

## A LOOK AT ALTERNATIVE MEDICINE

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### INTRODUCTION

In the radiology environment, healthcare workers are well acquainted with traditional Western medical practices. These techniques are very effective for treating some types of acute disease and injuries. The discovery of bacteria, the refinement of surgical procedures, and the development of vaccines and other pharmaceuticals have resulted in tremendous advances in medical treatment. Unfortunately, there are some medical scenarios for which traditional medicine—often called *biomedicine*—has not performed as well as it does for surgery and treatment of infections. Patients are frequently not entirely satisfied with the options that traditional medicine offers for treating some chronic and debilitating conditions (e.g., arthritis, allergies, chronic pain, hypertension, cancer, depression, cardiovascular disease, and digestive ailments).

Complementary and alternative medicine (CAM) offers a different perspective on healthcare. This name is just one of the many terms used to describe approaches to medical care that are outside the realm of conventional medicine as practiced in the United States. Among Americans, interest in these alternative practices is growing. In a 1998 study, Eisenberg and coworkers<sup>1</sup> concluded that alternative medicine use and expenditure in the United States increased substantially between 1990 and 1997; the authors found this increase to be attributable primarily to an increase in the proportion of the population seeking alternative therapies rather than increased visits per patient. Furthermore, the authors state, “The magnitude of the demand for alternative therapy is noteworthy, in light of the relatively low rates of insurance coverage for these services.”

According to Marilyn Adams Maiser of the University of Minnesota Extension Service, consumer interest in CAM is driven by four main factors.<sup>2</sup> These factors are (1) disenchantment with mainstream medicine; (2) recognition that many diseases are chronic and few are ever

cured; (3) consumer demand for options, particularly when surgery or long-term drug therapy are indicated; and (4) a need for a relationship with, personal attention from, and interaction with caregivers. These issues have spurred an interest in the use of nontraditional approaches to treating disease. Herbs, nutritional supplements, acupuncture, yoga, and various types of massage are just a few examples of these methods.

Many confusing, conflicting, and sometimes outrageous claims have been made in relation to CAM. Although many Americans are interested in CAM, Americans typically possess a healthy wariness of nontraditional approaches to medicine. This skepticism has led to consumer demand for accurate and reliable information concerning CAM. In response to that demand, in 1998 the National Institutes of Health (NIH) established a division called the National Center for Complementary and Alternative Medicine (NCCAM) to assist Americans in evaluating the many options available through CAM. In addition, the NCCAM is the federal government’s lead agency for research on CAM.<sup>3</sup> The stated mission of the NCCAM is to support rigorous research on CAM, educate and train researchers in CAM, and provide information to the public and professionals on which CAM modalities work, which do not, and why. Much of the information in this article is taken (with permission) from the NCCAM web page, which can be accessed at the following Web site: [nccam.nih.gov](http://nccam.nih.gov).

By providing definitions, looking at the demographics of CAM users, and becoming acquainted with the advantages and drawbacks of using CAM therapies, it is hoped that this article will clarify some of the many issues surrounding CAM. A glossary of terms is also included at the end of the article to help those persons unfamiliar with the various aspects of CAM. It is hoped that this information can assist technologists working in traditional settings to better respond to the needs and inquiries of patients in their care.

### DEFINING COMPLEMENTARY AND ALTERNATIVE MEDICINE

CAM, as defined by the NCCAM, is a group of diverse medical and healthcare systems, practices, and products that are not presently considered to be part of

the conventional medicine system. Conventional medicine is recognized as medicine practiced by holders of M.D. or D.O. degrees as well as allied health professionals (e.g., physical therapists, psychologists, and registered radiologic technologists). Other terms for conventional medicine include allopathy; Western, mainstream, orthodox, regular medicine; and biomedicine. Some conventional medical practitioners are also practitioners of CAM.

Although data are available from a number of studies regarding the efficacy and safety of some CAM therapies, for most people in the field of medicine there are key questions that have not yet been answered through well-designed scientific studies. Such uncertainty includes key matters regarding safety and effectiveness.

One must keep in mind that the list of what is considered to be CAM changes continually as those therapies that are proved to be safe and effective become incorporated into conventional healthcare and also as new approaches to healthcare emerge.

Even though the terms complementary medicine and alternative medicine are sometimes used interchangeably, they refer to different types of nontraditional treatments. *Complementary medicine* is used *together with* conventional medicine. An example of a complementary therapy is using aromatherapy to help lessen a patient's discomfort following surgery. In contrast, *alternative medicine* is used *in place of* conventional medicine. An example of an alternative therapy is using a special diet to treat cancer instead of conventional medical modalities such as surgery, radiotherapy, or chemotherapy. Another term, *integrative medicine*, is defined by the NCCAM as those practices that combine mainstream medical therapies with CAM therapies for which there is some high-quality scientific evidence of safety and effectiveness. An example of a well-accepted integrated therapy is group support for cancer survivors.

