Spring 2002

Health Information: Help, Hope or Hype?

During this session you will:

- Discuss current sources of personal health information.
- *Refine and learn new skills to evaluate health information.*
- Practice evaluating health information.



Next Steps Follow-up

- How did you use the WHI meal planning guide?
- What "WHI" meals did you try?

Sources of Health Information

Surveys show that American consumers rely on the news media for most of their information about nutrition and dietary supplements. However, the headlines are frequently more confusing than helpful.

This session will:

- Prepare you to evaluate health information such as advice on dietary supplements.
- Help you understand the difference between science and personal opinion.

Most of us use many different sources for health information. We hear news on the radio, talk to family and friends, watch TV, and read newspapers and magazines. Some of us even get health news from computers.

Think about the last time you made a health-related decision. It may have been your decision to participate in WHI, join a health club or begin taking certain vitamins.

- What sources of information did you use when making your decision?
- Which information sources do you think were the most helpful?
- What influence does the media have on your health decisions (e.g., TV, newspapers, etc.)?



Are You Confused?

Americans are confused about health information. Hundreds of news stories about health get reported every week. Often messages change from week to week. One week, you may hear that vitamin E prevents heart disease and the next week, you may hear that it interferes with heart medications.

Scientific research is slow and time-consuming. It's like putting together a jigsaw puzzle. Most of those "well publicized" headlines you see are just one piece of the puzzle. Researchers need a lot of pieces before they can see the whole picture.

Why is it important for you to become skilled at reading and evaluating health information? First, it can help you identify reliable information. Second, it can help you apply the best available information to your own personal health decisions.

Evaluating Health Information

There are many different ways that scientists search for new information about health. However, to be considered worthwhile, health information needs to be:

- Not influenced by any personal beliefs or values.
- The result of many studies, not just one.

Even if you don't have special training in science, here are a few things to think about as you read health-related articles.

Personal experience

Be careful of reports of personal experience or testimonials, particularly when the authors are trying to sell a product or procedure. The reports



may make the news, but what happens to one person, or even a few people, may be due to chance.

Consider the source

Was the study published in a respected scientific journal? Big name journals apply the most rigorous standards, and the research they publish is more likely to be valid and important. If you're not sure about a journal, ask your doctor or nutritionist.



Look for hidden variables Did the study evaluate all the factors that might have affected the results? Suppose researchers report that people who regularly take vitamin C are less likely to have heart attacks. Did the vitamin C users share other qualities that might protect them? Were they younger? Leaner? Did they have lower blood pressure or cholesterol? A well-designed study will evaluate such possibilities.

Hidden motives

Search for hidden motives when you look at a news article or report. See if you can identify who paid for the study and where the study was done. Decide if any special interest group would gain or lose by showing particular results. For example, what would you think if research supported by a candy company reported that eating chocolate prevents heart disease?

Dramatic headlines or promises of easy answers

Look past the headlines. News headlines, TV news reports and advertisements are designed to catch your attention. However, they often provide only part of the story. You need to question headlines that make bold or extreme statements, promise easy answers, or sound too good to be true.

Consider the design

Human studies are more revealing than animal experiments or test tubes. The most reliable type of study is a randomized controlled trial (like WHI), where some participants get the treatment in question and others get a placebo.

Size matters

Chance is always a greater factor in a study that has a small number of participants. Think of it this way: If you repeatedly flip a coin, it should come up "heads" about half the time. In a series of four flips, you may get "heads" every time, but if you flip a coin 100 times, you're unlikely to get such uneven results. By the same logic, large studies are more likely to find the true effects of an intervention. Many highly publicized studies are quite small.

Length of study matters

It is also important to know how long the study lasted. The length of a study is particularly important when the disease being followed is cancer or heart disease. Both of these diseases take a long time to develop, so a study needs to allow enough time to see differences between the groups. This is why the WHI study follows participants for up to 12 years.

Fact or Fiction (Practice)

ee if you can use the guidelines presented in this session. Find a nutrition or health-related article you want to evaluate. Or use the Sample News Article - Lab Study Finds Possible Villainy in Vitamin C *Pill* provided in this session (page 7). Use the checklist provided on Worksheet Spring 1 - Evaluating *Health Information* (page 8) and the information in this session. Go through your article and highlight the key points and information you can find. Compare this information to the information suggested on the Spring Worksheet 1. Compare the article's headline to the text and decide if the article supports the impression you received from the headline.

