CHAPTER e2 Complementary, Alternative, and Integrative Medicine

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BACKGROUND

Medicine, once the domain of solitary generalists and their nurse assistants, now engages scores of specialists and allied professionals—radiation physicists, cytologists, nurse practitioners, psychiatric social workers, dental hygienists, and many more—who wield tools of unprecedented ability to extend life and sustain its quality. This evolution of the health care system has been achieved in part by a formidable enterprise of critical observation and formal investigation that disproves some accepted practices and stimulates the emergence of new approaches. One need only peruse the serial editions of this textbook to comprehend the scope of these changes.

Other factors also have affected evolutionary changes in medicine. The U.S. health care system has always been pluralistic, including many practices that are outside mainstream medicine. The public's expectations of health and the nature of the health care system have been altered by unprecedented access to sources of information, goods, and services; the disposable income to afford them; and a patchwork quilt of regulations and laws that constrain medical practice on the one hand and facilitate increased choice in health care on the other. Immigration and related demographic changes have created diverse communities that value their own health traditions. The emergence of complementary and alternative health practices and the approach called integrative medicine are manifestations of these changes in health care.

DEFINITIONS

Complementary and alternative medicine (CAM) refers to a group of diverse medical and health care systems, practices, and products that are not considered part of conventional or allopathic medicine or that have historic origins outside mainstream medicine. Most of these practices are used together with conventional therapies and therefore have been called *complementary* to distinguish them from *alternative* practices, which are those used instead of standard care. Use of dietary supplements, mind-body practices such as hypnosis, and care from a traditional healer all fall under the umbrella of CAM. Although some CAM practices are directed by an alternative health care provider such as a chiropractor, acupuncturist, or naturopathic practitioner, much of CAM is undertaken as "self-care" and paid for out of pocket. CAM does not encompass practices that have not been translated fully from the laboratory to the clinic or practices that have been well studied and disproved but still have some public appeal. Rather, CAM entails approaches with surprising pervasiveness, many of which can claim at least some evidentiary support. Until a few years ago, CAM also could be defined as practices that are neither widely taught in medical schools nor reimbursed, but this definition is no longer useful, since medical students increasingly seek and receive some instruction about CAM and some CAM practices are reimbursed by third-party payers. Definitions of common CAM practices are provided in Table e2-1.

In the last decade, the term *integrative medicine* has entered this dialogue. *Integrative medicine* refers to a style of practice that places strong emphasis on a holistic approach to patient care, focusing on preventive strategies for maintenance of health and reduced use of technology. Physicians advocating this approach generally include selected CAM practices, particularly mind-body practices and dietary supplements, in the care they offer patients, and some have established practice settings that include CAM practitioners. Although this approach appears to be attractive to many patients, the weaknesses in the evidence base for some of the interventions offered in integrative practices continue to attract substantial concern and controversy.

PATTERNS OF USE

The first large survey of CAM use by Eisenberg and associates in 1993 surprised the medical community by showing that more than 30% of Americans use CAM approaches. Many studies since that time have extended those conclusions. Subsequently, the National Health Interview Survey (NHIS), a large national survey conducted by the National Center for Health Statistics, a component of the Centers for Disease Control and Prevention, has addressed the use of CAM and largely confirmed those results. The NHIS is a household survey of many kinds of health practices in the civilian population; it uses methods that create a nationally representative sample and has a sample size large enough to permit valid estimates about some subgroups. In 2002 and again in 2007, the survey included a set of questions that addressed CAM use. Information was obtained from 31,000 adults in 2002 and 23,300 adults and 9400 children in 2007. In both surveys, approximately 40% of adults were using some form of CAM. In the 2007 study, 38% of adults and 12% of children had used one or more modalities, with nonvitamin, nonmineral dietary supplements; relaxation techniques and meditation; chiropractic; and massage being the most prevalent. Over 1% reported having received acupuncture treatment. Americans are willing to pay for these services; the estimated out-of pocket expenditure for CAM in 2007 was $34 billion, representing 1.5% of total health expenditures and 11% of out-of pocket costs.

The appeal of unproven CAM approaches continues to surprise many physicians. Many factors contribute to these choices. Some patients seek out CAM practitioners because they offer optimism or greater personal attention. For others, alternative approaches reflect a "self-help" approach to health and wellness or satisfy a search for "natural" or less invasive alternatives, since dietary supplements and other natural products are believed, correctly or not, to be inherently healthier and safer than synthetic ones. In NHIS surveys, the most common health conditions cited by patients for CAM use involve management of symptoms often poorly controlled by conventional care, particularly back pain and other painful musculoskeletal complaints.