## MAJOR TYPES OF CAM

Many classification systems for CAM therapies exist. The system used by the NCCAM identifies five CAM classifications.<sup>3</sup>

### ALTERNATIVE MEDICAL SYSTEMS

These classifications are built upon complete systems of theory and practice. Often, these systems have evolved apart from, and earlier than, the conventional medical approach used in the United States. Examples of alternative medical systems that have developed amid Western cultures include *homeopathic medicine* and *naturopathic medicine*. Examples of systems that have developed in non-Western cultures include *traditional oriental medicine* and *Ayurveda*.

## MIND-BODY INTERVENTIONS

These systems use a variety of techniques designed to enhance the mind's capacity to affect bodily functions and symptoms. Some techniques that were considered CAM in the past have become mainstream. Two examples of areas that were once considered "alternative" and are now fully integrated into conventional medical practices are *patient support groups* and *cognitive-behavioral therapy*.

## BIOLOGICALLY BASED THERAPIES

These systems use substances found in nature, such as herbs, food, and vitamins. Some examples include dietary supplements, herbal products, and the use of other so-called "natural" but as yet scientifically unproved therapies (e.g., using shark cartilage to treat cancer).

## MANIPULATIVE AND BODY-BASED METHODS

These systems are based on manipulation and/or movement of one or more parts of the body. Some examples include chiropractic manipulation, osteopathic manipulation, and massage.

## ENERGY THERAPIES

These systems involve the use of energy fields. There are two main types of energy therapies. *Biofield therapies* are intended to affect energy fields that allegedly surround and penetrate the human body. However, the existence of such fields has not yet been scientifically proved. Some forms of energy therapy seek to manipulate the body's biofield by applying pressure and/or manipulating the body by placing the hands in, or through, these fields. Examples include *Qi Gong*, *Reiki*, and *therapeutic touch*. *Bioelectromagnetic-based therapies* involve the unconventional use of electromagnetic fields, such as pulsed fields, magnetic fields, or alternating current or direct current fields.

## DIFFERENCES BETWEEN ALTERNATIVE MEDICINE SYSTEMS AND CONVENTIONAL MEDICINE

Even though conventional medicine has incorporated many aspects of CAM, there are still some overarching differences. One distinction is in standards of proof between the two systems. Conventional medicine is "evidence-based;" that is, it relies on methods that have been proved to work in scientifically valid studies. This doesn't mean that everything in conventional medicine has been proved. However, new approaches— in particular—usually have to work their way through rigorous clinical trials before they are accepted.

In contrast, alternative medicine relies more heavily on anecdotal evidence; that is, what works for the individual, even if the method hasn't been shown to work in a scientific clinical trial. Additionally, the reason that a method works—often referred to in traditional medicine as the “mechanism of action”—may not be well understood or investigated for alternative medicine therapies. Alternative medicine relies on the kind of evidence that comes from experience—such as the approximately 5,000-year history of acupuncture.

Another difference between alternative and conventional medical approaches is in the training of their practitioners. A patient visiting a conventional doctor is relatively certain of that person's credentials. That is, the doctor went to a four-year college, graduated from an accredited medical school, and then spent three to five more years in residency training. Some doctors have even more advanced training. All have passed standardized board examinations. The credentials of an alternative doctor may be considerably more unpredictable. Educational standards for alternative practitioners vary considerably, depending on location and the area of alternative medicine. An alternative practitioner could be an MD with the usual training who has also been trained in some area of alternative medicine. However, that training could mean anything from a weekend seminar (on a cruise ship) to three years of an advanced program in Chinese medicine.<sup>4</sup> In addition, the quality and scientific foundation for these training programs vary considerably. For instance, a “trained” alternative practitioner could have completed many years of formal training in an accredited acupuncture program and be licensed and/or certified by a specific state. Another practitioner could just be someone who took a mail-order course in crystal healing and started a practice.

Finally, alternative medicine is based on a different view of health and illness than that of traditional medicine. Although it is true that many conventional practitioners hold the following views, until recently these beliefs weren't emphasized in mainstream medical schools:<sup>4</sup>

- \* The whole person counts—not just the physical body.
- \* Therapy should exploit the healing power of nature.
- \* The individual patient is much more important than the disease.
- \* Preventing disease is as important as treating it.
- \* Patients should play an active role in their own healthcare.
- \* Healthcare should be priced reasonably and be widely available.

