



# The herbal medicine boom: Understanding what patients are taking

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**I**F PHYSICIANS WERE TO ASK every patient if he or she is taking herbal medications, one in three would answer yes, according to a 1993 survey.<sup>1</sup> Sales of herbal medicines are booming, totaling \$2.5 billion in 1996 and growing 25% per year.<sup>2</sup>

Unfortunately, the herbal medicine industry is not sufficiently regulated to guarantee that an herbal preparation is safe for consumption. Although some herbal preparations, such as homeopathic remedies, contain no active ingredients at all, others contain substances that do produce effects—including adverse reactions and interactions with prescription drugs. Claims of efficacy are unsubstantiated, based mostly on anecdotal evidence. Worse, there is frequently no way to ascertain exactly what an herbal preparation contains, as labeling is often inadequate or inaccurate, and some manufacturers continue to use potentially dangerous herbs.

Obtaining information about the effects of herbal medications is difficult. Herbs often have several different names, and herbs with similar or even identical names sometimes belong to different species entirely. There is no regulation of the purity of the substances, and no standardization of dosages. They are sold over-the-counter with no instructions as to possible side effects or interactions.

## ■ WHY DO PEOPLE TAKE HERBAL MEDICINES?

There may be a number of explanations, from a failure to understand the scientific process<sup>3</sup> to skepticism about modern medicine. Among factors that may be at work:

**Fear or distrust of physicians.** One pamphlet touts “health secrets your doctor doesn’t want you to know,” and hints that physicians and pharmaceutical companies are conspiring to suppress information about unconventional therapies.

**“Natural is better.”** Popular mythology holds that allopathic medicine is unnatural and therefore bad, while herbal cures are natural and therefore good. Natural cures help one “build resistance” to disease, according to this thinking.

**Disappointment with allopathic care.** Many persons who seek alternative therapies have chronic conditions for which there is no effective cure; they often use herbal preparations as an adjunct to allopathic therapies. For such persons, taking an herbal medication is a way of helping themselves while exerting more control over their own health care.

**Other influences.** Some cultures have a tradition of using herbal medicine. Other people may be swayed by false advertising, word-of-mouth, and peer influences prevalent in their society.

## ■ WHAT PRODUCTS DO PEOPLE TAKE?

Data compiled from manufacturers indicate that ginseng accounts for 20% of herbal medications taken, garlic preparations for 18%, ginkgo for 10%, melatonin (which is not an herb) for 19%, and all others for 33%.<sup>4-6</sup> However, hundreds of substances are available, and many products contain multiple substances.

The following section lists some common herbal medications, their reputed effects, and what is known about possible side effects and drug interactions.

If a physician has questions about an unfamiliar herbal medicine, he or she should call a local drug information center, the FDA consumer hotline (800-FDA-4010), or the National Institutes of Health Office of Alternative Medicine (888-644-6226). The *Lawrence Review of Natural Products*, published by Facts and Comparisons in St. Louis, Missouri, is a reliable reference of herbal medicines’ known therapeutic and adverse effects.

**In the world of herbal medicine, let the buyer beware**

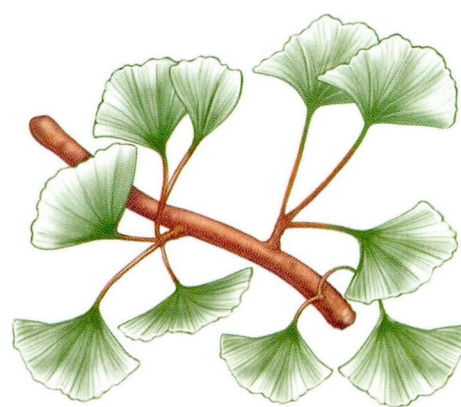




**Ginseng**  
(*Panax schinseng*)



**Garlic**  
(*Allium sativum*)



**Ginkgo**  
(*Ginkgo biloba*, maidenhair)

**Ginseng** is sold as an “adaptogen” to “normalize” the body and build resistance to stress, and also as an aphrodisiac. However, its effectiveness is not adequately documented. It may lower total and low-density lipoprotein (LDL) cholesterol levels. Some ingredients raise blood pressure, and some lower it.<sup>7</sup> Complicating the issue: there are eight species of ginseng, and one of them—Siberian ginseng—is completely different from the others. These issues may be moot for some products labeled as ginseng: one study looked at 10 “ginseng” products and found that seven contained no ginseng at all.<sup>8</sup> A study from the late 1970s analyzed 54 ginseng products; of these, 60% contained less than the therapeutically effective levels, and an astounding 20% contained no active ingredient.<sup>9</sup>