FIELDS OF PRACTICE AND LICENSURE

At present, six fields of CAM practice—osteopathic manipulation, chiropractic, acupuncture and traditional Asian medicine, massage therapy, naturopathy, and homeopathy—are subject to licensure requirements and some form of educational accreditation. Mind-body practices such as meditation and yoga are not licensed in any state, and training in those practices is not subject to national accreditation.

TABLE e2-1 Terminology of Complementary and Alternative Medical Practices

Mind-Body and Manipulative Practices	
Acupuncture and acupressure	A family of procedures involving stimulation of defined anatomic points, a component of the major Asian medical traditions. Most common application involves the insertion and manipulation of thin metallic needles
Alexander technique	A movement therapy that uses guidance and education to improve posture, movement, and efficient use of muscles for improvement of overall body functioning
Guided imagery	The use of relaxation techniques followed by the visualization of images, usually calm and peaceful in nature, to invoke specific images to alter neurologic function or physiologic states
Hypnosis	The induction of an altered state of consciousness characterized by increased responsiveness to suggestion
Massage	Manual therapies that manipulate muscle and connective tissues to promote muscle relaxation, healing, and sense of well-being
Meditation	A group of practices, largely based in Eastern spiritual traditions, intended to focus or control attention and obtain greater awareness of the present moment, or mindfulness
Reflexology	Manual stimulation of points on hands or feet that are believed to affect organ function
Rolfing/structural integration	A manual therapy that attempts to realign the body by deep tissue manipulation of fascia
Spinal manipulation	A range of manual techniques, employed by chiropractors and osteopaths, for adjustments of the spine to affect neuromuscular function and other health outcomes
Tai chi	A mind-body practice originating in China that involves slow, gentle movements and sometimes is described as "moving meditation"
Therapeutic touch	Secular version of the laying on of hands, described as "healing meditation"
Yoga	An exercise practice, originally east Indian, that combines breathing exercises, physical postures, and meditation
Traditional Medical Systems	
Ayurvedic medicine	The major East Indian traditional medicine system. Treatment includes meditation, diet, exercise, herbs, and elimination regimens (using emetics and diarrheals)
Curanderismo	A spiritual healing tradition common in Latin American communities that uses ritual cleansing, herbs, and incantations
Native American medicine	Diverse traditional systems that incorporate chanting, shaman healing ceremonies, herbs, laying on of hands, and smudging (ritual cleansing with smoke from sacred plants)
Siddha medicine	An East Indian medical system (prevalent among Tamil-speaking people)
Tibetan medicine	A medical system that uses diagnosis by pulse and urine examination; therapies include herbs, diet, and massage
Traditional Chinese medicine	A medical system that uses acupuncture, herbal mixtures, massage, exercise, and diet
Unani medicine	An East Indian medical system, derived from Persian medicine, practiced primarily in the Muslim community; also called "hikmat"
"Modern" Medical Systems	
Anthroposophic medicine	A spiritually based system of medicine that incorporates herbs, homeopathy, diet, and a movement therapy called eurythmy
Chiropractic	Chiropractic care involves the adjustment of the spine and joints to alleviate pain and improve general health; primarily used to treat back problems, musculoskeletal complaints, and headaches
Homeopathy	A medical system with origins in Germany that is based on a core belief in the theory of "like cures like"—compounds that produce certain syndromes, if administered in very diluted solutions, will be curative
Naturopathy	A clinical discipline that emphasizes a holistic approach to the patient, herbal medications, diet, and exercise. Practitioners have degrees as doctors of naturopathy
Osteopathy	A clinical discipline, now incorporated into mainstream medicine, that historically emphasized spinal manipulative techniques to relieve pain, restore function, and promote overall health

Osteopathic medicine

Founded in 1892 in the American heartland by the physician Andrew Taylor Still, osteopathic medicine was based originally on the belief that manipulation of soft tissue and bone can correct a wide range of diseases of the musculoskeletal and other organ systems. Over the ensuing century, osteopathy evolved progressively toward conventional (allopathic) medicine. Today, the training, practice, credentialing, licensure, and reimbursement of osteopathic physicians are virtually indistinguishable from those of allopathic physicians, with 4 years of osteopathic medical school followed by specialty and subspecialty training and certification by organizations such as the American Board of Internal Medicine. Some osteopathic physicians

continue to practice spinal manipulation, primarily as a tool to address specific musculoskeletal complaints.