## CHARACTERISTICS OF CAM USERS

What type of person seeks CAM? Do users of nontraditional methods of medical treatment possess common characteristics? That is, does a certain “CAM-patient profile” exist? If we, as healthcare providers in the traditional Western medical model can better understand what motivates a patient to seek CAM, we can then improve our services. Could an improved Western medical model eliminate the need for patients to seek care elsewhere? In a “Letter to the Editor” from the *Annals of Internal Medicine*, one physician states, “It is puzzling that droves of people are seeking alternative medicine when standard or scientific medicine now provides most solutions for medical problems and has significantly extended lives and improved quality of life.”<sup>5</sup>

Studies have been conducted to learn whether there are any common traits among users of CAM. Although some conclusions can be drawn from the data collected to date, it is important to recognize that there are many difficulties inherent in gathering such data. The decision-making process an individual uses in selecting when and where to seek healthcare is a complex process. Patients' descriptions of how and why they consulted a CAM practitioner are inevitably colored by their subsequent experience of the particular practitioner, the progress of their illness, and many other factors.<sup>6</sup> In addition to these difficulties, the following differences yield quite a range of results: (1) differences in cultures, laws, and other variables that exist among countries; (2) differences in definitions of CAM and who is a user of CAM; and (3) differences in experimental approaches among researchers. Given these methodological difficulties, it is not surprising that to date the results of the research on CAM usage have at times been contradictory.

Nevertheless, research data generally agree that users of CAM appear to be a more homogeneous group than non-users. Conversely, non-users of CAM are spread across the entire spectrum of sociodemographic variables (e.g., age, income, and health). Overall, CAM users are more likely to be young and middle-aged adults who have higher incomes and are better educated than members of the average populations.

In a national study, Astin found education to be the number one sociodemographic variable that predicted use of alternative medicine; individuals with higher educational attainment were more likely to use alternative forms of healthcare.<sup>7</sup> The results of this study are illustrated graphically in Figures 1 to 4. Many of these trends have been confirmed by other researchers in the United States and elsewhere.<sup>1,8-10</sup>

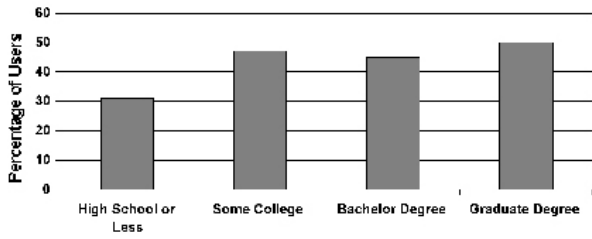


FIGURE 1. Users of Alternative Healthcare Based on Education Level

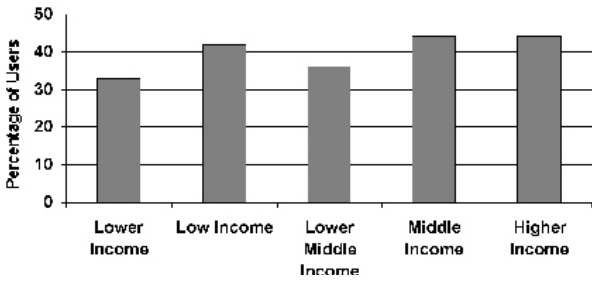


FIGURE 2. Users of Alternative Healthcare Based on Income Level

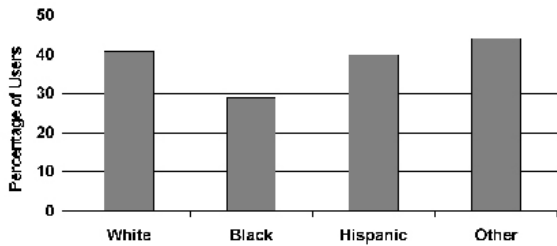


FIGURE 3. Users of Alternative Healthcare Based on Race/Ethnicity

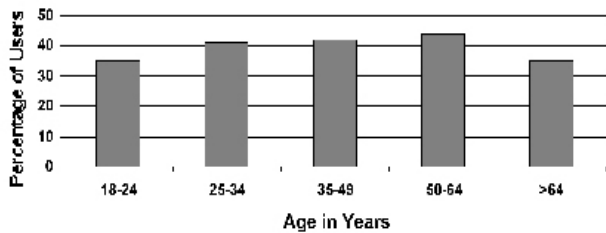


FIGURE 4 Users of Alternative Healthcare Based on Age

TABLE 1. Most Frequently Used Alternative Therapies for Specific Health Problems<sup>15</sup>

Health Problem	Most Frequently Used Alternatives
Chronic pain	Exercise Chiropractic Massage
Anxiety	Relaxation Exercise Herbs Art/music therapy Massage
Chronic fatigue syndrome	Massage Exercise Self-help groups Megavitamins
Sprains/muscle strains	Chiropractic Exercise Massage Relaxation Herbs
Addictive problems	Psychotherapy Self-help groups
Arthritis or rheumatism	Exercise Chiropractic Homeopathy Herbs
Severe headaches	Chiropractic Massage Exercise Relaxation
Depression	Relaxation Exercise Herbs
Digestive problems	Lifestyle changes/diet Relaxation Herbs Chiropractic
Diabetes	Lifestyle changes/diet Exercise

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Among the explanations that Astin offers for this trend are that education may increase the likelihood that people will (1) be exposed to various nontraditional forms of healthcare through their own reading of popular or academic books on the subject, (2) educate themselves about their illnesses and the variety of treatments available to them, and/or (3) question the authority of conventional practitioners and be less inclined to simply accept unquestionably the physician's knowledge and expertise.