• How well does your impression from the headline compare to the information in the article?

Sometimes when you read a newspaper article or see a report on TV, you may have some questions.

- What questions do you have after reading the article?
- Where could you find reliable answers to your questions?



If you need more information to help you make reliable health decisions, use some of the ideas provided in the Spring Resources. The Supplement *Fact Sheet* (on page 9) provides some information about dietary supplements and safety issues to consider if you are using dietary supplements. The Resources for Reliable Health Infor*mation* handout (page 10) provides phone numbers and web addresses for nationally available information. There is also a list of newsletters that provide helpful health information. Contact your nutritionist for local sources of reliable health information.

Next Steps

hen you read or hear the "latest research," don't jump to conclusions. Remember a single study is not a good reason for changing your health habits.



In addition, keep up your good work and participation in WHI. You are an important partner in advancing the scientific knowledge about women's health issues and the role of diet in the prevention of cancer and heart disease. Your contributions are greatly appreciated.

Questions for Thought:

- How does reading and understanding health information help you make choices?
- How confident do you feel that you will be able to use this information to evaluate health information?
- Would you change any behaviors based on what you learned today?

Lab Study Finds Possible Villainy in Vitamin C Pill

The vitamin C pills taken by millions of health-conscious Americans may actually help produce toxins that can damage their DNA, a step toward forming cancer cells, a laboratory study suggests.

In a study appearing in the journal *Science*, University of Pennsylvania researchers said they found, in test tube experiments analyzing the action of vitamin C, that the nutrient can act as a catalyst to help make a toxin that can injure DNA, the body's genetic code.

The findings do not mean that vitamin C causes cancer, said Ian A. Blair, lead author of the study, but the research does sound a warning about the use of vitamin C pills.

"Vitamin C can do some good things, but it can do some bad things as well," Blair said. "If you really wanted to be cautious, you just wouldn't use supplementation (vitamin pills)."

Instead of pills, Blair said people can get all the nutrients they need through a balanced diet, particularly fruits, vegetables and grains.

Balz Frei, a professor at the Linus Pauling Institute at Oregon State University, said the Blair study "is an important finding in understanding the chemistry of vitamin C." He cautioned that the results come from a test tube study, which involves chemicals in glass lab dishes, and that the same action may not occur in living animals.

"Just because you damage DNA doesn't mean you'll get cancer," Blair said. "The cell has an exquisite repair mechanism for lesions in the DNA."

Blair said the research may explain the failure of studies that have attempted to show vitamin C can protect against cancer.

"There are two camps — people who think vitamin C supplementation is good for you and those who think it is bad for you," he said. There is limited scientific evidence that it is really good for you.



Evaluating Health Information

1. Is the title misleading after reading the article? Does the article use dramatic statements to get your attention? (Uses scare tactics, appeals to your emotions?) Example statement:

- 2. Does the article sound too good to be true? (Promises a quick or easy fix, makes unrealistic claims, such as reversing the aging process? Claims it can cure, treat or prevent a wide variety of heath problems, uses a secret formula?) Example statement:
- 3. Does the article use testimonials vs. objective research? (Sound science is unbiased, follows the principles of the scientific method, is published in scientific journals, based on more than one study, applies to people like vou.)

Type of research: Who participated? Number of participants? Length of study?

- 4. Does the author have hidden motives? (Are they selling a product or profiting from their research?) Who profits from this research?
- 5. Based on your responses above, what is your conclusion about the findings of this study?

6. Would you change your behavior based on this article? Why or why not?

Resource -

Supplement Fact Sheet

Almost 50 percent of Americans use dietary supplements. Most people who use supplements rely on supplement advertisements for information on choosing and using the product.



Nutritionists advise people to eat healthy foods.

- A varied, balanced diet provides:
- Balanced amounts of nutrients (not excessive)
- Phytochemicals and fiber, which are not always in supplements
- The joy of eating food

Supplement needs vary throughout your lifetime, for example:

- Pregnant women need folic acid and iron.
- Strict vegetarians and older people need B-12.
- People with low milk intake and low exposure to sun need Vitamin D.
- Post-menopausal women don't need iron supplements.

