

Be Wary of "Alternative" Health Methods (Stephen Barrett, M.D.)

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"Alternative medicine" has become the politically correct term for questionable practices formerly labeled quack and fraudulent. During the past few years, most media reports have contained no critical evaluation and have featured the views of proponents and their satisfied clients.

Loose Definitions Cause Confusion

To avoid confusion, "alternative" methods should be classified as genuine, experimental, or questionable. *Genuine* alternatives are comparable methods that have met science-based criteria for safety and effectiveness. *Experimental* alternatives are unproven but have a plausible rationale and are undergoing responsible investigation. The most noteworthy is use of a 10%-fat diet for treating coronary heart disease. *Questionable* alternatives are groundless and lack a scientifically plausible rationale. The archetype is homeopathy, which claims that "remedies" so dilute that they contain no active ingredient can exert powerful therapeutic effects. Some methods fit into more than one category, depending on the claims made for them. Blurring these distinctions enables promoters of quackery to argue that because some practices labeled "alternative" have merit, the rest deserve equal consideration and respect. Enough is known, however, to conclude that most questionable "alternatives" are worthless.

An even better way to avoid confusion is sort methods into three groups: (1) those that work, (2) those that don't work, and (3) those we are not sure about. Most methods described as "alternative" fall into the second group. A 1998 editorial in the *Journal of the American Medical Association* made the same point in another way:

There is no alternative medicine. There is only scientifically proven, evidence-based medicine supported by solid data or unproven medicine, for which scientific evidence is lacking. Whether a therapeutic practice is "Eastern" or "Western," is unconventional or mainstream, or involves mind-body techniques or molecular genetics is largely irrelevant except for historical purposes and cultural interest. We recognize that there are vastly different types of practitioners and proponents of the various forms of alternative medicine and conventional medicine, and that there are vast differences in the skills, capabilities, and beliefs of individuals within them and the nature of their actual practices. Moreover, the economic and political forces in these fields are large and increasingly complex and have the capability for being highly contentious. Nonetheless, as believers in science and evidence, we must focus

on fundamental issues -- namely, the patient, the target disease or condition, the proposed or practiced treatment, and the need for convincing data on safety and therapeutic efficacy [1].

Arnold Relman, M.D. former editor of *The New England Journal of Medicine*, has expressed similar thoughts:

There are not two kinds of medicine, one conventional and the other unconventional, that can be practiced jointly in a new kind of "integrative medicine." Nor, as Andrew Weil and his friends also would have us believe, are there two kinds of thinking, or two ways to find out which treatments work and which do not. In the best kind of medical practice, all proposed treatments must be tested objectively. In the end, there will only be treatments that pass that test and those that do not, those that are proven worthwhile and those that are not [2].

John Farley, Ph.D., professor of physics at the University of Nevada, Las Vegas, has commented:

"Integrative" medicine is purportedly combining alternative and mainstream approaches to medicine. The claim is that integrative medicine provides the best of both approaches. This may sound reasonable, but actually it is not. Suppose that the "integrative" approach were to spread beyond medicine, and were to be more broadly adopted by other disciplines in the sciences. The biologists would "integrate" creationism with Darwinian evolution, while the chemists would integrate alchemy into modern scientific chemistry. The geologists would integrate the belief that the world is only 6000 years old (and flat) with modern dating of rocks. Physicists would integrate perpetual motion machines with the conservation of energy and the laws of thermodynamics. And the astronomers would integrate astrology and astronomy. Of course, this is ridiculous. It's not a good idea to integrate nonsense with valid scientific knowledge [3].

The "alternative movement" is part of a general societal trend toward rejection of science as a method of determining truths. This movement embraces the postmodernist doctrine that science is not necessarily more valid than pseudoscience [4]. In line with this philosophy, "alternative" proponents assert that scientific medicine (which they mislabel as allopathic, conventional, or traditional medicine) is but one of a vast array of health-care options. "Alternative" promoters often gain public sympathy by portraying themselves as a beleaguered minority fighting a self-serving, monolithic "Establishment."