Chiropractic

In 1895, Daniel David Palmer founded in Missouri the first school of chiropractic medicine to teach manipulation of the spine. Palmer believed that subluxations, or partial dislocations of vertebrae, cause disease by impinging on key nerve roots. Today, chiropractors undertake 5 years of training in basic and relevant clinical sciences. Increasingly, they complete additional postgraduate training in radiology and outpatient therapeutics, primarily of musculoskeletal conditions, although within the discipline there are factions that continue to perform manipulation for many other pathologic entities. Chiropractors also advise on nutrition, exercise, and other health maintenance approaches. Over 50,000 doctors of chiropractic medicine are licensed to practice in the United States.

Acupuncture and traditional Asian medicine

A venerable component of traditional Chinese medicine, acupuncture emerged in recent decades as a free-standing clinical discipline. Over 3000 American physicians have acquired targeted postgraduate training that permits them to practice acupuncture in over 40 states and the District of Columbia. Over 4000 non-MDs have taken far more extended training that leads to licensure to practice independently or under the supervision of a physician.

Massage therapy

Drawing on millennia of empirical knowledge, some 80 schools in the United States instruct students in an array of the soft tissue manipulative approaches that constitute massage. Thirty-one states and the District of Columbia license trainees to perform therapeutic massage.

Naturopathy

Fifteen states license practitioners of naturopathy, a discipline that emerged in central Europe in the late eighteenth century. The fact that conventional treatments of the day were usually ineffective, if not overtly harmful, stimulated the search for safer and more "natural" approaches—naturopathy is one of them. The concept underlying this discipline is that the body has powerful mechanisms for self-healing that a properly instructed practitioner can harness. About 1400 naturopathic physicians have completed 4 years of education in basic and clinical sciences and are licensed to manage a predominantly outpatient population. Conventional and unconventional diagnostic tests and medications are prescribed, with an emphasis on relatively low doses of drugs, herbal medicines, special diets, and exercises.

Homeopathy

The late eighteenth century also witnessed the emergence of homeopathy, another discipline that arose at least in part as a reaction to the toxicity inherent in many of the allopathic approaches of the day. Homeopathy was developed by Samuel Hahnemann, a German physician, who postulated that substances that cause particular side effects in a well person may be used to treat or prevent such symptoms in an ill person if administered in minuscule amounts—what is known as "the doctrine of similars." For example, contact with poison ivy *(Rhus toxicodendron)* causes susceptible persons to experience an itchy, blistering rash. Homeopathy espouses the administration of highly diluted extracts of poison ivy to treat other blistering, pruritic eruptions, such as varicella. During the early nineteenth century, the then-nascent field of homeopathy used blinded tests on volunteers, presaging wider use of placebo-controlled trials, to "prove" which materials were the most able to induce or relieve symptoms. By the mid-nineteenth century homeopathy had gained considerable presence in the American medical establishment and may, in fact, have facilitated the development of immunization and allergen desensitization, both of which utilize very small quantities of materials to elicit measurable biologic outcomes. Today, however, homeopathy is accepted less fully in the United States than in some other countries. It is the largest of all CAM practices in the United Kingdom, Germany, and France and is widely used in India. In the United States, only three states currently license the practice of homeopathy. The relative decline of homeopathy relates, at least in part, to the field's inability to articulate a rational mechanism that explains why products that are diluted more than 10^{60}-fold, greater than Avogadro's number, could incite biologic effects. Nonetheless, homeopathic remedies are readily available and commonly recommended by naturopathic physicians and other licensed and unlicensed practitioners.