Safety issues related to supplements:

- Tell your doctor what supplements you take. Some supplements may interfere with medications or increase bleeding times.
- Too much of any supplement may cause harm. Store all vitamin and mineral supplements out of sight and reach of children. (Iron supplements, meant for adults, are the most common cause of poisoning deaths among children in the U.S.).
- The government does not test supplements for safety or effectiveness.
- Natural does not equal safe mushrooms are natural, but some are poisonous.
- Look for expiration dates and "USP" on the label.
- If you take calcium supplements, allow time (several hours) before you take other supplements or medications. Calcium can bind to and block medications, multivitamins and minerals.

Resources for Reliable Health Information

Information Sources:

WHI Group Nutritionist



- Hot Lines:
 - National Cancer Information Service: 1-800-4-CANCER
 - American Dietetic Association, Consumer Nutrition: 1-800-223-9994 or *www.eatright.org*
 - US Food and Drug: 1-888-INFO-FDA (1-888-463-6332) or *www.fda.gov*
 - National Institute of Health: 1-800-222-225 or www.nih.gov
- <u>National Resources</u> Web Sites
 - National Cancer Institute www.cancernet.nci.nih.gov
 - National Heart, Lung & Blood Institute www.nhlbi.nih.gov
 - National Health Information Center www.health.gov/nhic
 - National Women's Health Network www.4woman.gov
 - Mayo Clinic Internet Health Medicine Resources www.mayo.eduhealthinfo/resources.html
 - Web MD www.webmd.com
 - Medical Network, Inc www.healthatoz.com
 - Tufts University (Nutrition Navigator) www.navigator.tufts.edu

Mutrition Newsletters/Periodicals:

Berkeley Wellness LetterTufts University

Environmental Nutrition

- FDA Consumer
- Consumer Reports on Health
- Mayo Clinic Health Letter
- Local Resources:

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Saucy Fruit Salad

1 can (11 oz.) mandarin oranges, drained
 1 can (20 oz.) pineapple chunks, drained
 3 bananas, sliced
 2 red apples, chopped
 kiwi, sliced for garnish

For Fruit Sauce:

1 box (1.3 oz.) sugar-free instant vanilla pudding 1 cup skim milk 1/3 cup orange juice concentrate 1 carton (6 oz.) low-fat banana yogurt

Mix all fruits and set aside. Combine dry pudding with milk, orange juice and banana yogurt. Beat with wire whisk until smooth. Combine fruits and sauce. Chill. Serve garnished with fruits.

(Note: By leaving the skin on apples rather than peeling and discarding them, you can significantly increase your fiber intake.) Makes 5 cups (10 servings)

Serving size: 1/2 cup

Fat: 0.6 grams per serving

Fruit/Vegetable Servings: 1 per serving

Recipe from Judy Luxford, Chapel Hill WHI Clinical Center

"WHI Correct" Salad

package (3 oz.) of lemon Jell-O[®]
 cup Hellmann's[®] low-fat mayonnaise
 carton (16 oz.) fat-free Light n' Lively[®] cottage cheese
 cup grated carrots
 cup chopped celery
 tablespoon grated onion

Dissolve lemon Jell-O[®] in 1/2 cup of hot water. While hot, add the mayonnaise and then allow this mixture to cool. When cool, add the cottage cheese, carrots, celery and onion. Place in refrigerator until firmly set. Makes 8 servings

Fat: 1 gram per serving

Fruit/Vegetable Servings: 0.5 per serving

Recipe from Geri DeLoatche, Chapel Hill WHI Clinical Center

Mocked Caesar Salad

2 garlic cloves, peeled and minced 1/4 cup reduced-sodium soy sauce 1/4 cup freshly squeezed lemon juice 3 cups chopped Belgian endive 6 cups torn Romaine lettuce 1/8 teaspoon black pepper 1 tablespoon grated parmesan cheese 1 1/3 cups chopped tomatoes

Put the garlic, soy sauce, and lemon juice in a bowl and whisk thoroughly. Add the endive and Romaine lettuce. Toss to coat. Sprinkle cheese on top. Garnish with chopped tomatoes. Makes 2 servings

Fat: 1.5 grams per serving

Fruit/Vegetable Servings: 7 per serving

Recipe from Drucilla Lynn, Chapel Hill WHI Clinical Center

Spinach Soup

1/4 cup chopped onion
1 garlic clove minced
1 tablespoon olive oil
1 can (46 oz.) chicken broth
1/2 cup Acini de Pepe (pasta), uncooked
1/4 teaspoon nutmeg
1/8 teaspoon white pepper
1 package (10 oz.) frozen chopped spinach, thawed and squeezed (fresh can be used - 2 cups packed)
salt to taste (optional)
grated parmesan cheese (optional)

Cook onion and garlic in olive oil until tender, not browned. Add chicken broth, bring to a boil. Add pasta, nutmeg, and pepper. Simmer for about 5 minutes. Add chopped spinach, simmer 5 minutes stirring occasionally. Season with salt, if desired. Garnish serving with parmesan cheese.