Another prevalent pattern is that the utilization rate of CAM among women is higher than that for men. In addition, most study results showed that the majority of patients consulted a CAM practitioner only after they first presented the health problem to conventional practitioners.<sup>1,6,7,11</sup> Research suggests that few individuals rely solely on CAM for their medical care; rather, they use CAM in conjunction with conventional medicine. However, this does not mean that a patient's conventional practitioner recommends—or even knows about—the patient's decision to seek CAM therapies. In fact, approximately 70% of patients who use CAM do not tell their conventional practitioner about this use.<sup>12</sup> Traditional physicians worry that this situation carries the potential for a great deal of harm; for example, herbs often act like medications and may interact with or potentiate other conventional medications.<sup>13</sup> For the most part, patients report that they do not share their decision with their general practitioners to avoid potential criticism. Patients say that, in some cases, physicians who are usually caring, thoughtful, and understanding become angry, defensive, and dismissive when the possibility of using alternative therapies is even mentioned.<sup>14</sup>

Although researchers have found that certain CAM therapies tended to be used more frequently, a broad range of alternatives were being used for the majority of health problems. Table 1 lists the most frequently used alternative therapies for specific health problems. As this table illustrates, patients tended to select CAM treatment primarily for chronic ailments. Furthermore, the same data indicate that for acute situations or when more advanced care was needed, patients turned to specialized physicians from the traditional camp.

Research to date has not confirmed many of the theories that have been proposed regarding why an individual at some point in his or her life may choose one of the many CAM therapies. For instance, CAM users do not reject modern science. In one survey, more than 80% of respondents had faith in the ability of science to “provide us with a better life” and more than 95% of them believed that scientific medicine has been “effective in curing disease.”<sup>16</sup> In addition, data have not supported the hypothesis that individuals who use CAM subscribe to a different world view. As one researcher states:

*I agree that in many cases the healer's understanding is similar to the patient's understanding of the world.*

*However, this is not always true. Most patients treated with acupuncture do not understand the theoretical basis of traditional Chinese medicine. Acupuncturists and their patients often originate from different cultures. Many patients treated by homeopaths have never heard of Hahnemann's books, *Organon of Medicine* and *The Chronic Diseases* and do not know the meaning of the phrase *similia similibus curantur*.<sup>16</sup>*

## REASONS FOR CHOOSING CAM

An impressive amount of research has been done to uncover what factors influence a patient's selection of CAM. One of the main factors that patients cited was related to their traditional physicians' approaches and attitudes. Patients report that primary care physicians are often not open to their questions concerning the possibility of CAM therapies. Consequently, patients' trust in their physicians decreases, the doctor-patient relationship deteriorates, and patients turn to CAM practitioners without the benefit of their physicians' counsel. In many cases, the decision for CAM is stimulated by a need for attention and compassion that many patients do not get from conventional medical practitioners.<sup>14</sup> In like manner, patients who have turned to CAM often state that their general practitioners did not give them enough information about their condition. It is interesting to also note that the majority of patients were satisfied with their CAM providers in this respect.<sup>17</sup>

Another factor that affects a patient's decision to seek CAM therapies is the fear of iatrogenic diseases brought about by pharmaceutical drugs. In addition, there is often concern regarding side effects and fear of drastic interventions by the traditional medical community. Another issue is the inability of conventional medicine to provide cures for many degenerative and chronic illnesses.<sup>6,16</sup>

Opinions and experiences of friends also play a role in deciding to consult a CAM practitioner. And finally, in addition to all the previously mentioned reasons, the desire for personal control over one's health is thought to be a major factor.

## SUGGESTIONS FOR SELECTING A CAM PRACTITIONER

Some of the advantages of CAM can also be disadvantages. In particular, the idea of empowered patients responsible for their own healthcare is great, but it can also be a burden to both patients and healthcare providers. Separating the CAM options that are safe and effective from the entirely unproved, possibly dangerous treatments can be difficult. The following guidelines have been taken from the NCCAM web site<sup>3</sup> and from the book, *Alternative Medicine for Dummies*.<sup>4</sup> Knowledge of these general principles can provide healthcare workers

the tools needed to offer advice to patients inquiring about alternatives to traditional medicine.

