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Should You Take Dietary Supplements?

A Look at Vitamins, Minerals, Botanicals and More

When you reach for that bottle of vitamin C or fish oil pills, you might wonder how well they'll work and if they're safe. The first thing to ask yourself is whether you need them in the first place.

More than half of all Americans take one or more dietary supplements daily or on occasion. Supplements are available without a prescription and usually come in pill, powder or liquid form. Common supplements include vitamins, minerals and herbal products, also known as botanicals.

People take these supplements to make sure they get enough essential nutrients and to maintain or improve their health. But not everyone needs to take supplements.

"It's possible to get all of the nutrients you need by eating a variety of healthy foods, so you don't have to take one," says Carol Haggans, a registered dietitian and consultant to NIH. "But supplements can be useful for filling in gaps in your diet."

Some supplements may have side effects, especially if taken before surgery or with other medicines. Supplements can also cause problems if you have certain health conditions. And the effects of many supplements haven't been tested in children, pregnant women and other groups. So talk with your health care provider if you're thinking about taking dietary supplements.

"You should discuss with your doctor what supplements you're taking so your care can be integrated and managed," advises Dr. Craig Hopp, an expert in botanicals research at NIH.

Dietary supplements are regulated by the U.S. Food and Drug Administration (FDA) as foods, not as drugs. The label may claim certain health benefits. But unlike medicines, supplements can't claim to cure, treat or prevent a disease.

"There's little evidence that any supplement can reverse the course of any chronic disease," says Hopp. "Don't take supplements with that expectation."

Evidence does suggest that some supplements can enhance health in different ways. The most popular nutrient supplements are multivitamins, calcium and vitamins B, C and D. Calcium supports bone health, and vitamin D helps the body absorb calcium. Vitamins C and E are antioxidants—molecules that prevent cell damage and help to maintain health.

Women need iron during pregnancy, and breastfed infants need vitamin D. Folic acid—400 micrograms daily, whether from supplements or fortified food—is important for all women of childbearing age.

Vitamin B12 keeps nerve and blood cells healthy. "Vitamin B12 mostly comes from meat, fish and dairy foods, so vegans may consider taking a supplement to be sure to get enough of it," Haggans says.

Research suggests that fish oil can promote heart health. Of the supplements not derived from vitamins and minerals, Hopp says, "fish oil probably has the most scientific evidence to support its use."

The health effects of some other common supplements need more study. These include glucosamine (for joint pain) and herbal supplements such as echinacea (immune health) and flaxseed oil (digestion).

Many supplements have mild effects with few risks. But use caution. Vitamin K, for example, will reduce the ability of blood thinners to work. Ginkgo can increase blood thinning. The herb St. John's wort is sometimes

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used to ease depression, anxiety or nerve pain, but it can also speed the breakdown of many drugs—such as antidepressants and birth control pills—and make them less effective.

Just because a supplement is promoted as "natural" doesn't necessarily mean it's safe. The herbs comfrey and kava, for example, can seriously damage the liver.

"It's important to know the chemical makeup, how it's prepared, and how it works in the body—especially for herbs, but also for nutrients," says Haggans. "Talk to a health care provider for advice on whether you need a supplement in the first place, the dose and possible interactions with medicine you're already taking."

Wise Choices
Safe Use of Supplements

- Tell all of your health care providers about any dietary supplements you use. Some supplements can interact with medications or affect medical conditions.
- Read the label instructions for use.
- "Natural" doesn't always mean safe. For up-to-date news about the safety of particular supplements, check http://nccam.nih.gov/news/alerts.
- Too much might be harmful. Don't take more than the recommended dose.

For vitamins and minerals, check the % Daily Value (DV) for each nutrient to make sure you're not getting too much. "It's important to consider the DV and upper limit," says Haggans. Too much of certain supplements can be harmful.

Scientists still have much to learn even about common vitamins. One recent study found unexpected evidence about vitamin E. Earlier research suggested that men who took vitamin E supplements might have a lower risk of developing prostate cancer. "But much to our surprise, a large NIH-funded clinical trial of more than 29,000 men found that taking supplements of vitamin E actually raised—not reduced—their risk of this disease," says Dr. Paul M. Coates, director of NIH's Office of Dietary Supplements. That's why it's important to conduct clinical studies of supplements to confirm their effects.