Makes 10 servings

Fat: 1.5 grams per serving

Recipe from Maggie Behn, Chapel Hill WHI Clinical Center

Lesley Tinker

From: ant: io: Subject: Helen Penor Wednesday, January 16, 2002 10:34 AM ALL Lead Nutritionists Spring 2002 Session Reminder & News Articles

(Sent on behalf of Holly Henry.)

Hello Lead Nutritionists

This e-mail provides logistical information for the Spring 2002 (8SP) session, Evaluating Health News (GN materials title) also titled Health Information: Help, Hope or Hype? (participant materials title).

Session Reminder for Spring 2002

An electronic copy of the Spring 2002 session reminder is attached. Feel free to modify the reminder to meet your participant and clinic needs.

Sample News Articles for Spring 2002

An electronic copy of 6 sample news articles is attached (2 articles from the GN materials plus 4 new articles). Paper copies of the four new news articles related to supplements will be sent to each CC via the weekly CCC mailing January 17, 2002.

We encourage you to look for more recent news articles in February. See GN materials for Internet resources.

Thank you.



SP02rem.doc

HELEN C. PENOR WOMEN'S HEALTH INITIATIVE (WHI) NUTRITION UNIT PROGRAM ASST. (206) 667-2943 HPENOR@WHI.ORG



Evaluating Health News

Are you confused? You're not alone. Surveys report that most Americans are confused by the health messages they hear. It seems like new studies contradict old studies. For example: Eggs are bad, now eggs are OK; margarine is better than butter, no margarine is as bad as butter. Who do you believe? Much of the confusion is compounded because the media has different goals than researchers. Reporters highlight unusual findings to grab your attention. Researchers view each new study as a stepping stone to the truth. In our next session we'll talk about how to evaluate health information.



One Cup of Coffee May Temporarily Harden Arteries

STOCKHOLM (Reuters Health) — The amount of caffeine in just one cup of coffee could be enough to harden a person's arteries for several hours afterward, according to a study presented at the European Society of Cardiology Congress here.

Hardened arteries, or atherosclerosis, put extra pressure on the heart and increase the risk of heart attack and stroke, researchers said. They noted that their findings could have implications for people already at risk of these conditions. "People must be careful with caffeine, especially if they have high blood pressure," said Dr. Charalambos Vlachopoulos from the Cardiology Department of the Henry Dunant Hospital in Athens, Greece. "After drinking a cup of coffee, blood pressure can rise up to 5 or even 10 millimeters of mercury. The amount depends on the individual and dose." "Regular rises of this magnitude are important in a person's long-term prognosis and could increase their risk of suffering from a stroke or heart attack," Vlachopoulos said. "I think that people with high blood pressure...should consider reducing their caffeine intake or having caffeine-free drinks."

The researchers gave a group of 10 healthy volunteers either inactive placebo capsules or capsules containing 100 milligrams of caffeine—a quantity equivalent to one cup of coffee. On another day, the volunteers received the opposite capsule from the previous dosage. Neither the volunteers nor the testers knew the sequence in which the volunteers had been given the capsules. Caffeine consumption caused an increase in wave reflection a measure of arterial stiffness—for at least 2 hours, according to the study results. Found in coffee, tea and soft drinks, caffeine is the most widely used drug in the world, Vlachopoulos said. In the Western world, 8 out of 10 adults consume caffeine in some form.

Doctors Say a Chocolate a Day Keeps Them Away

Tuesday, September 4, 2001 By Patricia Reaney

GLASGOW, Scotland, Sep 04 (Reuters) — Good news for chocoholics. The treat favored by millions may also be good for you, US researchers said Monday. Chocolate contains compounds called flavonoids that can help maintain a healthy heart and good circulation and reduce blood clotting—which can lead to heart attacks and stroke. "More and more, we are finding evidence that consumption of chocolate that is rich in flavonoids can have positive cardiovascular effects," Carl Keen, a nutritionist at the University of California, Davis, told a science conference. "We not only have observed an increase in antioxidant capacity after chocolate consumption, but also modulation of certain compounds which affect blood vessels."

