



Evidence-Based Evaluation of Complementary Health Approaches for Pain Management in the United States

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CME Activity

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Statement of Need: General internists and primary care physicians must maintain an extensive knowledge base on a wide variety of topics covering all body systems as well as common and uncommon disorders. *Mayo Clinic Proceedings* aims to leverage the expertise of its authors to help physicians understand best practices in diagnosis and management of conditions encountered in the clinical setting.

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Learning Objectives: On completion of this article, you should be able to (1) name complementary health approaches used for pain management; (2) discuss the evidence supporting the use of complementary health approaches for pain management; and (3) provide examples to your patients of complementary health approaches that might be considered as part of a comprehensive pain management plan.

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Abstract

Although most pain is acute and resolves within a few days or weeks, millions of Americans have persistent or recurring pain that may become chronic and debilitating. Medications may provide only partial relief from this chronic pain and can be associated with unwanted effects. As a result, many individuals turn to complementary health approaches as part of their pain management strategy. This article examines the clinical trial evidence for the efficacy and safety of several specific approaches—acupuncture, manipulation, massage therapy, relaxation techniques including meditation, selected natural product supplements (chondroitin, glucosamine, methylsulfonylmethane, S-adenosylmethionine), tai chi, and yoga—as used to manage chronic pain and related disability associated with back pain, fibromyalgia, osteoarthritis, neck pain, and severe headaches or migraines.

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The most recent national estimate suggests that 126 million adults experience some pain in a given year,¹ with about one-third (40 million adults) having severe pain. Pain is often associated with poor general health, health-related disability, and increased health care utilization.² Yet according to the Institute of Medicine,² pain is routinely undertreated in health care; pain care that is provided is often fragmented, without a comprehensive assessment or treatment plan, and patients may encounter difficulty obtaining the full range of potential treatments.

Back pain, joint pain, neck pain, and headaches are among the most common types of pain experienced by US adults (Table 1).³⁻⁶ The prevalence rates for these conditions have remained relatively stable over time. Among the many pharmacological and nonpharmacological approaches that have been incorporated into pain management strategies are complementary health approaches. This broad category of care includes procedures by licensed practitioners such as acupuncturists, chiropractors, and massage therapists, as well as self-care approaches such as relaxation techniques (eg, meditation) and meditative movement-based approaches (eg, yoga and tai chi) and natural products such as glucosamine and herbal medicines. National surveys going back more than 25 years have consistently found that these complementary approaches are used by about 30% to 40% of the US public in a given year,⁷⁻¹¹ although use of a given approach may wax and wane over time (Table 2).

Although a substantial part of this use is for overall wellness and prevention,^{12,13} painful conditions are the most common health

TABLE 2. Age-Adjusted Percentages of Use for Selected Complementary Health Approaches by US Adults, 2002-2012

Complementary health approach	2002 ⁷	2007 ⁸	2012 ⁹
Acupuncture	1.1%	1.4%	1.5%
Manipulation	7.5%	8.6%	8.4%
Massage therapy	5.0%	8.3%	6.9%
Meditation	7.6%	9.4%	8.0%
Natural product supplements	18.9%	17.7%	17.7%
Yoga, tai chi, and qigong	5.8%	6.7%	10.1%

conditions for which individuals turn to these complementary approaches.^{7,8,10,11,14} In 2007, for example, about 14.3 million adults used a complementary health approach for their back pain, about 5.0 million used these approaches for their neck pain, and 3.1 million for their arthritis.⁷ Far fewer individuals used complementary health approaches for other chronic diseases such as depression (1.0 million), hypertension (0.8 million), diabetes (0.7 million), or cancer (0.4 million).

Based on national survey data,¹⁴ this high use of complementary health approaches for painful conditions translated into \$8.5 billion in out-of-pocket payments for these approaches to manage back pain, \$3.6 billion to manage neck pain, and \$2.3 billion to manage arthritis. Substantially less is spent out-of-pocket on complementary health approaches to treat other chronic health conditions such as depression (\$1.1 billion), hypertension (\$0.7 billion), diabetes (\$0.3 billion), and cancer (\$0.2 billion).

Given the high use of complementary health approaches for pain, a number of specific complementary approaches have undergone mechanistic and clinical evaluations culminating in phase 3 trials. This article examines the clinical trial evidence for the efficacy and safety of several widely used approaches—acupuncture, manipulation, massage therapy, relaxation techniques including meditation, selected natural product supplements (eg, chondroitin and glucosamine), tai chi, and yoga (defined in Supplemental Appendix 1, available online at <http://www.mayoclinicproceedings.org>)—as used to manage chronic pain and related disability associated with back pain, osteoarthritis (OA), neck pain, and severe headaches or migraines, conditions frequently seen and managed in the primary care setting.

TABLE 1. Age-Adjusted Percentages of Selected Health Conditions Among US Adults, NHIS 2002, 2007, 2012^a

Health condition	2002 ³	2007 ⁴	2012 ^{5,6}
Low back pain in the past 3 mo	26.4%	25.4%	27.6%
Arthritis	20.9%	20.3%	20.6%
Neck pain in the past 3 mo	13.8%	12.8%	13.9%
Severe headache or migraine in the past 3 mo	15.0%	12.3%	14.1%
Fibromyalgia during lifetime	NA	NA	1.75%

^aNA = not available; NHIS = National Health Interview Survey.

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