



HERBAL MEDICINE 101: THE GOOD, THE BAD & THE UGLY

Leader's Guide

Note: This Leader's Guide is a comprehensive lesson plan to be utilized with the factsheet, *Herbal Remedies—Therapeutic or Fraudulent?* (FN-SSB.084, Revised August, 1999).

Pick and choose and revise what you can use in presenting your lesson. Overheads and the exhibit, *Dietary Supplements: Boosters or Busters*, are also available as supplemental materials.

Introduction

So, you want to use herbs to treat your cold, insomnia, depression, or migraine but you really don't know much about them. The ads promise wonders. Your common sense urges caution. How do you start? Maybe you shouldn't. Today, we'll discuss the hot topic of herbal medicine: the good, the bad and the ugly.

The World Health Organization estimates that 80 percent of the planet's population uses plants to produce a desired effect on the body. Herbalism is an integral part of traditional Asian, Native American, homeopathic, and naturopathic medicines, and European physicians rely heavily on herbal products.

Although conventional medicine in the U.S. has shifted away from the use of unrefined herbs to drugs that have been designed and developed in a laboratory, approximately 25 percent of prescription drugs sold today are derived from plants. Aspirin has its origins in willow bark; digitalis, the heart-muscle strengthener, is derived from foxglove; taxol, used in cancer chemotherapy, hails from the Pacific yew tree.

The Dietary Supplement & Health Education Act

Traditionally, dietary supplements are products made of one or more of the essential nutrients, such as vitamins, minerals and protein. They fell under the 1958 Food Additive Amendments to the Federal Food, Drug and Cosmetic Act. In 1990, The Nutrition Labeling and Education Act added herbs or other botanicals to the term dietary supplement.

The Dietary Supplement and Health Education Act of 1994 was enacted to establish a new framework for assuring safety, including guidelines for use of claims, ingredient and nutrition labeling, and the establishment of good manufacturing practice (GMP) regulations. A new Commission of Dietary Supplement Labels and an Office of Dietary Supplements (ODS) will be formed within the National Institutes of Health (NIH) as part of the new. ODS has developed **The International Bibliographic Information on Dietary Supplements (IBIDS)**. IBIDS is a database of scientific literature on dietary supplements. Visit <http://odp.od.nih.gov/ods/databases/ibids.html> for more information.

The new ruling does clarify some of the claims allowed on these products. Dietary supplements claiming *high potency* for nutrients will have to contain at least 100% of the daily value for that nutrient. Antioxidant claims are also being regulated. A product claiming to be a *good source* of antioxidants must have at least 10% of the daily value of one or more established antioxidants. Only vitamins C and E and beta-carotene have recommended daily amounts.

FDA & FTC

There are differences between herbal supplements and FDA-approved medications. A specific drug may be derived from plants and is intended to diagnose, cure, mitigate, treat or prevent diseases. Before marketing, drugs must undergo clinical studies. The clinical studies must meet strict

teria and determine a drug's effectiveness, safety, interaction possibilities and appropriate dosages. FDA then reviews the data and authorizes a drug's use before it is marketed.

Since FDA views dietary supplements as food, dietary supplement manufacturers simply ensure that the products they put on the market are safe. But FDA does not review or approve supplement ingredients or products before marketing. Once marketed it is up to FDA to prove the dietary supplement is unsafe before it can restrict the product's use. Herbs also often contain an array of chemicals whose concentration will vary depending on the genetics of the plants, growing conditions, plant parts used, harvest time, preparation and storage. A product sold as a dietary supplement that is labeled as a treatment or cure for a specific disease or condition would be considered an illegal drug. FDA oversees safety, manufacturing and product information, while the FTC regulates the advertising of dietary supplements.

Consumer Report Comparison

An example of the variation sometimes seen in the concentration of active ingredients is shown in a chart done by *Consumer Reports* in November, 1995. Ten brands of ginseng were tested for the concentration of total ginsenoside which is supposedly the active ingredient of ginseng. The percentage of ginsenosides ranged from less than 1 percent to closer to 8 percent, even though the mg of ginsenosides per capsule were labeled on the bottle. Comparisons in recent years have shown similar conflicting results.