Antioxidants are substances that help reduce the effects of cell-damaging free radicals in the body. Fruits, vegetables, nuts and whole grains are high in antioxidant vitamins such as C and E. Keen presented research on the effects of chocolate on blood clotting to the British Association for the Advancement of Science conference here. The study was funded by the confectionery maker Mars Inc.

NOT ALL CHOCOLATE CREATED EQUAL

Flavonoids in chocolate are derived from cocoa, which is rich in the compounds. Some research has shown that a small bar of dark chocolate contains as many flavonoids as six apples, 4.5 cups of tea, 28 glasses of white wine and two glasses of red wine. But Dr. Harold Schmitz said there are variations in the levels of flavonoids in chocolate and cocoa products depending on the production process, during which many flavonoids can be destroyed. "All chocolates are not created equal in regards to flavonoid content," Schmitz, a scientist with Mars, told a news conference.

Flavonoids are thought to reduce the risk of cardiovascular disease, the leading cause of death in many industrialized countries, by reducing platelet aggregation—when blood platelets combine into a sticky mass and form clots. But the British Heart Foundation said that although chocolate contains flavonoids, it also has high levels of saturated fats and sugar. "Fruits and vegetables contain much higher levels of flavonoids, plus many other beneficial nutrients without the fat content," the foundation said. "So the message is, enjoy a little chocolate in moderation, but ensure you eat five portions of fruit and vegetables daily to get all the flavonoids you need without the added fat," it advised.

Keen and his colleagues measured the impact of chocolate on platelets in the blood in 25 volunteers. The researchers collected blood samples from volunteers who ate 25 grams (0.9 ounces) of chocolate with a high flavonoid content and other volunteers who ate bread. They took blood samples from both groups 2 and 6 hours after they ate the chocolate or bread to measure their platelet activation. Volunteers who consumed the chocolate had lower levels of platelet activity, which would reduce the probability of having a blood clot. The scientists found no change in the group that ate the bread.

Lab Study Finds Possible Villainy in Vitamin C Pill

The vitamin C pills taken by millions of health-conscious Americans may actually help produce toxins that can damage their DNA, a step toward forming cancer cells, a laboratory study suggests.

In a study appearing in the journal *Science*, University of Pennsylvania researchers said they found, in test tube experiments analyzing the action of vitamin C, that the nutrient can act as a catalyst to help make a toxin that can injure DNA, the body's genetic code.

The findings do not mean that vitamin C causes cancer, said Ian A. Blair, lead author of the study, but the research does sound a warning about the use of vitamin C pills.

"Vitamin C can do some good things, but it can do some bad things as well," Blair said. "If you really wanted to be cautious, you just wouldn't use supplementation (vitamin pills)."

Instead of pills, Blair said people can get all the nutrients they need through a balanced diet, particularly fruits, vegetables and grains.

Balz Frei, a professor at the Linus Pauling Institute at Oregon State University, said the Blair study "is an important finding in understanding the chemistry of vitamin C." He cautioned that the results come from a test tube study, which involves chemicals in glass lab dishes, and that the same action may not occur in living animals.

"Just because you damage DNA doesn't mean you'll get cancer," Blair said. "The cell has an exquisite repair mechanism for lesions in the DNA."

Blair said the research may explain the failure of studies that have attempted to show vitamin C can protect against cancer.

"There are two camps—people who think vitamin C supplementation is good for you and those who think it is bad for you," he said. There is limited scientific evidence that it is really good for you.

Vitamin C Shows Promise in Heart Failure Patients

Therapy with vitamin C may help heart failure patients by improving the function of their blood vessels, results from a small study suggest. However, researchers say it is too early to recommend the vitamin as a treatment for congestive heart failure.

In a study that looked at vitamin C treatment in 34 patients with congestive heart failure—as well as how the vitamin affected cells in the test tube—German and French researchers found that the vitamin appeared to keep cells in the blood vessel wall from dying. They say this protection from cell death could explain previous study findings suggesting that vitamin C benefits blood vessel function in people with congestive heart failure.

Researchers led by Dr. Stefanie Dimmeler, of the University of Frankfurt in Germany, report the findings in the October 30th issue of Circulation: Journal of the American Heart Association.

Congestive heart failure occurs when the heart cannot pump efficiently enough to meet the body's needs, resulting in symptoms such as fatigue and shortness of breath. Heart failure usually results from an underlying heart condition such as coronary artery disease.