- ❖ **Tell Your Doctor.** There is no question that the safest way to use alternative medicine is to let your regular doctor know what you're doing. Ask your doctor for a recommendation regarding the type of CAM practitioner you are seeking.
- ❖ **Know When It's Safe to Try Alternatives on Your Own.** As a rule, in the case of serious diseases, traditional medicine—that is, surgery, prescription drugs, and so forth—is likely to provide the most effective treatment. However, even in these situations, CAM may prove beneficial when integrated with traditional medicine. A new or unusual injury or ailment—particularly any that involve vital signs such as blood pressure, pulse, breathing rate, or temperature—needs a professional diagnosis. The same rule is true if you're being treated for a serious illness—or using any kind of medication—and you suddenly develop what seems to be an unrelated symptom. Mixing and matching therapies on your own is a bad idea, even if one of the “mixes” is an over-the-counter “natural” therapy. In general, you can usually feel comfortable trying to treat yourself in the following situations:
  - When you have an obviously common and non-life-threatening problem such as a cold, simple bruise, occasional stress, a few extra pounds
  - When you have a long-term, stable condition and you just want to augment your ability to heal
- ❖ **Do Your Homework.** Make a list of CAM practitioners and gather information about each before making your first visit. Ask basic questions about their credentials and practice. Where did they receive their training? What licenses or certifications do they have? How much will the treatment cost? Here are some red flags. That is, the following examples may signal possibly dangerous or bogus claims:<sup>4</sup>
  - Herbs or other substances your conventional doctor can't identify after a thorough literature search
  - Secret ingredients
  - Injections of any kind—unless they are investigated and approved by your conventional doctor
  - Promises using words such as “miraculous,” “amazing,” or “rejuvenating”
  - Any alternative healer who won't tell you how long treatments will take, how much they will cost, and when you should expect improvement
  - Alternative healers who are extremely hostile toward mainstream medicine

- Anyone who tells you that there are *no* questions about the safety or efficacy of his or her approach—or *no* limitation to what he or she can do
- ❖ Check with your insurer to see if the cost of therapy will be covered.
- ❖ After selecting a practitioner, come to the first visit prepared to answer questions about your health history—including injuries, surgeries, major illnesses, prescription medicines, vitamins, and other supplements you may take.
- ❖ Assess your first visit and decide if the practitioner is right for you. Did you feel comfortable with the practitioner? Could the practitioner answer your questions? Did he or she respond to you in a way that satisfied you? Does the treatment plan seem reasonable and acceptable to you?

Applied to the correct situation, CAM can provide a patient with extraordinary benefits. Unfortunately, there are also many charlatans making false claims. There is potential for great harm when unsuspecting patients are taken in by such claims. Harm can arise in a number of ways. By wasting time on ineffective therapies, treatment for a serious problem may be delayed. The sham treatment can interfere with other treatments or medicines. And finally, untested remedies can cause direct damage. It is important to remember that “natural” and “safe” are not equivalent terms (i.e., arsenic is natural, but it certainly isn't safe). By following the aforementioned bulleted suggestions, an individual can navigate this minefield of options.

## ADVANCES IN CAM

As mentioned previously, medical techniques that were previously thought of as “alternative” continue to be adopted by mainstream medicine. More and more conventional doctors are incorporating the useful, proven aspects of alternative medicine into their practices. To help the traditional medical establishment, as well as the general public, the United States Government has provided funding to explore CAM practices through rigorous science. This funding effort includes supporting carefully selected, designed, and conducted clinical trials of CAM therapies. Listed on the NCCAM website are 116 different treatments or therapies that are currently under clinical investigation or completed (Table 2). These trials are designed to address a wide variety of diseases or medical conditions. The NCCAM website currently lists 109 different diseases or medical conditions for which CAM treatment approaches are being evaluated. These trials are in various stages, ranging from still recruiting participants to completed (Table 3).<sup>3</sup>