Definition of Herbs

Herbs are categorized and defined differently by several disciplines. Culinary professionals think of herbs as vegetable products that add flavor or aroma to food. Botanists restrict the meaning of herbs to non-woody, seed-producing plants that grow, then die, during repeating growing seasons. Medically, herbs are most accurately defined as crude drugs of vegetable origin utilized for the treatment of disease states, often of a chronic nature, or to attain or maintain a condition of improved health. The primary concern regarding the use of herbals is that people self-medicate rather than seek traditional therapy from a physician.

Herbal Supplement Use

A number of studies have shown that certain herbs may help people with conditions ranging from headaches to high cholesterol. But if you decide you want to give herbal medicine a try, you face a formidable obstacle. There is no guarantee that the pills are what they say they are, and in most cases no one really knows what will happen if you take them. You may have no way to be sure...whether a plant's active ingredients actually ended up in the herbal pills you buy; whether a supplement's ingredients are in a form your body can use; whether the dosage makes any sense; what else is in the pills; whether the pills are safe; and whether the next bottle of those same pills will have the same ingredients. The manufacturer may not know this information either because they are not required to do the testing or quality control that are standard protocol for regular drugs.

Recommended Resources

Before trying an herbal supplement, consider changes to your diet or lifestyle that might accomplish your goals.

But if you choose to use an herbal supplement, learn all you can about it from the most reliable sources you can find. Determining whether or not a product may be useful for a given condition is best done by consulting the scientific herbal literature, such as available through IBIDS.

Medical doctors and other healthcare professionals, such as registered pharmacists, registered dietitians and nutritionists, may also be a reliable source about herbals.

Recommendations

Check with your doctor before taking any supplement so you can be monitored by a qualified practitioner, if necessary. Pregnant women, nursing women, the chronically ill, people under 18 or persons taking prescription or over-the-counter medications should not take herbal supplements unless their doctor gives them the green light to do so.

Read labels carefully. Buy herbs that at least claim to be standardized. Check that both the quantity of the extract per dose and the concentration of one or more active ingredients are stated. Buy these standardized extracts of herbs

from a reliable producer that has a reasonably fast stock turnover of about 3 to 6 months.

Stick to single-herb products, not combinations, whose actions might be hard to sort out. Check the warnings on packages and on related material. Be alert to the herb's effects, both positive and negative. Begin with small doses.

If you experience any unusual symptoms, allergies, rashes or other problems, stop taking the product at once. The FDA advises you to contact your doctor, who should then call the agency's MedWatch hotline for professionals, to report adverse effects. The number is 1-800-FDA-1080. The MedWatch website is <http://www.fda.gov/medwatch/report/consumer/consumer.htm>

The agency also suggests contacting your state and local health departments and consumer protection agency.

Herbs Which Merit Further Study

Medicinal plants typically contain many compounds, and it's unclear whether individual chemicals or a combination have the desired therapeutic effect. Let's discuss some herbs for which there is strong evidence of beneficial physiological effects and which merit clinical study. **This is not a recommendation that you buy or use any of these products. No herb should be a substitute for established disease therapy.**

Chamomile...used for indigestion. The tea may suppress muscle spasms, reduce inflammation of the digestive tract and relieve menstrual cramps. Chamomile oil or ointment may be applied topically as an anti-inflammatory for skin and mucous membrane problems. Because a volatile oil is mainly responsible, the tea must be made from fresh herb (fresh smells like apples; old like hay) and steeped long enough to release the oil. Those allergic to ragweed or flowers in the daisy family could suffer reactions.

Echinacea...used as an immunity booster. Also in the daisy family, a few controlled trials suggest it can increase resistance to upper respiratory infections. Benefits may be lost with continued use. Those allergic to the sunflower family may suffer reactions. Those diagnosed with autoimmune disorders should not take.

Feverfew...used for migraine headache.

Chewing the leaves is a folk remedy, but may cause mouth sores. A British study has suggested that feverfew taken daily can reduce occurrence of migraine attacks by one-fourth.

Garlic...used for high cholesterol. Several studies have shown that one-half to one clove daily could lower cholesterol an average of 9%, but it may not work for all people. Enteric-coated pills that dissolve in the intestines cut odor and improve the absorption of allicin, which appears to be the key ingredient. Too much garlic can hinder blood clotting, so individuals on anticoagulants should be wary.

