He doesn't have a medical degree or any certified medical training. His background includes time spent in prison for larceny and legal action taken against him twice by the FTC. He once sold a course that promised to boost people's memories, but this has largely been forgotten. So when he writes a book filled with preposterous medical advice, no works cited page and only vague references to scientific studies, is there really any reason to believe a word he says?

No, there is not.

Despite this logic, Kevin Trudeau’s *Natural Cures “They” Don’t Want You To Know About* has been hovering near the top of non-fiction bestseller lists for months, largely because of his infomercials that exploit a loophole in a previous FTC action banning him from selling products through television by advertising a book as an act of free speech. If Dan Brown is looking for material for his next conspiracy thriller, Kevin Trudeau’s view of the health care field would fit the bill nicely. His book portrays everyone from the pharmaceutical manufacturers to the FDA to physicians as involved in a shadowy conspiracy to make people sick so that they can profit off their misery. To stay happy and healthy, he offers such advice as: avoid prescription drugs and vaccinations, do not use sun block because it causes skin cancer, and wear white for more positive energy (ironically, the book’s cover shows him wearing a black shirt).

Trudeau’s advice may be highly questionable, as is the book being classified as non-fiction, but its sales show there is a strong interest in alternative medicine among the public. Even though Trudeau may be an extreme example, there are many people who like the idea of using “natural” supplements to get more control over their health. The products’ low prices and easy OTC availability can also make them more attractive in this era of ever-increasing co-pays, and their extravagant promises are much easier to understand than the esoteric mechanisms behind prescription treatments.

Unlike pharmaceuticals, though, there is no quality control for the nutritional supplement industry. The efficacy and safety of many supplements is unknown because the FDA does not require the manufacturers to submit evidence of an effect. The purity of each product also varies widely because manufacturers are left to develop and enforce their own guidelines, and many tests have found widely varied amounts of the active ingredient in different types of supplements; often, the amount did not even match what was printed on the label. Environmental contaminants can also enter into the production process and make the capsules of herbs or oils worse than a placebo. Even if a supplement contains its full amount of product and was manufactured safely, it can still present a threat by interacting with a patient’s pharmaceutical regimen. This all holds true for some of the herbal capsules as well as vitamins and minerals sold in supplement form.

**The Good, the Bad, and the Ugly of Alternative Medicine**

**While most OTC supplements have no effect and a few offer a modest benefit, many can interfere with prescription drugs. Here’s how to sort out the options and shield your patients from harm.**
Patients with intractable conditions are often likely to take dietary supplements out of desperation. They may be taking these to treat the symptoms of their condition or to hopefully forestall additional deterioration; in some cases, they do not even know what the supplement is for but consume it anyway. Clinicians may even encounter patients who take so many supplements they cannot readily recall all of them when asked during the patient history.

This situation makes it important for practitioners to have some knowledge about alternative therapy. Regardless of whether you are skeptical or curious about a complementary approach, you will likely have to field a lot of questions about how to help patients stay healthy and make sure they are not worsening their health while trying to improve it. It may also pay to be proactive and warn patients away from the supplements that are likely to interfere with their particular treatments before they get the prescription filled.

In this article, we’ll review some of the most common alternative medicines and look at which ones are good (can have some benefit), which ones are bad (proven to cause problems) and which ones are ugly (harmless but a waste of money).

**SUPPLEMENTS FOR SEIZURES**

There may be a wide array of AEDs for epilepsy patients, but there are countless complementary or alternative products that may seem attractive to a patient who is worried about his or her general health. However, there is no conclusive evidence that any can affect the condition or the symptoms commonly associated with it, including depression, anxiety, memory loss or fatigue. Ongoing research may reveal if there is a possibility for a new treatment or a new risk to be wary of, but at this point a neurologist’s best course of action may be to ask the patient what they’re taking and impart a warning about potential problems.

At the American Epilepsy Society’s 58th Annual Meeting in New Orleans, researchers from the University of California at San Francisco presented the results of a survey of 187 people with epilepsy or their caregivers and found that 56 percent used some sort of complementary or alternative medicine (CAM) product, but only 68 percent let their physicians know about it. Worse, almost 14 percent of the CAM users took something that could potentially increase seizure occurrence, such as ginseng, ginkgo or evening primrose. Almost an additional one-fifth of the users took products that could interfere with AEDs by changing the body’s metabolism, including St. John's wort, echinacea and garlic. Yet most of these patients only took the supplements to improve their general health, and only six said they used CAM specifically to improve their epilepsy or counteract side effects from AEDs.

The survey found the most common choice was vitamin/mineral supplements. While these do hold a place in a treatment regimen for reducing the adverse effects for AEDs (*i.e.*, folic acid for vitamin loss and to reduce the risk of birth defects for pregnant women, calcium and vitamin D for bone-thinning medications), patients should only take these in reasonably sized doses. It may be prudent to warn them about the dangers and lack of proven effect of megadoses.