Because supplements are regulated as foods, not as drugs, the FDA doesn't evaluate the quality of supplements or assess their effects on the body. If a product is found to be unsafe after it reaches the market, the FDA can restrict or ban its use.

Manufacturers are also responsible for the product's purity, and they must accurately list ingredients and their amounts. But there's no regulatory agency that makes sure that labels match what's in the bottles. You risk getting less, or sometimes more, of the listed ingredients. All of the ingredients may not even be listed.

A few independent organizations conduct quality tests of supplements and offer seals of approval. This doesn't guarantee the product works or is safe; it just assures the product was properly made and contains the listed ingredients.

"Products sold nationally in the stores and online where you usually shop should be fine," Coates says. "According to the FDA, supplement products most likely to be contaminated with pharmaceutical ingredients are herbal remedies promoted for weight loss and for sexual or athletic performance enhancement."

To make it easy to find reliable information, NIH has fact sheets on dietary supplements at http://ods.od.nih.gov/factsheets/list-all/. NIH also recently launched an online Dietary Supplement Label Database at www.dsld.nlm.nih.gov. This free database lets you look up the ingredients of thousands of dietary supplements. It includes information from the label on dosage, health claims and cautions.

For more personalized, on-the-go information about dietary supplements, check out NIH's free updated app for your smart phone or tablet: My Dietary Supplements (MyDS). You can access it at http://myds.nih.gov.

The MyDS app provides the latest supplement information and lets you keep track of the vitamins, minerals, herbs and other products you take. You can even keep track of supplements taken by your parents, spouse or children.

"Deciding whether to take dietary supplements and which ones to take is a serious matter," says Coates. "Learn about their potential benefits and any risks they may pose first. Speak to your health care providers about products of interest and decide together what might be best for you to take, if anything, for your overall health." ■

Web Links

For more about dietary supplements, click the "Links" tab at:
http://newsinhealth.nih.gov/issue/Aug2013/Feature1

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Recognizing Cataracts

Watch for Vision Changes as You Age

As life goes on, we all start to notice certain changes that are a natural part of aging. Maybe our joints aren't as flexible as before, or our hearing just isn't what it used to be. Our vision, too, may be less sharp than it once was.

One cause of impaired eyesight later in life is cataracts. A cataract is a clouding of the lens in the eye. People with cataracts may notice cloudy vision or halos around lights when driving at night. If left untreated, cataracts can greatly limit vision. In fact, some people with severe cataracts may only be able to tell the difference between light and dark.

Cataracts are common in older adults. About half of all Americans will either have cataracts or have had cataract surgery by the time they reach age 80.

"I don't usually think of cataract as an eye disease. In most cases, it's simply a normal aging change of the eye," says Dr. Rachel Bishop, an ophthalmologist (eye doctor) at NIH. "Typically, cataracts don't cause damage to the eye the way most eye diseases do."

Early symptoms of cataract can be improved with eyeglasses, brighter lighting, anti-glare sunglasses or magnifying lenses. If these steps don't help, surgery is the only effective option for treatment. Surgery involves removing the cloudy lens and replacing it with a plastic lens.

Cataract procedures are among the most common surgeries performed in the United States. Most patients recover in just a few weeks, and many have improved eyesight after a few days. Recent advances have allowed doctors to tailor new lenses to patients and help reduce the need for eyeglasses after surgery.

The decision to have cataract surgery is a personal one that should be made between you and your doctor. Some experts advise that cataracts be removed only when vision loss interferes with your everyday activities, such as driving, reading or watching TV.

The best way to prevent or delay cataracts is to protect your eyes from harmful ultraviolet rays from the sun. Try wearing sunglasses or a hat with a brim. Researchers also believe that good nutrition can help reduce the risk of age-related cataract. They recommend eating plenty of green leafy vegetables, fruits, nuts and other healthy foods. Also, don't smoke, because smoking may speed cataract development.

To screen for early signs of eye disease, Bishop recommends that everyone have a dilated eye exam at age 40, even if your vision seems fine. Once you're in your 60s, a dilated eye exam is usually advised every year.