The Rules of Science

Under the rules of science, people who make the claims bear the burden of proof. It is their responsibility to conduct suitable studies and report them in sufficient detail to permit evaluation and confirmation by others. Instead of subjecting their work to scientific standards, promoters of questionable "alternatives" would like to change

the rules by which they are judged and regulated. "Alternative" promoters may give lip service to these standards. However, they regard personal experience, subjective judgment, and emotional satisfaction as preferable to objectivity and hard evidence. Instead of conducting scientific studies, they use anecdotes and testimonials to promote their practices and political manoeuvring to keep regulatory agencies at bay. As noted in a recent *New England Journal of Medicine* editorial:

What most sets alternative medicine apart . . . is that it has not been scientifically tested and its advocates largely deny the need for such testing. By testing, we mean the marshaling of rigorous evidence of safety and efficacy, as required by the Food and Drug Administration (FDA) for the approval of drugs and by the best peer-reviewed medical journals for the publication of research reports. Of course, many treatments used in conventional medicine have not been rigorously tested, either, but the scientific community generally acknowledges that this is a failing that needs to be remedied. Many advocates of alternative medicine, in contrast, believe the scientific method is simply not applicable to their remedies. . . .

Alternative medicine also distinguishes itself by an ideology that largely ignores biologic mechanisms, often disparage modern science, and relies on what are purported to be ancient practices and natural remedies (which are seen as somehow being simultaneously more potent and less toxic than conventional medicine). Accordingly, herbs or mixtures of herbs are considered superior to the active compounds isolated in the laboratory. And healing methods such as homeopathy and therapeutic touch are fervently promoted despite not only the lack of good clinical evidence of effectiveness, but the presence of a rationale that violates fundamental scientific laws -- surely a circumstance that requires more, rather than less, evidence [5].

The AMA Archives of Dermatology recently published the parallel views of a German physician:

When deliberating on the essence of alternative medicine we should simultaneously reflect on the intellectual and moral basis of regular medicine. . . . (1) alternative and regular medicine are speaking different languages; (2) alternative medicine is not unconventional medicine; (3) the paradigm of regular medicine is rational thinking; (4) the paradigm of alternative medicine is irrational thinking; (5) the present popularity of alternative medicine can be explained by romanticism; (6) some concepts of alternative medicine are falsifiable and others are not; (7) alternative medicine and evidence-based medicine are mutually exclusive; (8) the placebo effect is an important factor in regular medicine and the exclusive therapeutic principle of alternative medicine; (9) regular and alternative medicine have different aims: coming of age vs faithfulness; (10) alternative medicine is not always safe; (11) alternative medicine is not economic; and (12) alternative medicine will always exist. The fact that alternative methods are presently an integral part of medicine as taught at German universities, as well as of the physician's fee schedule, represents a collective aberration of mind that hopefully will last for only a short time [6].

When someone feels better after having used a product or procedure, it is natural to credit whatever was done. This is unwise, however, because most ailments resolve by themselves and those that persist can have variable symptoms. Even serious conditions can have sufficient day-to-day variation to enable useless methods to gain large followings. In addition, taking action often produces temporary relief of symptoms due to a placebo effect. This effect is a beneficial change in a person's condition that occurs in response to a treatment but is not due to the pharmacologic or physical aspects of the treatment. Belief in the treatment is not essential, but the placebo effect may be enhanced by such factors as faith, sympathetic attention, sensational claims, testimonials, and the use of scientific-looking charts, devices, and terminology. Another drawback of individual success stories is that they don't indicate how many failures might occur for each success. People who are not aware of these facts tend to give undeserved credit to "alternative" methods.

The fact that an "alternative" method may exert a placebo effect that relieves symptoms is not sufficient reason to justify its use. Therapy should be based on the ability to alter abnormal physiology and not on the ability to elicit a less predictable placebo effect. Placebo therapy is inherently misleading and can make patients believe something is effective when it is not. Without controlled clinical trials, any treatment that is used could receive credit for the body's natural recuperative ability. Medical "facts" are determined through a process in which hundreds of thousands of scientists share their observations and beliefs. Editors and editorial boards of scientific journals play an important role by screening out invalid findings and enabling significant ones to be published. Expert panels convened by government agencies, professional groups, voluntary health agencies, and other organizations also contribute to this effort. When controversies arise, further research can be devised to settle them. Gradually, a shared set of beliefs is developed that is considered scientifically accurate.

Science versus Vitalism

Science assumes that in order to develop a coherent body of knowledge, it is necessary to assume that supernatural powers do not exist or, if they do exist, they do not interfere. If such interference were possible, then all attempts at controlled experimentation would be either impossible or pointless.