Ginger...used for nausea. Research shows that taking ginger before traveling can prevent motion sickness and appears to quell other nausea as well. No side effects have been noted with therapeutic dosages, but there's the potential to inhibit clotting.

Ginkgo biloba...used for circulation. A review of several published studies shows the herb supposedly can improve concentration and memory, absent-mindedness, headaches and tinnitus. Further research is being conducted using Ginkgo biloba to combat Alzheimer's disease. It may also aid circulation to the legs, relieving painful cramps.

Ginseng...improves circulation.. Although heavily promoted in the United States, ginseng, the root of the Chinese shrub, has been studied more extensively in Asia. Many of the investigations indicate that ginseng and related plants contain compounds called saponins that interact with neurotransmitter-chemicals that carry messages between nerve endings and brain cells-and thus may help to modify the effects of stress. Scientists have failed to find supporting evidence for claims that the compound is an aphrodisiac or that it mimics the effects of estrogen. The most commonly reported side effects are insomnia and nausea, which seemingly occur only at very high doses.

Hawthorn...used for heart disease. Substances in the fruit, leaves and flowers dilate blood vessels and lower blood pressure. **It should not be used without consulting a doctor.**

Milk thistle...used for liver damage. The hard fruits have been shown to protect the liver against a variety of toxins. **It should not be used without consulting a doctor.**

Saw palmetto...*used for enlarged prostate.* Studies suggest the extract can improve urinary flow in men with benign prostate enlargement. It also shows anti-inflammatory effects. It slows the conversion of testosterone into a more active form that enlarges the prostate gland.

Tea-tree oil...antiseptic. Pressed from the leaves of a tropical tree, tea-tree oil has been used for centuries as a topical antiseptic by the people of the South Sea Islands. The principal active ingredient of the oil kills many types of bacteria. Clinical studies have indicated that it may be effective in treating acne and skin and vaginal infections. Its long history has yielded little evidence of side effects.

St. John's Wort...*used for mild to moderate depression.* Studies suggest the herb has some benefit in those with mild to moderate depression without the common side effects of anti-depressant prescription medications. Hypericin, appears to be the active ingredient. Benefits may be lost with continued use. **Restriction** of sun exposure and the adoption of an MAOI diet are recommended during therapy. An MAOI diet restricts the consumption of foods that contain tyramine, commonly found in fermented foods.

Herbs That Can Harm

The Food and Drug Administration has identified a number of herbs that can cause serious harm. Some, including these five, are still being sold under various brand names.

Chaparral is sold as tea, and in tablet and capsule form. It is promoted as a blood purifier, cancer cure, acne treatment and natural antioxidant. It has caused numerous cases of nonviral hepatitis,

with one patient requiring a transplant. It is sometimes an ingredient in combination-herb formulas.

Comfrey is sold as tea, tincture, poultice, lotion and in tablet and capsule form. Comfrey taken orally has been linked to liver damage, with at least one death. Animal studies indicate that lung, kidney and gastrointestinal problems are also possible.

Ephedra also known as **ma huang** and **epitoinin**, contains stimulants found in asthma drugs and in decongestants. It is promoted for weight-control and energy-boosting formulas, sometimes with caffeine, which can augment the adverse effects. Ephedra can raise blood pressure and cause nerve damage, muscle injury, psychosis, stroke and memory loss. Several deaths have occurred prompting several states to limit sales.

Lobelia acts like nicotine, though it's less potent. It can stimulate and depress the autonomic nervous system. Even a small amount of dried lobelia can reduce breathing, drop blood pressure, induce sweating and rapid heart beat and cause coma and death.

Yohimbe is sold as a men's aphrodisiac. An overdose can cause weakness and nervous stimulation, followed by paralysis, fatigue, stomach disorders and ultimately death.

Conclusion

In conclusion, herbal supplements may find its way in becoming an alternative form of medicine. **But presently herbal supplements should not be a substitute for established disease therapy. More research is needed on herbs regarding specifics, such as use, dose, safety, efficacy, interactions and side effects.**

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