**TABLE 2. NCCAM Clinical Trials Currently Under Way or Completed—by Treatment or Therapy**

Acupressure	Flax seed	Observational study
Acupuncture	Garlic	Omega-3 fatty acids
Aerobic and resistance exercises	General conditioning and aerobic exercise (GCAE)	Oyster mushrooms
Alpha-lipoic acid	Ginger	Osteopathic manipulation
Alpha tocopherol and ascorbate	Ginkgo biloba	Pancreatic enzyme therapy
Amino acid therapy	Ginseng	Percutaneous electrical nerve stimulation (PENS)
Amitriptyline	Glucosamine	Phytoestrogens
Antioxidants	Gonzalez regimen	Pine bark
Arginine	Guided imagery	Placebo
Aromatherapy	Herbs	Polarity therapy
Art therapy	Homeopathy	Prevention
Biofeedback	Hyperbaric oxygen therapy	Probiotics
Black Cohosh	<i>Hypericum perforatum</i>	Prolotherapy
Bodywork therapy	Hypnosis	Psychosocial telephone counseling
Borage oil	Immunotherapy	Qi Gong therapy
Botanical treatments	Kelley regimen	Red clover
Broccoli sprout tea	L-carnitine	Reiki
Chamomile tea	L-norleucine	Relaxation
Chelation	Light therapy	SAM-e
Chinese exercise modalities	Lutein	Saw palmetto
Chiropractic therapy	Macrobiotic diet	Selenium
Chocolate	Magnesium	Self-hypnotic relaxation
Chondroitin	Magnetic brain stimulation	Shamanic healing
Chromium	Massage	Shark cartilage
Chromium picolinate	Meaning-centered psychotherapy	Siliphos
Complementary and alternative medicine (general)	Meditation	Soy
Cranberry	Melatonin	Spinal manipulation
Craniosacral osteopathic manipulative treatment	Micronutrient therapy	Spirituality
Creatine therapy	Milk thistle	St. John's Wort
Dehydroepiandrosterone (DHEA)	Mind-body interventions	Stress reduction
Dietary supplements (weight loss)	Mindfulness	Tai Chi
Distant healing	Mistletoe	Traditional Chinese medicine
Echinacea	Moxibustion	Touch
Electroacupuncture	Music therapy	Valerian
Essential fatty acids	Naturopathic medicine	Vedic medicine
Etanercept	Noni	Vitamin C
Expressive writing	NPI-028	Vitamin E
Fish oil	Nutrition	Yoga

*TABLE 3. NCCAM List of Diseases or Conditions for Which CAM Treatment Is Being Investigated*

Abdominal pain	Alcoholism	Alzheimer's disease
Amyotrophic lateral sclerosis (ALS)	Anxiety disorders	Arthritis
Asthma	Bacterial vaginosis	Benign prostatic hyperplasia (BPH)
Binge eating disorder	Bipolar disorder	Bone marrow transplantation
Bowel disorders	Brain tumors	Breast Cancer
Bronchitis	Cancer	Cardiovascular disease
Carpal tunnel syndrome	Cerebral palsy	Cervical cancer
Colorectal cancer	Common cold	Congestive heart failure
Contraceptive effectiveness	Coronary disease	Cumulative trauma disorder
Dementia	Depressive disorders	Diabetes
Down syndrome	Drug interactions	Dysmenorrhea
Ear infections	Emphysema	Endometrial cancer
Endometriosis	Fibromyalgia	Glioblastoma
Gum disease	Headaches	Hepatic steatosis
Hepatitis	HIV infections	Hot flashes
Huntington's disease	Hypercholesterolemia	Hyperglycemia
Hyperlipidemia	Hypertension	Hypertriglyceridemia
Impaired glucose tolerance	Insomnia	Insulin sensitivity
Irritable bowel syndrome	Kidney failure (chronic)	Laryngeal cancer
Leiomyoma	Leukemia	Liver cancer
Low back pain	Lung cancer	Lung disease
Lymphedema	Memory disorders	Menopause
Metabolic diseases	Multiple sclerosis	Nausea
Neck pain	Neurologic disorders	Non-Hodgkin's lymphoma
Obesity	Obsessive compulsive disorder	Osteoarthritis
Osteoporosis	Otitis media	Ovarian cancer
Pain	Pancreatic cancer	Parkinson's disease
Pelvic pain	Periodontitis	Phobic disorders
Postmenopause	Post-traumatic stress disorder (PTSD)	Premature birth
Prostate cancer	Prostate disease	Psychosis
Pulmonary disease	Radiation-induced abnormalities	Repetitive strain injury
Respiratory diseases	Retinitis pigmentosa	Sexual disorders
Shoulder pain	Sickle cell disease	Stem cell transplantation
Stress	Sleep disorders	Temporomandibular joint disorder (TMJD)
Tooth, impacted	Swelling	Uterine cancer
Varicella	Urinary tract infections	Vestibulopathy
Vomiting	Vascular disease	

## CONCLUSION

Recently a consumer movement has driven the popularity of CAM. This interest is fueled by a variety of reasons, including the desire for more therapeutic options and patient desire for more personal autonomy and control over healthcare decisions. Many CAM choices may enhance an individual's health, but unfortunately there are some CAM therapies that are practiced by unscrupulous or poorly trained practitioners.