**Precautions and interactions.** Nervousness and excitation can occur for the first few days of intake. Overuse can cause headache, insomnia, and palpitations. Patients with hypertension should be cautious of ginseng because of its unpredictable effect on blood pressure. One case<sup>10</sup> has been reported of an interaction between ginseng and furosemide (decreased diuretic effect probably caused by germanium contamination), which resulted in hospitalization. Estrogenic effects have caused vaginal bleeding and mastalgia; patients should not take ginseng with hormonal therapy in light of cases of uterine bleeding.<sup>11–13</sup> Patients should be discouraged from using ginseng long-term (more than 3 months).

**Garlic** reduces total and LDL cholesterol and triglycerides and raises HDL. It may have antibacterial, antifungal, antithrombotic, hypotensive, hypoglycemic, antihyperlipidemic, anti-inflammatory, and anticancer activity.<sup>14</sup>

**Precautions and interactions.** Garlic has been shown to inhibit platelet aggregation and therefore may interact with anticoagulants. It reduces blood sugar, and may therefore affect glucose control. Rarely, it causes allergic reactions.<sup>15</sup>

**Ginkgo** has been used in China since ancient times.<sup>16,17</sup> It dilates arteries, capillaries, and veins, and has been shown to have significant beneficial effects on cognitive function, enhance various CNS functions such as short-term memory, concentration, and alertness,<sup>18</sup> and improve cognition in Alzheimer’s disease.<sup>19</sup> There are data in animals that ginkgo protects against cerebral ischemic damage, and may enhance blood flow to the brain.<sup>20,21</sup> People are also using it to treat varicosity, cerebral vascular insufficiency, dementia, tinnitus,<sup>22</sup> vertigo, and sexual dysfunction induced by selective serotonin reuptake inhibitors.

**Precautions and interactions.** Ginkgolide is a selective antagonist of platelet aggregation. A few case reports of bilateral subdural hematomas have been reported. These cases were all linked with prolonged use of this herbal remedy (longer than 2 years).<sup>23</sup> It may cause minor GI disturbances. Rarely, ginkgo causes headache, dizziness, or vertigo.<sup>24</sup>

**For questions  
about herbal  
products, call  
the NIH Office  
of Alternative  
Medicine at  
(888) 644-6226**





**Echinacea**  
(*Echinacea angustifolia*, purple coneflower)

**Echinacea**, also known as purple coneflower and snakeroot, has been promoted for preventing cold and flu symptoms. Although its mechanism of immune stimulation is unknown, it may work by stimulating the production of phagocytes.<sup>25</sup>

**Precautions and interactions.** This herb may cause immunosuppression with continuous use (6 to 8 weeks).<sup>26</sup> It is contraindicated in patients with autoimmune diseases.

**Ma huang** (*Ephedra sinica* and others). More than 40 species of *Ephedra* are known, some of which contain alkaloids including ephedrine and pseudoephedrine. It is used in asthma and to treat colds. It is used alone and in combination with St. John's wort in weight-loss products, although it has not been shown to be safe or effective for this purpose.

**Precautions and interactions** are similar to those for ephedrine and pseudoephedrine. Doses used in herbal weight-loss products and herbal cold preparations containing ma huang are typically excessive, and the range of side effects is unpredictable. Patients are strongly discouraged from taking any herbal remedy containing this herb.

**Saw Palmetto** is widely used in Europe to treat benign prostatic hyperplasia (BPH). In fact, up to 90% of patients with BPH in Europe take herbal medications, and 50% of European urologists prefer herbs to alpha blockers.



**Saw Palmetto**  
(*Serenoa repens*)

Lipid extracts of saw palmetto contain fatty acids and sterols that have antiandrogenic activity in vitro. However, human studies have been inconclusive. These studies also used very high doses of the extracts; therefore, the levels of active ingredient may be excessive in humans.<sup>27</sup>

**Precautions and interactions.** Side effects are minimal. Saw Palmetto may, in theory, have a synergistic effect with the hormonal therapy used in BPH.

