

The Truth Behind the Top 10 Dietary Supplements

What you need to know about the most popular dietary and nutritional supplements on the market.

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WebMD Weight Loss Clinic-Feature

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A visit to the health food store can be an overwhelming experience. It's tough to figure out what to choose from among the dizzying assortment of dietary and nutritional supplements on the shelf. From vitamins to minerals to weight loss pills, there are thousands of options to choose from. But do you really need any of them? Do they really work, and if so, which ones are best?

WebMD turned to some experts for answers about the multibillion-dollar dietary and nutritional supplement industry.

Total sales for the U.S. dietary supplement industry in 2006 are estimated at \$22.1 billion, with vitamins accounting for \$7.2 billion of that, says Patrick Rea, editor of the market research publication *Nutrition Business Journal*. Included in this total are not only sales of vitamins, but also those of minerals, herbs/botanicals, sports supplements, meal supplements, and weight loss products.

How Are Dietary Supplements Regulated?

The Dietary Supplement Health and Education Act, approved by Congress in 1994, defines dietary supplements as products that:

- Are intended to supplement the diet
- Contain one or more ingredients (like vitamins, herbs, amino acids or their constituents)
- Are intended to be taken by mouth
- Are labeled as dietary supplements

The Food and Drug Administration (FDA) once regulated dietary supplements the same way it does foods, but that changed as of Aug. 24, 2007. The FDA's new good manufacturing practices ruling ensures that supplements:

- Are produced in a quality manner
- Do not contain contaminants or impurities
- Are accurately labeled

"Making cereal is very different from making dietary supplements. ... This new ruling is very specific to the production of capsules and powders and will give consumers great confidence that what is on the label is indeed in the product," says Vasilios Frankos, PhD, of the FDA's Division of Dietary Supplement Programs.

The FDA provides manufacturers with guidelines for making claims about what effects their products have on the body, Frankos says.

"If they make a claim, they must notify us so we can review it," Frankos says. "Manufacturers have to provide us with evidence that their dietary supplements are effective and safe."

Who Needs Dietary Supplements?

It's important to remember that dietary supplements are designed to supplement your diet, not to replace nutritious foods.

"Supplements can enhance a diet where there are shortfalls, but a handful of vitamin, mineral or other dietary supplements can never take the place of a healthy diet," says David Grotto, RD, a spokesperson for the American Dietetic Association (ADA).

"Foods are so complex, offering not only vitamins and minerals, but fiber, nutrients (carbohydrates, proteins, and fats), phytochemicals, and a whole host of nutritious substances that science has not fully identified that work together with other foods and provide the benefits of a healthy eating pattern."

Still, the ADA recognizes that some people may require supplements because the vitamins and/or minerals they need are hard to get in adequate amounts in the diet. These groups include:

- Pregnant women
- Nursing mothers
- Strict vegetarians
- People with food allergies or intolerances
- Senior citizens

Those with diseases such as cancer, or kidney, cardiovascular, or bone disease

Top 10 Dietary Supplements

Whether they really need them or not, sales figures show that plenty of people are purchasing supplements. Here are the top 10 most popular supplement categories, based on sales calculated by the *Nutrition Business Journal*:

Dietary Supplement No. 1: Multivitamins

Multivitamins lead the pack, and with good reason. Taking a daily multivitamin with minerals has long been considered nutritional "insurance" to cover dietary shortfalls.

"There is no harm in taking a once-daily multivitamin, as long as you select one based on your age and sex," says Grotto. "Take one daily or just on days when your diet is inadequate. But better than a multivitamin is to fill in the gaps with food that offers so much more than supplements."

Dietary Supplement No. 2: Meal Replacements

Powdered and liquid products like SlimFast and Ensure might not be what most of us think of as dietary supplements. But they're included in the list because they are designed to supplement the diet.

For people who can't eat regular food because of illnesses, these products are good alternatives. Still, "eating a wide variety of nutrient-rich foods is better, if tolerated," says Grotto.

And what about weight management? Using a meal replacement can help control calories and be beneficial, experts say -- as long as it's part of a lifestyle that includes exercise and a calorie-controlled diet.

Dietary Supplement No. 3: Sports Nutrition Supplements

This is a broad category that includes both sports performance and weight loss supplements. It includes pills, powders, formulas and drinks formulated not just to hydrate but to enhance physical activity. Among them are creatine, amino acids, protein formulas, and fat burners.

