

CHAPTER VI: COMPLEMENTARY AND ALTERNATIVE MEDICINE AND AGING

Principles of Complementary and Alternative Medicine

A few of the slides I'm about to show will be familiar on purpose to you from prior talks and particularly, I'm sure, the opening talk that my colleague, Dr. Stephen Straus, the director of our center, gave at the very beginning of this symposium series. So this slide will be particularly familiar to you. In the National Center for Complementary and Alternative Medicine, my colleagues and I conceptualize the panoply, the myriad array of complementary and alternative medicine inputs that exist out there, now and over the last hundreds and sometimes even thousands of years, into 5 groupings. One of those groupings relates to the most commonly understood, and we're going to spend a lot of time focusing on that, and that's the biologically based systems. The most familiar to most people—herbs, botanicals, and dietary supplements. We're going to come back to that momentarily. But as we proceed clockwise around this wheel, you'll see manipulative and body-based systems, such as chiropractic or therapeutic massage as examples. Mind-body medicine, which my colleagues and I have retermed slightly to brain-body medicine, which is probably a better way of thinking about it in today's world of the brain. This includes many different things, including yoga, prayer (that is therapeutic spirituality, which has a real part in the manifestations and treatment of many illnesses), meditation, the biology of the placebo effect (very important in a variety of aspects of medicine as they impact, for example, on caring for patients with chronic pain or caring for patients with various psychological difficulties, such as a serious depression, for example).

Alternative medical systems, of which there are many, but include, as examples, homeopathy and naturopathy. The best known in the U.S. is probably traditional Chinese medicine popularized 3 decades ago when James Reston came back from a trip to China having had his appendectomy done under the then western new concept of acupuncture. Only in China had it been practiced for maybe 3,000 or 4,000 years. But it became the

new hot rage in the 1970s, as many of you may remember. Since that time, of course, acupuncture has actually entered the mainstream of many, but not all, facets of clinical medicine. In fact, just a few years ago, the National Institutes of Health had a consensus conference, which at that time summarized the evidence of where acupuncture may be useful, where it might be useful, and where at the moment it didn't seem to be useful and needed more research. Lastly, but perhaps by no means least, are energy-based therapies, including such things as a more traditional mainstream intervention, like magnet therapy, which is often used. In fact, there's an NIH trial going on right now in people with low back pain, one of the common afflictions of upright man or woman, particularly with advance in years, and how that might be useful—such things as Reiki and Qi gong.

Again, this slide you have seen too, but it'll set the stage for some that follow. Complementary and alternative medicine, or CAM, use in the U.S., is widely prevalent, more so in some groups than others. But in this very large survey in 1999, the National Health Survey, it was shown that in the year prior to that survey, namely 1998, of the 30,000 or nearly 31,000 adults who had been surveyed, 29%, almost 30% of them, had used one or more types of CAM therapy. Most of those people, as it turned out in that huge survey, the largest published to date in the U.S., were women and college graduates, that is, those with a better education rather than those with a less good education. Among the most commonly used therapies from that particular survey were herbals, chiropractic, and therapeutic massage. When you see massage, that refers to therapeutic massage. That same survey, and this slide you've seen also, showed that if you break it down into those 5 modalities that we've discussed, then mind-body or brain-body interventions, biologically based interventions, and body manipulative interventions were the 3 that were the most widely used, followed by alternative medical systems, and relatively few, at least in that survey—at least who would admit to it—would use energy-based. Today, several years later, those numbers may well change, particularly as things like Reiki become ever more popular.

Now this particular slide you probably haven't seen to date, in this series at least, because this comes from a very interesting study of women making the menopausal transition; the

perimenopause is a timeframe that we as endocrinologists refer to as those several years just before, during, and after a woman undergoes a natural menopausal transition. That's what we call the peri or surrounding menopausal years. One of the important aspects of this very large study, which is really worth paying attention to, is that we have data from women in different ethnic groups, as you can see. African-American women, Caucasian women, and women of Chinese, Hispanic, and Japanese ancestry. As you can see quickly, the groups differ substantially, with actually the very highest usages in Caucasian women and Japanese women, which look remarkably similar. These are Japanese-American women rather than Japanese women in Japan. This is a U.S.-based study. The most important points of this study are that 1) perimenopausal women use a lot of these modalities, and 2) there are substantial differences across ethnic groups.

Dietary supplements are very much in the news, and the Dietary Supplement Health and Education Act, or DSHEA, of 1994 put a big change in the way we think about dietary supplements. The first thing is to define them. As shown here, a product has to be intended to supplement the diet. Well, that doesn't surprise you, if it's a dietary supplement. It should also contain one or more of the following: vitamins; minerals; herbs or other botanicals; amino acids; or any other dietary substance. That covers a lot of terrain. For oral intake as a concentrate, you can see there are several others. With mainstream drugs, the U.S. Food and Drug Administration (FDA), which tightly regulates the influx of new pharmaceuticals to the public, has a rigorous standard of proof of efficacy and proof of safety. Here under the DSHEA, these are not categorized as drugs; these are categorized as dietary supplements as defined herein. The proof of their safety is not upon the manufacturer or the entrepreneurial group that purveys these items, but rather upon the FDA to prove, if it can, whether these are safe or not. It's a reverse of the onus, and that really has created some issues. So, in the next few slides, I'd like to talk about some of the issues that we consider of interest. First, let's talk about a National Health and Nutrition Examination Survey. There've been 3 major ones in the U.S., and we'll take the most recent one, actually there's a fourth. But this one, where the data were collected during a period from 1988 through 1994, surveyed use in a very large number of people cross-sectionally, socioeconomically, sociodemographically, cross-age groups,

cross-ethnic groups, cross-educational groups, and surveyed them for the month prior to the assessment. What I'm going to show you at the moment are data on vitamin and mineral use, because it's these uses that fall under that dietary supplement rubric. These questions were rather open-ended.