Depression is of course another common problem, with many epilepsy patients suffering from some degree of this condition. The makers of St. John's wort supplements have long claimed that this herb has anti-depressant properties, although in a large-scale multicenter clinical trial it did not show benefit compared to placebo or Zoloft. It does not seem to have an effect on the immune system but it can possibly alter the body's metabolism, which may interfere with amitriptyline, nortriptyline, carbamazepine, phenobarbital, phenytoin and primidone along with other treatments commonly used for heart disease, seizure and depression.

One supplement that does hold some promise, however, is magnesium. In observational studies this has shown a modest benefit in controlling seizures and reducing pain from migraine or other conditions. At the very least, it is not harmful because it is not stored in the body. However, according to the National Migraine Association there is still no proof that magnesium deficiency is linked to migraine.

**MULTIPLE CLAIMS FOR MULTIPLE SCLEROSIS**

This mysterious and capricious condition is a source of frustration for concerned physicians who struggle to manage the symptoms and control relapses. When patients despair over how little evidence-based medicine can do for them, particularly when the symptoms such as depression, pain and urinary difficulty interfere with their quality of life, the “promises” offered by unproven alternative techniques become very attractive. According to BMJ 2006;332:525-527, as many as three out of four MS patients may use one or more complementary or alternative therapies, and some patients visit their alternative health practitioner more often than their regular doctor.

It may be helpful to consider an individual patient’s complaints in the context of his or her complementary medicine choices. Patients may be picking their alternative supplements to treat lingering symptoms instead of the condition as a whole, and knowing the claims for each supplement can help the practitioner give the patient correct information. For the most part the supplements are harmless, according to information compiled by the Complementary and Alternative Medicine Program of the Rocky Mountain MS center in Englewood, CO, but there are a few that should be noted.

For instance, someone with urinary problems—one of the most common complaints of MS patients—may consider cranberry supplements because there is some scientific evidence that these can prevent urinary tract infections. But the most common bladder problems for MS patients involve emptying dysfunction, and cranberry does not seem to offer any appreciable benefit in
this area. Vitamin C and bearberry (uva ursi) are also often touted as UTI preventives, but these should not be recommended to patients because high doses of vitamin C can interfere with urine tests and bearberry can cause nausea and vomiting.

Beyond herbs, there is a sliver of science supporting the notion of vitamins but hardly enough to bear the weight of megadoses. While higher than average intakes of vitamin D may reduce the risk of developing MS (Neurology 2004;63:939) there is no evidence that it can affect the course of an existing condition. There is no evidence that the antioxidant vitamins (beta-carotene, vitamin C and vitamin E) offer any benefit and they may theoretically be risky if they stimulate the immune system. The same is also true for minerals such as selenium and calcium. Patients who take these supplements may be better advised to seek the nutrients from a balanced diet so they can get the same nutrients on more appropriate doses and in a more digestible form.

AT WAR WITH WARFARIN

Warfarin may be the therapy of choice for patients at high risk for stroke, but it is also a very sensitive treatment in terms of interactions. Even an increase in foods containing vitamin K (such as liver, green leafy vegetables, broccoli and cauliflower) can affect this treatment’s properties (Annals of Internal Medicine 1994;121:676-683). Stroke patients on warfarin may especially benefit from a few caveats about dabbling in alternative medicine.

One of the easiest rules to impart to patients taking warfarin is to be wary of any herbs of supplements beginning with the letter “G,” especially garlic, ginger, ginkgo biloba and ginseng. Douglas S. Paauw, MD imparted this rule at the 2006 American College of Physicians meeting in Philadelphia. The reason, he said, is that garlic, ginger and ginkgo biloba all increase warfarin’s anticoagulation properties while ginseng decreases it. And although no scientific effect is proven, German chamomile can theoretically enhance blood thinning so physicians may want to include this with the warning.

The patient should also be told about the possible problems that can come from vitamins, especially vitamins K and E. Many other supplements, including vitamin C, coenzyme Q10, and omega-3 fatty acids, have the potential to interfere with warfarin and should be avoided.

PAIN DAMPENERS

Hardcore skeptics may dismiss it as the power of the placebo effect, but herbal and alternative treatments have fared rather well in studies for pain-related conditions. Patients are likely to see news about these developments in the mainstream media, but before they buy a supplement they should keep in mind how little oversight there is in the industry. Physicians should also be aware of the nuances of the recent data and how these distance the substance from the supplements.

When headache specialist Richard B. Lipton, MD reported the results of a study comparing petasites hybridus root (butterbur) to placebo and showed the herb may be effective in preventing migraine and was generally well tolerated (Neurology 2004;63:2240-2244), the mainstream media parroted the news of how an herb could help migraine patients. However, not many added that butterbur is potentially toxic if not properly prepared; those who did mention it did so near the end of the story. And since this supplement is sold in a wide range of doses and patients are generally ill-informed of dose-dependent effects, it is hard to tell if self-medicating patients receive the proper amount to obtain any benefit.