Understanding the basic issues surrounding CAM can help technologists effectively support patients in making informed, safe, and appropriate choices. In addition, all traditional healthcare field practitioners should keep in mind the reasons that patients seek alternative sources of healthcare. In doing so, we can look at our professional roles more critically. Can we do more to help patients feel empowered? Can we offer a more personal, caring approach to patients? Finally, it is important to recognize that as healthcare workers we are likely to see more "alternative" approaches integrated into our daily practices as clinical trials are performed and CAM methods that are safe and effective are identified.

## GLOSSARY

**Acupuncture** is an ancient collection of healing methods developed in Far East Asia that dates back more than 2,000 years. The most well-known form involves inserting solid hair-thin needles into key points of the body and manipulating the needles to relieve pain, promote healing, and improve well-being.

**Anecdotal evidence** is that based on individuals' observation rather than a systematic collection of data. Most conventional scientists consider anecdotal evidence to be nearly meaningless because there is no objective way to distinguish the effects that are due to the procedure being tested from other effects, such as chance or the power of suggestion.

**Aromatherapy** refers to the therapeutic use of essential oils that have been distilled from plants and used to promote health and well-being.

**Ayurveda** is an alternative medical system that has been practiced primarily in India for 5,000 years. Ayurveda provides an integrated approach that emphasizes the use of body, mind, and spirit in the prevention and treatment of illness. Ayurveda includes lifestyle interventions and a wide range of diet and herbal remedies.

**Chiropractic science** is an alternative medical system that focuses on the relationship between structure (primarily of the spine) and function (primarily of the nervous system) of the human body to restore and preserve health.

**Dietary supplements**, as defined by the US Congress, are defined as products (other than tobacco) taken by mouth that contain a dietary ingredient intended to supplement the diet. Dietary ingredients may include vita-

mins; minerals herbs or other botanicals; amino acids; and substances such as enzymes, organ tissues, and metabolites. Dietary supplements come in many forms, including extracts, concentrates, tablets, capsules, gel capsules, liquids, and powders. They have special requirements for labeling. Under the Dietary Supplement Health and Education Act of 1994, dietary supplements are considered foods, not drugs.

**Electromagnetic fields:** Bioelectromagnetics is the emerging science that studies how living organisms interact with electromagnetic (EM) fields. Electrical phenomena are found in all living organisms. Additionally, electric currents exist in the body that are capable of producing magnetic fields that extend outside the body. Consequently, external magnetic and EM fields can influence the electric currents within the body. It is theorized that changes in the body's natural fields may produce physical and behavioral changes.

**Homeopathic medicine** is an alternative medical theory and practice that uses diluted portions of natural substances to cure symptoms of disease. Remedies are made from many sources, including plants, minerals, or animals. Patients receiving homeopathic care frequently feel worse before they get better because homeopathic remedies often stimulate, rather than suppress, symptoms. Homeopaths consider symptoms to be good because they are the body's way of healing itself.

**Iatrogenic diseases** are any adverse mental or physical conditions induced in a patient as a result of treatment effects by a physician or surgeon.

**Massage** is formally defined as any kind of systematic manipulation of the soft tissues of the body. Massage therapists manipulate muscle and connective tissue to enhance function of those tissues and promote relaxation and well-being.

**Naturopathic medicine** is an alternative medical system in which practitioners work with natural healing forces within the body toward the goal of helping the body heal itself. Naturopathic practices may include dietary modification, massage, exercise, acupuncture, minor surgery, and various other interventions.

**Osteopathic medicine** is a form of conventional medicine that, in part, emphasizes diseases arising in the musculoskeletal system. There is an underlying belief that all of the body's systems work together, and disturbance in one system may affect function elsewhere in the body. Some osteopathic physicians practice osteopathic manipulation, a full-body system of hands-on techniques to alleviate pain, restore function, and promote health and well-being.

**Qi Gong** is the art and science of using breath, movement, and meditation to cleanse, strengthen, and circulate the blood and vital life energy. It is a component of traditional Chinese medicine that aims to enhance the flow of qi. Qi, (also chi, or ki) is an ancient term used to describe the energy that connects and animates everything in the universe.

**Reiki**, which originated in Japan in the 1800s, is a Japanese word that represents universal life energy. Reiki is based on the belief that when spiritual energy is channeled through a Reiki practitioner, the patient's spirit is healed, which in turn allows the healing of the physical body.

**Similia similibus curantur** translates as "like cures like." This principle is the foundation for the homeopathic method. According to this system, any medicine capable of producing detrimental symptoms in a healthy person will relieve similar symptoms occurring as an expression of disease.

**Therapeutic Touch** is derived from an ancient technique called laying-on of hands. This technique is based on the premise that it is the healing force of the therapist that affects the patient's recovery. Healing is promoted when the body's energies are in balance. By passing his or her hands over the patient, a healer can identify energy imbalances.