REGULATION OF DIETARY SUPPLEMENTS

Herbal medicines, and dietary supplements more generally, have a unique regulatory status that gives the public remarkable freedom of choice but also many undesired challenges. An element of traditional healing approaches, herbal medicines were presumed safe long before the implementation of drug regulations by the U.S. Food and Drug Administration (FDA). In 1994, the U.S. Congress passed the Dietary Supplements Health and Education Act (DSHEA), which permits sale of dietary supplements "over the counter," as it were, but without the requirement imposed on manufacturers of prescription or conventional over-the-counter drugs to prove that their products are safe and effective before marketing. Supplements can be removed by the FDA from the market only if they are proved to be hazardous. Purveyors of dietary supplements cannot claim that they prevent or treat any disease. They can, however, claim that they maintain "normal structure and function" of body systems. For example, a product cannot claim to treat arthritis, but it can claim to maintain "normal joint health." Homeopathic products predate FDA drug regulations and are sold with no requirement that they be proved effective. Although homeopathic products are widely believed to be safe because they are highly dilute, one product, a nasal spray called Zicam, was withdrawn from the market when it was found to produce anosmia, probably because of a significant zinc content. Homeopathic products, and indeed other CAM products and practices, also convey the very significant risk that individuals will use them instead of effective conventional modalities.

Under the current regulatory framework, members of the public have considerable freedom to determine what is in their own best interest, even if those decisions deny them effective treatment; however, the courts have ruled that the rights of parents to withhold treatment of their children is limited in instances of life-threatening illnesses. Investigators have a broad ethical obligation not to withhold proven treatments for serious illnesses for the sake of testing unproven ones.

SAFETY

Risks imposed by the use of CAM approaches include injuries inflicted by a practice, inherent toxicities of the modality, and interference by the modality with more conventional treatments.

Injury

Physical and manipulative interventions can harm patients. In past decades, reused acupuncture needles transmitted hepatitis B virus infection; today, the standard of care requires disposable needles. Aggressive massage can cause soft tissue injuries. Spinal manipulation of patients with unrecognized vertebral lesions has been associated with cord injuries, and cervical manipulation has been associated with stroke. These appear to be rare events.

Inherent toxicity

Although the public may believe that "natural" equates with "safe," it is abundantly clear that natural products can be toxic. Misidentification of medicinal mushrooms has led to liver failure. Contamination of tryptophan supplements caused the eosinophilia-myalgia syndrome. Herbal products containing particular species of *Aristolochia* were associated with genitourinary malignancies. In 2001, extracts of kava, long used by Pacific Islanders for its mild anxiolytic and sedative properties, were associated with fulminant liver failure. A number of products, including the popular *Ginkgo biloba*, are known to prolong bleeding times and have been associated with postoperative hemorrhage. Among the most controversial dietary supplements is *Ephedra sinica*, or ma huang, a product used in traditional Chinese medicine for short-term treatment of asthma and bronchial congestion. The scientific basis for these indications was revealed when ephedra was shown to contain the ephedrine alkaloids, especially ephedrine and pseudoephedrine. With the promulgation of the DSHEA regulations, supplements containing ephedra and herbs rich in caffeine sold widely in the U.S. marketplace because of their claims to promote weight loss and enhance athletic performance. Reports of severe and fatal adverse events associated with use of ephedra-containing products led to an evidence-based review of the data surrounding them, and in 2004 the FDA banned their sale in the United States.

Adulteration

A major current concern with dietary supplements is adulteration with pharmacologic active compounds. Multi-ingredient products marketed for weight loss, body building, "sexual health," and athletic performance are of particular concern. Recent FDA recalls have involved adulteration with steroids, diuretics, stimulants, and phosphodiesterase type 5 inhibitors.

Herb-drug interactions

The constituents of a few natural products are toxic; others are known to interfere with the metabolism of life-saving drugs. This effect was illustrated most compellingly with the demonstration in 2000 that consumption of St. John's wort interferes with the bioavailability of the HIV protease inhibitor indinavir. Later studies showed its similar interference with metabolism of topoisomerase inhibitors such as irinotecan, with cyclosporine, and with many other drugs. The breadth of interference stems from the ability of hyperforin in St. John's wort to upregulate expression of the pregnane X receptor, a promiscuous nuclear regulatory factor that promotes the expression of many hepatic oxidative, conjugative, and efflux enzymes involved in drug and food metabolism.

Because of the large number of compounds that alter drug metabolism and the large number of agents some patients are taking, identification of all potential interactions can be a daunting task. Several useful Web resources can ameliorate this problem (Table e2-2). Clearly, attention to this problem is particularly important with drugs with a narrow therapeutic index, such as anticoagulants, antiseizure medications, immunosuppressants, and cancer chemotherapeutic agents.

TABLE e2-2 Resources for Dietary Supplement Drug Interactions

Medscape

http://www.medscape.com/druginfo/druginterchecker?cid=med

This Web site is maintained by WebMD and includes a free drug interaction checker tool that provides information on interactions between two or more drugs, herbals, and/or dietary supplements.