"Some people think reduced vision is just an unavoidable part of normal aging," says Bishop. "It isn't. If you notice your vision isn't as good as it used to be, you should see your eye doctor." Since many serious eye diseases have no early warning signs, it's also important to make regular eye exams part of your standard health care routine. ■

Wise Choices
Cataract Symptoms

Check with an eye care professional if you have any of these symptoms. They may also be a sign of other eye problems:

- Cloudy or blurry vision.
- Colors seem faded.
- Glare—headlights, lamps or sunlight may appear too bright. A halo may appear around lights.
- Poor night vision.
- Double vision or multiple images in one eye. (This symptom may clear as the cataract gets larger.)
- Frequent prescription changes in your eyeglasses or contact lenses.

Web Links

For more about cataracts, click the "Links" tab at:
http://newsinhealth.nih.gov/issue/Aug2013/Feature2

Health Capsules

For links to more information, see these stories online:
http://newsinhealth.nih.gov/issue/Aug2013/Capsule1

Predicting Response to Breast Cancer Drugs

Scientists found tiny genetic differences that can help identify women most likely to benefit from certain breast cancer prevention drugs—and who should avoid them.

Women at high risk for breast cancer—such as those with a previous tumor or a family history of the disease—can take medications to lower their risk. These drugs include tamoxifen and raloxifene. But many women decide not to take them. The drugs don't always prevent cancer, and in rare cases they can cause serious side effects. If doctors could better predict a patient's response to therapy, women could make more informed choices about their treatment.

To learn more, an international team of NIH-funded scientists analyzed the genes of women in a breast cancer prevention study. The women had taken tamoxifen or raloxifene for several years to reduce their risk for breast cancer.

Two tiny genetic regions tended to differ between women who did and didn't develop breast cancer while taking the drugs. Women who had "helpful" versions of both regions were about 6 times less likely to develop breast cancer than women who didn't have these versions.

"Our study reveals the first known genetic factors that can help predict which high-risk women should be offered breast cancer prevention treatment and which women should be spared any unnecessary expense and risk from taking these medications," says study leader Dr. James N. Ingle of the Mayo Clinic. "We also discovered new information about how the drugs tamoxifen and raloxifene work to prevent breast cancer." ■

Volunteers Needed for Diabetes Study

Have you been diagnosed with type 2 diabetes in the last 5 years? If yes, you may be eligible to help scientists test treatments by participating in an NIH study.

Type 2 diabetes, the most common type of diabetes, usually appears during middle age or older, but it can affect people of any age. People with type 2 diabetes have too much glucose, or sugar, in their blood, and they have trouble converting food to energy. The drug metformin, which helps to control blood glucose, is often the first line of treatment.

If metformin isn't enough to keep blood glucose in check, doctors sometimes add another drug. But no long-term studies have looked at which drug combination works best and has fewer side effects.

To address this issue, NIH launched a long-term clinical trial called the GRADE study. Researchers will examine the benefits and risks of common diabetes drugs used with metformin.

Scientists hope to enroll about 5,000 participants at 37 locations across the country. All volunteers will take metformin, along with a second medication randomly assigned from among 4 classes of drugs approved for use with metformin by the U.S. Food and Drug Administration.

Participants will have their diabetes medications managed free of charge during the study. Other health care must come from participants' own providers.

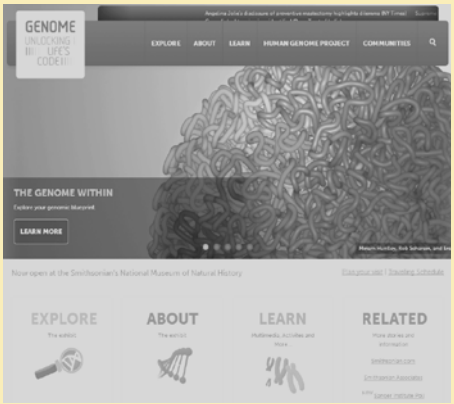
Learn more about the GRADE study at http://grade.bsc.gwu.edu. ■

Featured Website

Genome: Unlocking Life's Code

http://unlockinglifescode.org

Your genome holds clues to your current and future health as well as your ancestry. Explore how genome studies are improving medical care and our understanding of the world around us. This educational website is part of a state-of-the-art museum exhibition developed through an NIH-Smithsonian partnership.



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