**St. John's wort** is pharmacologically similar to monoamine oxidase inhibitors, and is used as an antidepressant and to treat menopausal and premenstrual symptoms. The FDA lists it as a new investigational agent (it was previously listed as unsafe). Several small studies found St. John's wort to be more effective than placebo for treating mild to moderate depression.<sup>28</sup>

**Precautions and interactions.** To avoid the risk of a hypertensive crisis, patients taking St. John's wort should observe the same precautions as with the monoamine oxidase inhibitors, avoiding not only foods that contain tyramine (eg, aged meats and cheese), but also sympathetic amines (eg, amphetamine, phenylpropanolamine, pseudoephedrine). In addition, serotonergic agents (ie, selective serotonin reuptake inhibitors such as fluoxetine, venlafaxine, nefazodone, buspirone, trazodone; some tricyclic antidepressants; lithium; meperidine; and dextromethorphan)

**Always ask if the patient is taking any herbal medicines**





**St. John's wort**  
(*Hypericum perforatum*)



**Valerian**  
(*Valeriana officinalis*)

should be avoided to minimize the risk of serotonin syndrome. Serotonin syndrome is characterized by confusion, shivering, agitation, fever, diaphoresis, diarrhea, myoclonus, hyperreflexia, and tremor. However, no study of systemic interactions with drugs or food has been conducted.

Phototoxicity has occurred in animals grazing on the plant, but is unlikely within therapeutic doses. In addition, some orthostatic hypotension has been reported.<sup>29</sup>

Valerian has sedative and hypnotic effects.

**Precautions and interactions.** Cases of severe liver damage have been reported.<sup>30</sup> Valerian can cause morning drowsiness, ataxia, and fatigue. Cytotoxic activity has raised concern about long-term use. It is not synergistic with alcohol, but has not been studied with opiates or other central nervous system depressants.

**Yohimbe (*Corynanthe johimbe*).** A sympatholytic and mydriatic, yohimbe is available both as a prescription drug and as an herbal product. It is used to treat male erectile dysfunction.

**Precautions and interactions.** Yohimbe has a high risk-to-benefit ratio. It can cause central nervous system stimulation, hypotension or hypertension, tachycardia, nausea, vomiting, and psychoses. It may have monoamine oxidase inhibitory activity, and may interact with antidepressants. This prod-

uct should be used only under the supervision of a physician. Only the prescription product should be used, as herbal doses may be excessive. It is contraindicated in patients with renal insufficiency.

#### ■ HERBAL MEDICINE SHOULD BE REGULATED

Federal drug laws govern prescription and over-the-counter drugs but exclude herbal preparations, which cannot be patented. The Dietary Supplement Health and Education (DSHE) Act of 1994 defines herbal medications as dietary supplements, and therefore these supplements are treated more like foods than drugs. In fact, a can of tomato sauce is subject to more scrutiny than are herbal medications. Under the law, packages of herbal remedies must carry the disclaimer: "This product has not been evaluated by the FDA and is not intended to diagnose, treat, cure or prevent any disease." In other words, let the buyer beware.

Further, there is no restriction on placing pamphlets, books, and posters in proximity to the products, and these often carry biased, misleading, and false information. When herbal products, which undergo no testing or inspection, are displayed for sale in licensed pharmacies, adjacent to products that are rigorously tested, they gain an aura of respectability by association. Consumers may be misled into believing they are purchasing something that has been proven safe and effective.

**Observe  
the same  
precautions  
with  
St. John's wort  
as with MAO  
inhibitors**




**TABLE 1** ADVICE ON HERBAL MEDICINES

### Common-sense advice to patients about herbal medicines

If you are ill, see a doctor or other health care professional.  
Do not take herbs if you are pregnant or attempting to become pregnant.  
Do not take herbs if you are nursing.  
Do not give herbs to a baby.  
Do not take large quantities of any one herbal preparation.  
Do not take any herb on a daily basis.  
Buy only preparations in which the plants are listed on the packet.  
(Note: there is no guarantee attached to any herbal product.)  
Do not take herbal medicines if you have allergies to plants.  
Always tell your doctor about any herbal remedy or alternative medicine you may be taking.

ADAPTED FROM HUXTABLE RJ. THE HARMFUL POTENTIAL OF HERBAL AND OTHER PLANT PRODUCTS. DRUG SAFETY 1990; 5(SUPPL 1):126-136.

We need a better system to protect the public. For starters, the names of substances need to be standardized, as do the formulations and doses. Some regulatory body should be given the power to truly regulate herbal drugs, requiring manufacturers to ensure the standardization, purity, and consistency of manufacture of all herbal preparations.

As part of implementing the DSHE Act of 1994, a commission composed of leaders in the field of herbal medicines has been created. The primary goal of this commission is to reform labelling laws and provide additional needed information regarding these remedies, particularly for the public. In addition, the manufacturing practices of these manufacturers of dietary supplements will be analyzed. The Commission report is scheduled to be published this year.