Natural Medicine Comprehensive Database

http://naturaldatabase.therapeuticresearch.com

This Web site provides an interactive natural product/drug interaction checker tool that identifies interactions between drugs and natural products, including herbals and dietary supplements. This service is available by subscription. A PDA version is available.

Natural Standard

http://www.naturalstandard.com/tools

This Web site provides an interactive tool for checking drug and herb/supplement interactions. This service is available by subscription. A PDA version is available.

THE EVIDENCE BASE FOR CAM

Alternative health practices have evolved through an epistemologic framework completely different from that of contemporary biomedicine. Empirical observations of individual patients constitute the primary evidentiary base on which CAM practices are guided and taught. Nonetheless, over the last few decades, thousands of studies have been performed of various CAM approaches, including hundreds of trials involving herbs, acupuncture, and homeopathy. To date, very few CAM approaches have been proved definitively to be effective. Several factors contribute to this lack of convincing evidence. The vast majority of CAM studies have been seriously flawed by lack of appropriate controls, bias on the part of the investigators, small sample sizes, reliance on highly subjective and nonvalidated measures of benefit, and inappropriate statistical tests.

METHODOLOGIC CHALLENGES

In addition, a series of methodologic issues challenge even the better-designed CAM studies. By and large, uniform practice guidelines do not exist, and the herbal products marketed in the United States are highly variable in quality and composition. Many CAM practices are not amenable to blinding. For example, both the patient and the practitioner would know if spinal manipulation had been performed, and conventional research paradigms cannot be used to test these approaches. These problems are not unique to CAM, as they also complicate attempts to study conventional practices such as psychotherapy and surgery.

Even with ongoing improvements in study design and conduct, issues of belief also stand in the way of comprehending and accepting the results of some CAM studies. Many physicians are reluctant to believe positive outcomes of clinical approaches that have not emerged through the classic experimental paradigm by which drugs and biologic agents are developed: the orderly progression from preclinical testing through serial phases of clinical trials. More important, it is difficult to accept results that are counterintuitive or the underlying mechanism of which defies rational explanation. As suggested above, an example of this dilemma involves studies of homeopathy. Some clinical trials of homeopathy for asthma, infantile diarrhea, and other common conditions reported positive results. Two systematic reviews of homeopathy trials reported an overall favorable impression of the clinical trials data, concluding that the treatments were more beneficial than placebo. Even the best trials and those reviews have been criticized on methodologic grounds. It remains unclear what evidence could compel a change in belief about the benefits of homeopathy when there are no cogent explanations for how substances diluted beyond the point at which only solute remains could exert physiologic effects.

SCIENTIFIC EVIDENCE AND PUBLIC ACCEPTANCE

By contrast, although methodologic problems continue to plague acupuncture trials, belief has been growing even in academic centers that acupuncture may be effective. The emerging acceptance of acupuncture results in part from its widespread availability and use in the United States today, even within the walls of major medical centers where it is used as an ancillary approach to pain management. Yet its acceptance appears to stem from more than just its communal appeal. Since the mid-1970s, biochemical and imaging studies have begun to yield evidence that needling can alter central pain-processing pathways, possibly by triggering release of neural mediators that bind to specific receptors in the brain regions that modulate pain perception.

Although it is difficult to conclude decisively that a particular CAM approach lacks any merit, it is quite feasible to discern that its effect size, or degree of benefit, is too small or inconsistent to be worth pursuing further. Over the last century, many once unconventional medical approaches failed—one need only think back to the exotic electrical devices, procedures, and tonics that fell out of fashion. Two questions often are asked: (1) Do any of the more contemporary CAM modalities deserve to be rejected? (2) Would data showing them to be ineffective change anyone's mind about using them?

The case of laetrile is instructive. This extract of apricot seeds was touted in the 1970s as a cure for solid tumors. Thousands crossed the Mexican border to secure laetrile for their personal use. The lack of any positive preclinical data discouraged oncologists from agreeing to study laetrile until public pressure required that an answer be obtained. Two studies in the 1980s showed no benefit of laetrile treatment. Today, some continue to seek the product, but the numbers are vastly smaller than they were before meaningful data were obtained. A similar fate befell a cocktail of drugs used for cancer patients through the 1970s and 1980s by Dr. Luigi Di Bella in Italy once large studies revealed that it had no detectable impact on the course of a variety of advanced cancers.