Coenzyme Q10 also seemed to be more effective than placebo in migraine prophylaxis in a study of 42 patients (Neurology 2005;64:713-715). However, subjects in that study received a liq-
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uid form of the supplement that is not equivalent to anything available in American pharmacies. Therefore, patients should be warned that what is used lab tests may not be the same as what they can buy. Even if such supplements ultimately prove helpful, they are still not a substitute for regular prescription treatment.

**PD, AD, Q10 and Vitamin E**
A diagnosis of a neurodegenerative condition often carries the weight of a death sentence to patients and caregivers. The stigma associated with these conditions can make people desperate enough for a cure or preventive treatment that they ignore the dearth of data supporting OTC therapies. This is not to say that there is no scientific research, as the possibility of more treatments for these conditions is an attractive one, but rather that there is no proof of any benefit.

For instance, coenzyme Q10 is often touted for its properties as a method of promoting energy at a cellular level. One small placebo-controlled study reported in *Arch Neurol 2002;59:1541-1550* found it could possibly slow the rate of decline of mental and motor functions, particularly at 1200mg/day, and the results inspired a larger study. However, it has not been studied for Alzheimer's, so the benefit for this condition remains elusive. Overall, though, it seems to have few contraindications or adverse effects and is generally well tolerated. (*Am Fam Physician 2005;72:1065-70*) It may also be helpful in slowing functional decline (*Arch Neurol 2002;59:1541-1550*) although this has yet to be confirmed in a large study.

In contrast, coral calcium has been shown to have no appreciable benefit for Alzheimer's or Parkinson's, despite what patients may have heard on infomercials. In June 2003 the FTC and the FDA charged the marketers (including Kevin Trudeau) behind the ads for a particular brand of coral calcium supplement with making claims that go far beyond scientific evidence.

While vitamin E is often touted as a preventive measure for Alzheimer's, its role in treatment is unclear. Its efficacy was first suggested in a cooperative study reported in *NEJM 1997;336:1245-1247*, which indicated that it can delay progression of the disease when combined with selegiline. However, these results have not been confirmed by other studies and the dose needed for a benefit is still unknown, and recent studies have suggested it may potentially increase the risk of heart failure in patients with vascular disease.

Vitamin E has also been speculated to reduce the risk of developing Alzheimer's, but those at particularly high risk may want to add some vitamin C and ibuprofen to their regimen. In one of the more recent studies, researchers at Johns Hopkins University revealed at this year's AAN conference in San Diego that patients who regularly consumed all three agents suffered less cognitive decline than those who took only one or two or none at all. When mild cognitive impairment begins, though, vitamin E has been proven to be no more effective than placebo in slowing Alzheimer's progression (*NEJM 2005;352:2379-2388*). A meta-analysis reported in *Lancet Neurology 2005;4:362-365* suggests that a supplement rich in vitamin E can help prevent the onset of Parkinson's.

**FOR MORE INFORMATION**

The Alzheimer's Association, [www.alz.org/aboutad/treatment/alternative.asp](http://www.alz.org/aboutad/treatment/alternative.asp). The AA has a list of the most common alternative treatments for this condition and a summary of the data behind each.


The National MS Society, [www.nationalmssociety.org/spotlight-cam.asp](http://www.nationalmssociety.org/spotlight-cam.asp). The NMSS has a list of many of the most common questions patients may have about alternative and complementary therapies along with answers backed by credible research.

The Rocky Mountain MS Center, [www.ms-cam.org](http://www.ms-cam.org). For a $15 donation, patients and practitioners can use this site's extensive database of CAM and MS to review existing data about a wide array of supplements and treatments.

The University of Maryland Medical Center, [www.um.edu/altmed/index.html](http://www.um.edu/altmed/index.html). This site offers free comprehensive information about pharmaceutical treatments and alternative medicines with cross-referenced links about possible interactions in a patient-friendly format.

**Bridging the Gap**
It's only natural (no pun intended) that some patients would prefer the holistic approach championed by someone like Andrew Weil over a trip to the pharmacist to hear about the laundry list of nasty side effects their prescription medicine poses. Neurologists need to recognize and accept this desire and work within it rather than be categorically dismissive of it. A neurologist already has a host of pharmacological treatments to consider when evaluating a patient's symptoms, and the popularity of alternative medicine adds even more complexity to an already challenging field. But amid all the promotion and dubious infomercials, there are resources that offer accurate and credible information about these treatments (see sidebar at left).

Practitioners who frequently find themselves hearing about new dietary supplements or would like to broaden their knowledge of them may want to get in touch with their local academic medical center. Working with an integrative facility can help sort out what is harmful from what is harmless, and which marketing claims do have a kernel of truth behind them. This can give patients the information they should know about and help them take better control of their health. *PN*