Many "alternative" approaches are rooted in vitalism, the concept that bodily functions are due to a vital principle or "life force" distinct from the physical forces explainable by the laws of physics and chemistry and detectable by scientific instrumentation. Practitioners whose methods are based on vitalistic philosophy maintain that diseases should be treated by "stimulating the body's ability to heal itself" rather than by "treating symptoms." Homeopaths, for example, claim that illness is due to a disturbance of the body's "vital force," which they can correct with

special remedies, while many acupuncturists claim that disease is due to imbalance in the flow of "life energy" (*chi* or *Qi*), which they can balance by twirling needles in the skin. Many chiropractors claim to assist the body's "Innate Intelligence" by adjusting the patient's spine. Naturopaths speak of "Vis Medicatrix Naturae." Ayurvedic physicians refer to "prana." And so on. The "energies" postulated by vitalists cannot be measured by scientific methods.

Although vitalists often pretend to be scientific, they really reject the scientific method with its basic assumptions of material reality, mechanisms of cause and effect, and testability of hypotheses. They regard personal experience, subjective judgment, and emotional satisfaction as preferable to objectivity and hard evidence. Some "alternative" proponents are physicians who have strayed from scientific thought. The factors that motivate them can include delusional thinking, misinterpretation of personal experience, financial considerations, and pleasure derived from notoriety and/or patient adulation.

Overclaim and Puffery

"Alternative" promoters often claim that their approach promotes general health and is cost-effective against chronic health problems. In a recent article, for example, the American Holistic Association's president claimed that various "basic healthy habits" would "tap a well-spring of physical energy experienced as a state of relaxed vitality." [7] In addition to exercising, eating a nutritious diet, and getting sufficient sleep, the list includes abdominal breathing; taking "a full complement of antioxidants and supplements; and "enhancing the body's ability to receive and generate bioenergy" through regular acupuncture treatments, acupressure, healing touch, craniosacral therapy, qigong, and several other nonstandard modalities. As far as I know, there is no published evidence that "alternative" practitioners are more effective than mainstream physicians in persuading their patients to improve their lifestyle. Nor have any vitalistic approaches been proven effective or cost-effective against any disease.

National Council Against Health Fraud president William T. Jarvis, Ph.D., has noted: Some techniques referred to as "alternative" may be appropriately used as part of the art of patient care. Relaxation techniques and massage are examples. But procedures linked to belief systems that reject science itself have no place in responsible medicine. Useless procedures don't add to the outcome, just to the overhead.

Rosemary Jacobs, a consumer activist who operates a Web site that debunks colloidal silver, has made some penetrating observations with which I agree:

"Alternative therapy" is a marketing term that should not be permitted. All the public wants is safe, effective and efficient. They also want objective standards of measurement used to determine what is safe, effective and efficient. There is a general consensus as to what those standards are among scientists and rational

people for most therapies. In other words, for most diseases and conditions, experts know what works, what doesn't work, what is unknown and what falls into a gray area - - what may work but the jury is still out.

Anyone wanting to practice engineering or architecture has to abide by objective standards. I think that anyone who wants to practice medicine professionally should have to do so too. People who believe that personal experience is the best way to evaluate drugs and therapies should have to identify themselves as spiritualists or New Age religious practitioners but not as medical practitioners. They should be forced to admit to themselves and to the world that they reject science and objective standards, and they should never be allowed to sell the drugs they prescribe [8].

The NIH Debacle

Many news reports have exaggerated the significance of the National Institutes of Health (NIH)'s Office of Alternative Medicine (OAM). Creation of this office was spearheaded by promoters of questionable cancer therapies who wanted more attention paid to their methods. Most of OAM's advisory panel members have been promoters of "alternative" methods, and none of its publications have criticized any method. In 1994, the OAM's first director resigned, charging that political interference had hampered his ability to carry out OAM's mission in a scientific manner [9]. In 1998, Congress upgraded OAM into an NIH center with an annual budget of \$50 million. Today the agency is called the National Center for Complementary and Alternative Medicine (NCCAM) and has an annual budget exceeding \$100 million [10].

When OAM was created, I stated: "It remains to be seen whether such studies will yield useful results. Even if some do, their benefit is unlikely to outweigh the publicity bonanza given to questionable methods." In 2002, Wallace I. Sampson, M.D., editor of the Scientific Review of Alternative Medicine summed up what has happened:

It is time for Congress to defund the National Center for Complementary and Alternative Medicine. After ten years of existence and over \$200 million in expenditures, it has not proved effectiveness for any "alternative" method. It has added evidence of ineffectiveness of some methods that we knew did not work before NCCAM was formed. NCCAM proposals for 2002 and 2003 promise no more. Its major accomplishment has been to ensure the positions of medical school faculty who might become otherwise employed -- in more productive pursuits [10].

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(SOURCE: QUACKWATCH)