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## Supplements: A scorecard

### Benefits Limited – Some Harmful

About half the adult population take at least one supplement. The public has a legitimate desire for good health, but do supplements provide the benefits you really need?

Medications are regulated by the FDA. Before a prescription or over-the-counter drug can be sold in the United States, the manufacturer must submit data supporting its safety and efficacy, and after the medication is approved, the FDA continues to monitor adverse reactions. Even with all these safeguards, problems still occur, prompting the FDA to withdraw many medications and to require strong warning labels on others.

The FDA does not regulate products marketed as "dietary supplements," even though most people buy them for health, not nutrition. Manufacturers can sell these products without submitting evidence of their purity, potency, safety, or efficacy.

For most claims made on product labels, the law does not require evidence that the claim is accurate or truthful. In fact, the FDA's first opportunity to weigh in comes only after a product is marketed, when it can take action against products that are adulterated, misbranded, or likely to produce injury or illness. ***There are an estimated 50,000 adverse reactions to supplements that occur in the United States each year.***

#### How do we really know?

In most cases, scientific investigations of supplements start with simple observational studies, in which researchers compare the health status of folks who take a particular supplement with the health of people who don't take the supplement. It's an important effort, but the results don't always hold up. So, the next step is to conduct randomized clinical trials, in which volunteers are assigned by lot to take either the supplement or an identical-looking placebo ("dummy pill") while researchers track their health. In the best studies, neither the volunteers nor the researchers know who is getting the real thing until the code is broken at the end of the trial.

#### What do we know?

Everyone wants to know if supplements can help. It's a good question. Here's where we stand today — **in most cases no**, but recommendations will change as scientific studies trickle in. Unfortunately, in most cases, the studies have failed to confirm our hopes.



## Supplements for prevention

**Vitamin D.** To get vitamin D the old-fashioned way, by producing it in the skin, we need lots of sunshine. But as work has shifted from the farm to the office and as we've learned to use sunscreens to reduce the risk of skin cancer and wrinkles, many people lack sufficient amounts of the "sunshine vitamin." Older adults, patients with chronic illnesses, and people of color are at particular risk.

Vitamin D is needed to absorb calcium from the intestines; that's why vitamin D is so important for healthy bones. It is difficult to get sufficient Vitamin D from your diet, **so adding a Vitamin D<sub>3</sub> or D<sub>2</sub> supplement can be beneficial**, but more is not better since too high a dosage can be toxic. Have your physician test for Vitamin D levels and monitor to maintain a normal range.

**Antioxidants.** (Vitamin E, vitamin A, beta carotene, and vitamin C) **Many careful randomized clinical trials have not shown any benefit against heart disease, cancer, or other illnesses.** And that's not the worst of it. Even moderately high doses of vitamin A increase the risk of hip fractures, and high levels of vitamin A have been linked to an increased risk of prostate cancer; beta carotene increases lung cancer risk in smokers; and vitamin E increases the risk of prostate cancer and has been linked to an increase in respiratory infections, heart failure, and the overall death rate. **Do not take antioxidant supplements.**

**Vitamin B<sub>12</sub>** is found only in animal-based foods, so strict vegetarians may need supplements. In addition, many older people don't make enough of the stomach acid that's needed to liberate B<sub>12</sub> from animal products so it can be absorbed. After being tested and you have a deficiency, a B<sub>12</sub> supplement may be reasonable, but an intramuscular injection provides more effective results. You would need to take nearly three times orally to achieve the same results.

**Folate** is more complex. The vitamin is essential for the production of red blood cells, and it has an important role in DNA production and in repairing defects in the genetic code. Although folate is present in a variety of leafy green vegetables, fruits, legumes, and meats. If you have a folate deficiency, adjusting your diet is the best option. **Consistent use of a folic acid supplement has been known to increase the risk of certain tumors.**

One exception is obstetricians still recommend folic acid supplements for women who are trying to conceive or who are already pregnant to limit chances of a birth defect.

**Multivitamins.** Despite their iconic status, there is no evidence that multivitamins enhance health and well-being or prevent illness.

Without disputing these conclusions, many doctors have continued recommending (and taking) multivitamins. It can't hurt and may provide some benefit if the quality of diet is a question.



## Other supplements

**Fish oil.** For years, doctors have known that people who eat fish regularly enjoy some protection against heart disease and stroke. For people with cardiovascular disease who don't eat fish regularly, taking a fish oil supplement is reasonable. But check with your doctor first. People who eat fish at least twice a week are not likely to benefit from extra fish oil.

**Fiber.** Most people think of fiber supplements as a treatment for constipation. But a high intake of fiber has many potential benefits for several health conditions, ranging from heart disease and obesity to hernias, varicose veins, and diverticulitis. Whole grains, fruits, vegetables, nuts, and seeds are the best sources of fiber, but many people need supplements to meet these goals. If you need supplementary fiber, consider psyllium, which has the added benefit of lowering cholesterol levels.

**Selenium.** In the late 90's it was reported that it appeared to reduce the risk of prostate cancer. Then in 2009, a 35,553 man multinational trial of selenium and vitamin E, alone or in combination, reported that neither selenium nor vitamin E had any benefit against prostate cancer. Selenium also appears to increase the risk of diabetes. ***Selenium should be avoided.***

**Probiotics** are a combination of live beneficial bacteria and/or yeasts that naturally live in your body. The main job of probiotics is to maintain a healthy balance in your body. Natural probiotics are the best and found in Yogurt, Buttermilk, Pickles, some cheeses, Tempeh, Miso, sauerkraut, and many more. There is no doubt natural probiotics are beneficial for digestive health, UTI, IBS, Yeast infections, etc. Researchers are currently unsure how effective probiotic supplements are for achieving similar results. They are generally considered safe but should be avoided after surgery and when the immune system is weakened. Probiotic supplements can also cause resistance to many antibiotics or greatly reduced their effectiveness.

## Conclusion

It's a disappointing scorecard. Most people stand to benefit from vitamin D, many from fiber, and some from fish oil. ***Bottomline, buyer beware. Despite many grandiose claims, most provide no benefit, and some can actually be dangerous or reduce the effectiveness of some medications.***

It's often hard to balance sober scientific judgments against simple, forceful claims for health in a pill. Remember these are manufacturers claims and not backed through rigorous clinical trials. As the popularity of supplements has increased, so have recalls. The FDA has withdrawn over 140 supplement products that were laced with undisclosed ingredients or have been proven to actually be dangerous to your health.