In contrast, some modalities that have been well tested and found ineffective are still in fairly common use. For example, the renowned biochemist Linus Pauling proclaimed that vitamin C can treat and even prevent the common cold. Several high-quality studies failed to demonstrate clinically important effects of vitamin C in preventing or treating viral colds. Nonetheless, ingestion of extra vitamin C remains a common habit of individuals who perceive the onset of cold symptoms. For most people, this practice is wasteful but not harmful; however, people with iron overload (either hemochromatosis or chronic transfusion requirement) can be damaged by vitamin C, which generates free radicals in the setting of iron excess.

THE IMPACT OF EMERGING EVIDENCE

Nevertheless, emerging evidence on CAM approaches is having some impact on public practice. In the last decade the National Institutes of Health has sponsored a number of major randomized clinical trials of widely used dietary supplements. By and large, these studies have failed to confirm the benefits expected from the smaller studies that preceded them. *Ginkgo biloba* was not found to prevent cognitive decline or dementia. No clear-cut benefits of glucosamine for most patients with osteoarthritis of the knee could be demonstrated. Vitamin E and or selenium did not change the rates of development of prostate cancer. St. John's wort *(Hypericum perforatum)* did not have an impact on major depression. Although controversy exists about a number of these studies, they have received major media coverage; the research results have affected determinations by the FDA and the U.S. Federal Trade Commission about permitted marketing claims; and analysis by the supplement industry indicates that the research has had substantial effect on the sale of these compounds.

TABLE e2-3 Internet Resources on Complementary and Alternative Medicine (CAM)

The Cochrane Collaboration Complementary Medicine Reviews

This Web site offers rigorous systematic reviews of mainstream and CAM health interventions using standardized methods. It includes more than 300 reviews of CAM therapies. Complete reviews require institutional or individual subscription, but summaries are available to the public.

http://www.cochrane.org/reviews/en/topics/22_reviews.html

MedlinePlus All Herbs and Supplements, A–Z List

MedlinePlus Complementary and Alternative Medicine

NLM FAQ: Dietary Supplements, Complementary or Alternative Medicines

These National Library of Medicine Web pages provide an A–Z database of science-based information on herbal and dietary supplements; basic facts about CAM therapies; and federal government sources on information about using natural products, dietary supplements, medicinal plants, and other CAM modalities.

http://www.nlm.nih.gov/medlineplus/druginfo/herb_All.html

http://www.nlm.nih.gov/medlineplus/complementaryandalternativemedicine.html

http://www.nlm.nih.gov/medlineplus/dietarysupplements.html

NIH National Center for Complementary and Alternative Medicine (NCCAM)

This National Institutes of Health NCCAM Web site contains information for consumers and health care providers on many aspects of CAM. Downloadable information sheets include short summaries of CAM therapies, uses and risks of herbal therapies, and advice on wise use of dietary supplements.

http://www.nccam.nih.gov

INFORMATION SOURCES

One of the difficult problems facing practicing physicians is providing patients with good advice and education about CAM practices. Irresponsible and misleading marketing claims abound, particularly on the Internet. Claims about antiaging regimens, enhancement of sexual function, weight loss, and increased athletic capacity are particularly common. A number of valuable Internet resources exist that provide good sources for patient education and can help counter some of this misinformation. Some particularly useful sites are summarized in Table e2-3.

In the last decade, it has become possible for scientists to perform the kind of rigorous systematic reviews of CAM that are the cornerstone of evidence-based medicine. A particularly valuable resource in this respect is the Cochrane Collaboration, which has performed more than 300 systematic reviews of CAM practices. Practitioners will find this a valuable resource to answer patient questions. By and large, most of these summaries do not conclude there is definite benefit; any beneficial effects that have been documented are modest but frequently are balanced by little indication of risk.

SUMMARY

An array of unproven modalities will always be used by the patients under physicians' care. Physicians must approach each encounter

as an opportunity to understand their patients' beliefs and expectations and use those insights to help guide their personal health care practices in a constructive way. Many of these choices are entirely innocuous and can be accommodated in the context of the established diagnostic and therapeutic interventions. Some of these choices should be actively discouraged. Along the way, scientific evidence will drive many CAM approaches out of favor. Some modalities will garner sufficient support to become part of mainstream care and the next generation of physicians will never know they were once controversial.

FURTHER READINGS

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