for 6 weeks, with outcomes measured at weeks 1, 7, and 13. Randomization was stratified by disease severity. The placebo intervention was well designed: a different practitioner, resembling the true TT provider, provided the mock treatment while focusing on a cognitive task. TT and MTT treatments were videotaped and reviewed to ensure that objective observers could not tell the difference. The analysis seems appropriate, with the exceptions that patient drop-out was not addressed and no correction was made for multiple comparisons.

In general, the study design is moderately strong. Its strengths include randomization with stratification by severity, the use of 2 different control groups, the inclusion of a wash-out period, and assessment of outcomes by both quantitative and qualitative techniques. The lack of specific detail about the TT intervention and the TT provider makes it difficult to apply the results to other settings, and the small numbers of the study reduce the statistical power for detecting clinically important confounders.

Outcomes measured Outcome measures were pain and its impact, level of functioning, and general well-being and health status as measured by the Stanford Health Assessment Questionnaire (HAQ), the West Haven-Yale Multidimensional Pain Inventory (MPI), and visual analog scales of pain and well-being. Complementary data was obtained from TT and MTT patients using in-depth qualitative interviews. Useful outcomes that were not measured include physical examination findings; changes in other medications; changes in cost; and patient satisfaction.

Results Randomization with stratification resulted in groups with similar ages, gender distribution, and disease severity; follow-up was 80%. Using the MPI, the treatment group had significantly decreased pain and improved function on 9 of the 13 scales. This improvement was paralleled by improvement in average visual analog scores for pain level and general well-being, and in the qualitative interview data. Changes in medication did not account for these changes. These improvements persisted after cessation of treatment. No improvement, however, was found in visual analog scales completed before and after each treatment or in the HAQ scale, which measures specific functional disability. Side effects were not mentioned.

Recommendations for clinical practice **This study provides fair evidence that TT can improve the pain and level of functioning in patients with osteoarthritis of the knee. The clinical significance of the changes detected by**

questionnaires is unclear, and the lack of information about the clinical context, including baseline function, current medical treatments, and comorbidity, make it difficult to know how to extrapolate these results to practice. More broadly, these results raise the issue of how family physicians should approach the adoption of complementary therapies. This report is a well-designed effort to evaluate the efficacy of an unconventional treatment. Such efficacy trials should always precede evaluations of possible mechanisms.[1]

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Nebulized Ipratropium for Children with Acute Asthma

Qureshi F, Pestian J, Davis P, and Zaritsky A. Effect of nebulized ipratropium on the hospitalization rates of children with asthma. N Engl J Med 1998; 339:1030-5.

Clinical question **Does ipratropium, when added to beta-agonists and oral corticosteroids, decrease the rate of hospital admission among children with acute asthma attacks?**

Background Ipratropium bromide is a safe and effective medication for the treatment of acute exacerbations of asthma, but large trials have not been conducted to determine its impact on hospital admissions. This study set out to determine whether the addition of ipratropium bromide to standard emergency department therapy for asthma in children would reduce the hospitalization rate.

Population studied Asthmatic children between 2 and 18 years of age presenting to the pediatric emergency department with an acute exacerbation of asthma were eligible for the study. Children were excluded for such reasons as the use of ipratropium within 6 hours before the visit to the emergency department; having a disease known to have a chronic effect on lung function (eg, cystic fibrosis); any possible presence of an intrathoracic foreign body; a contraindication to the use of a beta-agonist; or the need for immediate resuscitation or airway intervention.

Study design and validity This was a prospective randomized double-blinded placebo-controlled trial. Of the 480 children initially identified, 46 children with mild disease were excluded because they responded to initial therapy with inhaled bronchodilators and did not receive the full study medication or placebo. All of the remaining children had a moderate or severe exacerbation, according to either their peak flow rate (50% to 70% of predicted for moderate exacerbation, < 50% of predicted for severe) or a standard, validated symptom score. Patients were assigned to receive either two 500-µg doses of nebulized ipratropium bromide or 2 vials of preservative-free normal saline (the placebo). Children were treated with nebulized albuterol every 20 minutes for 3 doses. At the time of the second dose, an oral corticosteroid was also administered (2 mg/kg of prednisone or prednisolone, to a maximum of 60 mg). Ipratropium or placebo was given with the second and third doses of albuterol. After the first 60 minutes of treatment, albuterol was given at the physician's discretion until a decision was made to admit or discharge the patient.

Outcomes measured The primary outcome was the hospitalization rate. Secondary outcomes included the number of nebulizer treatments until disposition, time to disposition, need for any visits to a medical facility within 72 hours after discharge, and changes in a variety of physiologic surrogate end points.

Results Intervention and control groups were similar other than a greater percentage of girls in the ipratropium group. There was no difference in the rate of admission for patients with moderate asthma (10.1% for ipratropium and 10.7% for the control group), but there was a significantly lower rate of admissions for patients with severe asthma (37.5% vs 52.6%, P=.02). The number of children with severe asthma who would need to be treated (NNT) with ipratropium to prevent 1 admission was 6.6 (95% confidence interval, 3.7-29.4). No children were dropped from the study because of adverse effects and readmission rates within 72 hours were similar.

Recommendations for clinical practice **Ipratropium bromide, when administered in conjunction with albuterol and corticosteroids, decreases the rate of hospital admissions in children with severe acute asthma. Furthermore, an NNT of 6.6 to prevent 1 admission demonstrates that this intervention has a clinically important impact. These results were confirmed by a recent meta-analysis.**[1] **Finally, although no economic assessment has been done, it is reasonable to assume that a significant amount of money might be saved by adding ipratropium to the regimen already in use in**