The first point, which is very clearly evident, is that over time, women use many more vitamins and minerals than do men throughout the age span, as you can see. There's never a time, at least in this huge national survey, when women don't outpace men in the use of these. But if you look carefully toward the later ages, let's say 50 and beyond, you get a sense that maybe there's not so much increasing use because if you actually look at the timeframe from the 20s to maybe 50, you get the sense that there is an upward usage both in men and women, with women using more than men. However, in this same survey, once you look at people by age decade from the 50s to over the 70s, you see that there really is no particular increase with age beyond the 50s, at least in this survey. Although women consistently use more vitamins and minerals, or report that they do, than is the case for men. So the conclusion of this really very influential survey, which looked at other health measures as well, is that demographic determinates of supplement use, that is, vitamin and mineral use, are what drives, or at least are the associative factors in, the use of these. They include gender, age, education, income, and lifestyle. There was clearly a higher use among women, as you saw. There was a general increase with age early on, but by the time people arrived in their 50s and 60s, it sort of leveled off, as you also noticed. It increased when people were more educated rather than less—that is, use increased. That's consistent with the whole CAM motif that I mentioned a few slides ago. It increased in those with higher rather than lower incomes— higher socioeconomic class, more informed, I guess. It increased in those with a healthy lifestyle, that is, nonsmokers, nondrinkers, exercisers, and so on. People who lived more healthy lifestyles tended to be those that used these more often.

So I'm very fond of quotes, as are my colleagues. I don't like to be cynical, but rather healthfully skeptical, which is different. So in this quote by Jean Moliere, which we've affixed to the context of biological research in CAM, we could say, if we were somewhat

skeptical, that “People can be induced to swallow anything provided it is sufficiently seasoned with praise.” You might think of all of the advertising that exists over the Internet and in the popular media: “Come to my supplement, it will do good things for you and prevent bad things from happening to you.” Whether that’s true or not is another story. We’re going to talk a little bit about that again.

On the other hand, or *au contraire*, is another way of thinking about all of this. Another quote that I’m particularly fond of by George Santayana: “Skepticism is the chastity of the intellect, and it’s shameful to surrender it too soon or to the first comer.” So what that means to me is that we should be healthfully skeptical and try to insist upon information that is reliable for things that we want to do to ourselves, particularly when we are empowered to do so many things for ourselves. We certainly want to do good things for ourselves, over and above mainstream inputs, but we want to have a sense that these things are really helpful, and in contrast, not hurtful.

So this hasn’t escaped the attention of our very Congress a few streets away, and actually, in 2001, there was a U.S. Senate Special Committee on Aging that looked at the hype and hope of marketing anti-aging products to our senior citizens. The questions that were asked in this survey were: is there evidence that anti-aging and alternative medicine products, particularly dietary supplements—what we’re focusing on in this particular conversation—aimed at conditions of aging, 1) cause physical harm to older people, and 2) cause economic harm to older people? Those were the questions. The corollary was what are the state and Federal oversight efforts to protect consumers—you and me. So, the consensus of this particular, very thoughtful survey, done under Congressional scrutiny as you saw and published on that Web site that you saw, was that there are a variety of health risks of product use. Some products have serious adverse effects, and sometimes the FDA has to give warnings and alerts. Witness ephedra and the death of the Baltimore Orioles 23-year-old, otherwise healthy, but somewhat overweight, pitcher, and numerous others not so highly visible to the public. There were contraindications to the use of some of these with pre-existing medical or other conditions that people had—medical in the broadest sense. There was concern that users of alternative therapies may

forego mainstream medical treatment that may be helpful to them in their zeal for alternative treatments. I'm sure Dr. Straus emphasized the difference between complementary and alternative. Complementary, to us, implies the use of one or more of these modalities and the schemas that we're talking about, in addition to the best of mainstream medicines or interventions for whatever your particular condition might be. Whereas alternative refers to using one or more of these modalities instead of mainstream or traditional or conventional therapeutic interventions. All the surveys show, at least in this country, that the vast majority of people want to use these modalities in a complementary fashion, that is, in addition to, not instead of. The reason for this is that people are wise. Everybody out there is wise. Why? Because people want to do the best for themselves. If they know that they're getting some benefit but not 100% benefit from whatever their mainstream treatment is for whatever their condition is, but they want to do even better, they don't reject what's helping them. They just try to add to it. That's a very intelligent thing to do, and in fact, it's what most people actually do.

Back in the risk column, there's also a tremendous issue of this concern, as we proverbially phrase it, of what's in the bottle— namely, our concerns about product quality. Is it what it says it is on the label? Is there contamination, or worse yet, nefarious adulteration? There is an example of that that, which we'll come to in a bit. In addition, are there variations in the amount of whatever the active ingredient or ingredients are? So that if it says it's 62.3% of X, in some surveys of X, the range has been 0% to 100%. Well, there aren't really good estimates, but the bottom line is that people spend a lot of money on these products and on other CAM modalities, and CAM, as you've heard from other speakers before me, is big business in this and other countries— huge business.