"These products provide a subtle, incremental effect. You can't use a sports supplement for a week and expect to gain pounds of muscle, but if used properly, research shows they can provide a slight, not overwhelming, edge," says Andrew Shoa, PhD, vice president for regulatory affairs for the Council for Responsible Nutrition, a trade association for the dietary supplement industry.

Kris Clark, PhD, RD, sports nutrition director at Penn State University, says she very carefully uses select sports supplements with collegiate athletes: "I rely on the major nutrients in food, timing of meals and fluids to enhance athletic performance, and in general I discourage dietary supplements, other than the use of sport shakes, bars, and gels after practice or events for muscle cell recovery."

Dietary Supplement No. 3: Sports Nutrition Supplements continued...

She also uses chocolate milk, which she says is "the perfect recovery drink that includes protein, carbohydrates and fluids."

"Creatine is one of the most popular supplements, with over 100 studies consistently showing it can work in muscle cell recovery in athletes who engage in high-intensity, short-burst activity such as sprinting or weight lifting," notes Clark. "But it does not work for endurance or recreational athletics." (She cautions anyone taking creatine to be sure they stay well hydrated to avoid cramping.)

Stimulants are also common ingredients in sports supplements, says Shao. "Some products that contain stimulants like caffeine have been shown to be a performance enhancer," he says. "But it is not a panacea and must be part of a healthy diet and fitness routine."

Clark prefers to get these benefits from caffeinated drinks instead. "You can get the same boost from a cup of coffee or an energy drink that are safe. ... When you take supplements, there are often cryptic ingredients that could be potentially risky."

Dietary Supplement No. 4: Calcium

Calcium is one of the minerals most often lacking in Americans' diets. But experts say that whenever you can, you should choose calcium from foods such as dairy products, fortified foods, dark leafy greens, soybeans, beans, fish, and raisins.

The 2005 U.S. Dietary Guidelines recommends three servings of low-fat or non-fat dairy each day to help bridge this gap. But there are plenty of people who shun dairy, the best source of calcium in our diets.

"Many people misinterpret a sensitivity to lactose and think they are lactose-intolerant," says Grotto.

If you have not been diagnosed as lactose-intolerant, give dairy another chance. Start slowly, with a small amount with meals, or try dairy products that are lower in lactose, such as aged cheeses and yogurt.

If you do choose a calcium supplement, look for calcium citrate or lactate. These forms are best absorbed by the body, says Grotto.

Dietary Supplement No. 5: B vitamins

B vitamins include thiamin, niacin, riboflavin, pantothenic acid, vitamin B-6, and vitamin B-12.

Many of us don't need these supplements, experts say.

"Romance surrounds the B vitamins because people misuse them to reduce stress and think a supplement will make them a nice person in traffic," says Grotto. "But there is not much research to support this theory. And besides, our diets are plentiful in B vitamins."

One exception, he says, is seniors, who may need additional B-12 because as we get older, we absorb less of it. Most of us should skip the supplements and get our Bs from grains, dark green vegetables, orange juice, and enriched foods. People with certain medical conditions or who take drugs that interfere with vitamin absorption may also require supplementation.

Dietary Supplement No. 6: Vitamin C

Vitamin C is often taken in an effort to ward off colds, though there's little proof this works.

"There is scant evidence it may decrease the intensity or duration of colds, but it won't do any harm up to about 1,000 milligrams a day," Grotto says. Because it is a water-soluble vitamin, excess amounts are excreted.

Your health-care provider may tell you to take vitamin C if you have a wound that's healing. But wound otherwise, go for food sources. Rich sources include oranges, peppers, grapefruits, peaches, papayas, pineapples, broccoli, strawberries, tomatoes, and melons.

Dietary Supplement No. 7: Glucosamine and Chondroitin

These supplements are often taken by people with joint pain.

In a study published in the Feb. 23, 2006, issue of *The New England Journal of Medicine*, these supplements, taken alone or in combination, were not found to provide significant relief from osteoarthritis knee pain among all participants. However, results in a subgroup of study participants with moderate to severe pain showed the combination may be effective.

While the evidence is not conclusive, some rheumatologists say many of their patients find relief from the combination.

"About 40% of my osteoarthritis patients benefit from taking 1,500 mg of glucosamine and 1,200 mg chondroitin sulphate a day (for) four to eight weeks," says Kaiser Permanente rheumatologist Eduardo Baetti. But "most patients are also taking pain relievers, such as Tylenol."