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## A LOOK AT ALTERNATIVE MEDICINE POST TEST

Expires: May 15, 2011 Approved for 1 AART Category A Credit.

- According to University of Minnesota findings, which of the following is NOT a reason that patients choose CAM?**
  - Disenchantment with mainstream medicine
  - Recognition that many diseases are chronic and few are ever cured
  - Need for low-cost or no-cost healthcare
  - Need for a relationship, personal attention, and interaction with caregivers
- The NIH established a division that focuses on CAM due to**
  - consumer demand.
  - pharmaceutical company requests.
  - demand by the American Medical Association.
  - high malpractice claims.
- CAM, as defined by the NCCAM, is**
  - any medical practice that is not taught in traditional Western medical schools.
  - any medical treatment that has not yet been evaluated.
  - unregulated therapy or treatment that is provided by an unlicensed practitioner.
  - a group of diverse medical and healthcare systems, practices, and products that are not presently considered to be part of the conventional medicine system.
- All of the following are terms for conventional medicine EXCEPT**
  - Western medicine.
  - mainstream medicine.
  - complementary medicine.
  - biomedicine.
- Alternative medicine is**
  - used together with conventional medicine.
  - used in place of conventional medicine.
  - a combination of mainstream and unconventional therapies.
  - a system of medicine that uses only the mind to heal the body.
- Biologically based therapies**
  - use substances found in nature, such as herbs, foods, and vitamins.

- b. rely heavily on commercially produced pharmaceuticals.
- c. primarily use physical manipulation, such as massage.
- d. involve the use of energy fields.
- 7. Alternative medicine relies more heavily on \_\_\_\_\_ than does traditional medicine.**
- a. scientifically valid studies
- b. anecdotal evidence
- c. understanding a substance's mechanism of action
- d. evidence-based proof
- 8. Which of the following are aspects of the CAM view of health and illness?**
1. The whole person counts—not just the physical body.
2. Therapy should exploit the healing power of nature.
3. Preventing disease is as important as treating it.
4. Patients should play an active role in their own health.
- a. 1 only
- b. 2 only
- c. 3 and 4
- d. 1, 2, 3, and 4
- 9. As a group, CAM users are a more \_\_\_\_\_ group than non-users.**
- a. homogeneous
- b. heterogeneous
- c. racially diverse
- d. healthy
- 10. Overall, CAM users are more likely to be**
- a. of lower income, less-educated, and older.
- b. members of ethnic minorities.
- c. of higher income, better-educated, and young adults.
- d. employed in a healthcare field.
- 11. In the national US survey by Astin, what was found to be the number 1 sociodemographic variable that predicted the use of CAM?**
- a. Age
- b. Education
- c. Occupation
- d. Geographic location
- 12. What percentage of patients use CAM without telling their conventional doctors?**
- a. 5
- b. 15
- c. 35
- d. 70
- 13. As a rule, traditional medicine should be used for**
- a. cases of serious injury or life-threatening diseases.
- b. common and non-life-threatening problems.
- c. long-term or stable conditions.
- d. the common cold, simple bruises, and occasional stress.
- 14. Many clinical trials to determine the effectiveness of CAM are being carried out by**
- a. the American Medical Association.
- b. the division of the NIH known as the NCCAM.
- c. major American pharmaceutical companies.
- d. the Occupational Health and Safety Administration.
- 15. Anecdotal evidence is**
- a. data that is derived from well-designed clinical trials.
- b. gathered from a systematic collection of data.
- c. data based on individual observation or experience.
- d. considered to be the most useful type of data.
- 16. Ayurveda is an alternative medical system that was originally practiced**
- a. by Native Americans.
- b. in Japan during the early 1700s.
- c. in the American South by Africans brought to North America as slaves.
- d. primarily in India for 5,000 years.
- 17. According to the US Congress, which of the following is NOT a dietary supplement?**
- a. Vitamins
- b. Minerals
- c. Tobacco
- d. Amino acids
- 18. Iatrogenic diseases are those that occur**
- a. for which no cause can be found.
- b. as a result of the aging process.
- c. as a result of treatment by a physician or surgeon.
- d. at birth as a result of genetic abnormalities.
- 19. Which of the following is an alternative medical system in which practitioners work with natural healing forces within the body toward the goal of helping the body heal itself?**
- a. Naturopathic medicine
- b. Chiropractic medicine
- c. Osteopathic medicine
- d. Bioelectromagnetics
- 20. Similia similibus curantur translates as**
- a. "first, do no harm."
- b. "like cures like."
- c. "energy connects and animates the universe."
- d. "heal thyself."



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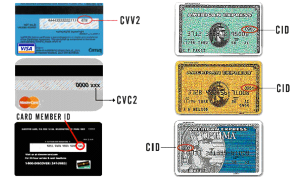
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