In the meantime, health-care providers should ask patients if they are taking herbal medicine and should be prepared to offer common-sense advice (TABLE 1).

Physicians should report adverse events due to herbal medications to the FDA (800-FDA-1088), just as with other medications.

### REFERENCES

- Eisenberg DM, Kessler RC, Foster C, et al. Unconventional medicine in the United States. Prevalence, costs, and patterns of use. *N Engl J Med* 1993; 328:246-252.
- Grauds C. Botanicals: Strong medicine for health and profit. *The Source. Association of Natural Medicine Pharmacists*, 1997; 3(1).
- Sagan C. The demon-haunted world. Science as a candle in the dark. New York: Random House, 1996.
- A.C. Nielsen Surveys. (Prepared for Pharmaton Natural health Products Division) January 1997.
- Foster S. Ginseng plays big part in driving growth of homeopathic medicine. *Chain Drug Review* Nov 21 1994; 16:22.
- Brevoort P. The U.S. botanical market—an overview. *HerbalGram* 1996; 36:49-51.
- Hammond TG, Whitworth JA. Adverse reactions to ginseng (letter). *Med J Aust* 1981; 1:492.
- Herbal roulette. *Consumer Reports*. November 1995.
- Ziglar W. The Ziglar report: an analysis of 54 ginseng products. *Whole Foods* 1979; 2(4):48-53.
- Becker BN, Greene J, Evanson J, et al. Ginseng-induced diuretic resistance (letter). *JAMA* 1996; 276:606-607.
- Greenspan EM. Ginseng and vaginal bleeding (letter). *JAMA* 1983; 249:2018.
- Palmer BV, Montgomery A, Montero J. Ginseng and mastalgia (letter). *Br Med J* 1978; 1:1284.
- Punnonen R, Lukola A. Oestrogen-like effect of ginseng. *Br Med J* 1980; 281:1110.
- Gray MA. Herbs: Multicultural folk medicines. *Orthopedic Nursing* 1996 15(2):49-57.
- Garlic. The Lawrence Review of Natural Products. St. Louis: Facts and Comparisons, April 1991.
- Heinerman J. Heinerman's Encyclopedia of Healing Herbs and Spices. West Nyack, NY: Parker Publishing Co, 1996:255-257.
- Morris J, Burke V, Mori TA, et al. Effects of garlic extract on platelet aggregation: A randomized placebo-controlled double-blind study. *Clin Exp Pharmacol Physiol* 1995; 22:414-417.
- Kleijnen J, Knipschild P. Ginkgo biloba for cerebral insufficiency. *Br J Clin Pharm* 1992; 34:352-358.
- LeBars PL, Katz MM, Berman N, et al. A placebo-controlled, double-blind, randomized trial of an extract of Ginkgo biloba for dementia. *JAMA* 1997; 278:1327-1332.
- Ramassamy C, Clostre F, Christien Y, et al. Prevention by a Ginkgo biloba extract (GBE 761) of the dopaminergic neurotoxicity of MPTP. *J Pharm Pharmacol* 1990; 42:785-789.
- Kleijnen J, Knipschild P. Ginkgo biloba. *Lancet* 1992; 340:1136-1139.
- Holgers KM, Axelsson A, Pringle I. Ginkgo biloba extract for treatment of tinnitus. *Audiology* 1994; 33(2):85-92.
- Rowin J, Lewis SL. Spontaneous bilateral subdural hematomas associated with chronic Ginkgo biloba ingestion. *Neurology* 1996; 46:1775-1776.
- Gilbert GJ. Ginkgo biloba (letter). *Neurology* 1997; 48:1137.
- Hobbs C. Echinacea: a literature review. *HerbalGram* 1994; 20:33-48.
- Echinacea. The Lawrence Review of Natural Products. St. Louis: Facts and Comparisons, December 1996.
- Lowe FC, Ku JC. Phytotherapy in treatment of benign prostatic hyperplasia: a critical review. *Urology* 1996; 48:12-20.
- Linde K, Ramirez G, Mulrow CD, et al. St. John's wort for depression—an overview and meta-analysis of randomized clinical trials. *Br Med J* 1996; 313:253-258.
- Wincor MZ, Gutierrez MA. St. John's wort and the treatment of depression. *U.S. Pharmacist* 1997 (August):88-97.
- MacGregor FB, Abernethy VE, Dahabra S, et al. Hepatotoxicity of herbal remedies. *Br Med J* 1989; 299:1156-1157.