Dietary Supplement No. 8: Homeopathic Medicines

These are not technically dietary supplements, but are nonetheless a popular category.

Homeopathy, or homeopathic medicine, is a medical philosophy dating back to the late 1700s. It's based on the idea that our bodies have a self-healing response. So, the theory goes, if certain a substance causes a symptom in a healthy person, giving that person a *very small amount* of the same substance may cure the symptoms.

The National Institute of Health's National Center for Complementary and Alternative Medicine web site notes that studies on homeopathy have been contradictory. Some have suggested the

results are similar to a placebo effect, while others have found positive effects that are not readily explained in scientific terms.

"Homeopathics are benign in general because they are so dilute it is unlikely they will cause any harm if used properly," says Grotto. "But the explosion in this category includes cleansers [products marketed as kidney, liver and other organ cleansers] and products that misuse the term and are not really homeopathic."

He cautions users to consult health care professionals, and not to attempt to treat or diagnose conditions that require professional care.

Dietary Supplement No. 9: Vitamins D

Chances are, you are not getting enough vitamin D for good health.

"The current recommendations are not adequate to protect against chronic diseases or prevent osteoporosis," vitamin D expert Michael Holick, MD, tells WebMD. "All evidence suggests that infants and adults can tolerate 1,000 IUs a day as safe, without risk of toxicity.

Holick suggests taking a daily vitamin D supplement or getting safe sun exposure to maintain proper blood levels of vitamin D.

And be sure to eat a variety of foods rich in vitamin D such as fortified milk and cereals, salmon, and tuna. Check with your dermatologist about guidelines for safe sun exposure.

Dietary Supplement No. 10: Fish/animal Oil

"95% of the sales in this category come from fish and not animal oils" says Rea.

Unless a doctor is treating you for heart disease or high triglyceride levels, you should not take fish oil supplements, says Alice Lichtenstein, DSc, Tufts University researcher and chairwoman of the American Heart Association (AHA) nutrition committee.

"Studies show that omega-3 fatty acids are cardio-protective and the basis for the AHA recommendation to consume fatty fish twice weekly," she says. "But the studies do not show that popping a supplement can have the same benefit in healthy individuals." She adds, "There is also a misperception that fish oils can lower cholesterol, but this is not true."

If you don't like fatty fish such as salmon, Lichtenstein recommends eating other kinds of fish such as canned tuna. (Just be sure to avoid any fish that is breaded and fried.)

Foods such as canola oil, soybeans, flax, and walnuts are all healthy foods containing omega-3s, but they are not a substitute for fatty fish, experts say.

Clark will continue to recommend omega-3 fatty acids supplements because "most people don't come near meeting the AHA recommendations for fatty fish twice weekly, and with a heightened fear of mercury levels in all types of fish, people are not coming close to getting enough omega-3 fatty acids in their diets."

Tips for Choosing Dietary Supplements

Experts agree there are some rules of thumb for choosing dietary and nutritional supplements. First, look for trusted brands that have been around for some time.

"There have been issues of dietary supplements being adulterated and contaminated with heavy metals, so choose a respected brand to be sure what is on the label is safe and exactly what is found in the product," suggests Grotto.

Another tip: read the claims carefully. If they look too good to be true, they probably are, says Shoa.

"Products promising to pack on 20 pounds of muscle in a week are not going to deliver because nothing can yield those kind of results," he says.

If you want to take it a step further, check out the studies companies site documenting the effectiveness of the product. Clark recommends consulting the journals *International Journal of Sports Nutrition and Exercise Metabolism* or *Medicine and Science in Sports and Exercise* for studies on dietary supplements.

Last but not least, be sure to check with your doctor before taking any dietary supplements, suggests Frankos.

The Dangers of Megadoses

Many consumers go way beyond the daily multivitamin, and take megadoses of dietary supplements. But is more better in this case?

No, experts say. In fact, exceeding the Recommended Daily Allowances for some vitamins and minerals could be dangerous.

"Generally, you should not exceed 100% of the recommendation for vitamins or minerals because these supplements are in addition to the food you eat, and potential toxicities can occur," says Grotto.

Be especially careful with minerals and-fat soluble vitamins A, D, E, and K, which can build up in your system.

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Reviewed on August 24, 2007

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