Heart failure patients also show poor function in the blood vessel walls, and research suggests that damaging forms of oxygen called reactive oxygen species accumulate in the blood as the condition progresses, Dimmeler told Reuters Health. This oxidative stress, she explained, may contribute to dysfunction in the blood vessel wall—called the endothelium—by killing off endothelial cells.

Vitamin C is an antioxidant, which means it helps remove cell-damaging oxygen compounds from the body. "Therefore," Dimmeler said, "we questioned whether antioxidative treatment of heart failure patients with vitamin C against these reactive oxygen species can reduce endothelial cell death."

She and her colleagues gave 34 patients either vitamin treatment or an inactive placebo. Treated patients first received an intravenous dose of vitamin C, followed by 3 days of oral supplements. All were on standard drug treatment for heart failure.

Before treating the patients, the researchers had found in experiments that exposing endothelial cells to vitamin C kept certain inflammatory proteins from pushing the cells to "commit suicide"—a process called apoptosis.

Similarly, when they examined blood samples from the patients, they found that those who received vitamin C showed far less evidence of apoptosis in endothelial cells than they had before treatment. Placebo patients showed no such change.

According to Dimmeler, these findings may help researchers better understand the mechanisms behind heart failure, and suggest that either dietary vitamin C or heart failure drugs with added antioxidant properties could slow the course of the disease.

"However," she said, "(vitamin C) has not yet been proven to prevent disease progression in congestive heart failure."

SOURCE: Circulation 2001;104.

Antioxidants Do Not Help Cholesterol-Lowering

Taking antioxidants reduces the benefits of cholesterol-lowering drugs. It's often assumed that taking vitamins, herbs and other supplements will be beneficial or, at worst, do no harm. But there's increasing evidence that supplements do interact with prescription drugs.

The latest example is a study by doctors at the University of Seattle, which reveals that people taking antioxidant supplements do not get the full benefit of cholesterol-lowering drugs. The trial looked at 153 patients with heart disease, who had low levels of high density lipoprotein (HDL or 'good' cholesterol). They were divided into four groups: cholesterol-lowering drugs, antioxidant vitamin cocktail, vitamins plus drugs and placebo.

When HDL levels were measured, they increased 25 per cent in the drug only group, but only 18 per cent if antioxidants were added. The interaction between two approaches to try to lower heart disease risk is a worry—until we know more, it could be best to get your antioxidants from a healthy diet, especially if you are on cholesterol-lowering drugs.

Source: Atherosclerosis, Thrombosis and Vascular Biology August 2001

Avoid Herbal Remedies Before Surgery

Gingko biloba caused a gall bladder surgery patient to develop serious bleeding. Medicinal garlic caused spinal bleeding in another patient, who needed a second operation to avoid permanent paralysis.

Both are real-life examples of surgical complications that can develop from herbal medicines. They are cited by University of Chicago doctors who developed a list of recommendations on when to stop taking such products before an operation.

"We suspect that these cases represent only a small fraction of the actual adverse events related to herbal medications since there is no adequate reporting mechanism," said Drs. Michael Ang-Lee, Jonathan Moss and Chun-Su Yuan.

A University of Chicago survey found that up to 50% of pre-surgery patients there use herbal medicine, according to Yuan, and similar results have been found at other hospitals.

"Many herbs do have beneficial effects, but if patients don't have enough knowledge these herbs can cause adverse effects," Yuan said.

The researchers note that the American Society of Anesthesiologists recommends that all herbal medicines be stopped at least two to three weeks before surgery to avoid complications.

But the Chicago doctors say their review of medical literature suggests a more targeted approach. Their recommendations, published in Wednesday's *Journal of the American Medical Association*, refer to eight commonly used products: echinacea, ephedra, garlic, gingko biloba, ginseng, kava, St. John's wort and valerian.

Gingko biloba, for example, which has been used for age-related eye disease, impotence and altitude sickness, can raise the risk of bleeding. It should be discontinued at least 24 hours before surgery, the researchers said.

Garlic, which may lower blood pressure and cholesterol, also prevents clotting and should be discontinued at least 36 hours before surgery, the researchers said.

They encouraged patients to tell their physicians about any herbal products they may be taking and said doctors should aggressively question patients about their use of such products, especially before surgery.

"The prevention, recognition and treatment of complications begin with explicitly eliciting and documenting a history of herbal medicine use," the researchers said.