

Supplements: Who and What Can You Trust?

by Raymond Francis

Almost all vitamin supplements are junk. Large-scale epidemiological studies by the federal Centers for Disease Control and the National Research Council (NRC) have failed to find health benefits among people who take vitamins. The NRC issued a report saying there is no conclusive evidence of any healthful effect from taking vitamin supplements. Last July an Oxford University study in the medical journal *Lancet* announced that vitamins are “a waste of money.” There is a good reason for all this—most supplements are ineffective. Yet supplements are a necessity. It is almost impossible to be healthy without them.

Because we are not getting the nutrition we need, more than 75 percent of us have a diagnosable chronic disease. In April of 1998, the National Academy of Sciences issued a profound statement saying that most people will not get all the vitamins they need, even if they eat a good diet with lots of fruit and vegetables.

In June of 2002, a landmark study in the *Journal of the American Medical Association*, using 36 years of data, concluded that everyone needs a daily multivitamin regardless of age or health. It is no longer possible to avoid serious disease without supplementing. Depleted soils, premature harvesting, long transit times to market, processing, and a host of other factors have drastically reduced the nutritional quality of our food.

It takes an enormous amount of knowledge, care, and expense to create an effective vitamin supplement. Since the basis of competition in the supplement market is price, there is little incentive to create quality, especially since the buyer cannot see the quality, and reading labels never gives enough information to fully evaluate a supplement. There are only a few dozen scientists in the US today who know how to create an effective supplement, and their expertise does not come cheaply. Add to that the cost of high quality ingredients and optimal manufacturing, storage and transportation. Then factor in the time and money it would take to educate the consumer, and you can see why very few manufacturers even attempt to make a good supplement. The result? Most supplements are either ineffective or only marginally effective, and many of them are toxic.

Let us take a closer look at what it takes to make an effective vitamin supplement:

Dissolvability. Studies have shown that almost half of all vitamin formulas do not dissolve soon enough to be absorbed by the body. Binders, used to hold the pill together, can prevent it from dissolving. Lubricants can also bind tightly to the nutrient particles and prevent them from being dissolved. If you know how to design them and are willing to bear the added cost, there are binders and lubricants that work without inhibiting dissolution. The particle size of the powder also makes a difference in how fast the nutrients will dissolve; finer sizes dissolve faster but cost more and are more difficult to handle.

Molecular Structure. Most vitamin formulas are made from petroleum-based synthetics because they are the least expensive form. Unfortunately, these synthetic vitamins can be fundamentally different from vitamins found in nature. The most serious problem is the shape of their molecules, which are often the mirror image of their natural counterparts. Similar to a right hand versus a left hand; they are both the same—yet fundamentally different. It is the precise shape of a molecule that tells the body what to do

with it. A slightly different shape will produce different results, often ineffective or even toxic results! Petroleum-based synthetics also lack the natural co-factor and synergist molecules found in food.

Allergens. Many supplement ingredients are derived from food sources, but the cheapest sources are also common allergens, such as corn, milk, wheat, and soy. Unfortunately, information regarding the source is not listed on the label. Usually when a label claims to be allergen-free, it means that the ingredients are made from petrochemicals. However, even in such formulas, additives such as the fillers, binders, and lubricants often contain allergens.

Low quality ingredients. Every ingredient is available in a range of different purities and chemical forms. By purchasing lower grade purity and inexpensive forms, the supplement manufacturer can save a lot of money while the consumer is none the wiser. The lowest acceptable purity is called "food grade," and it is the least expensive. Most popular brands are made from these low cost, impure, food-grade ingredients. These nutrients have been found to contain toxic heavy metals, such as lead and arsenic, as well as pesticides and other harmful chemical contaminants. Consider the most common source of calcium — calcium carbonate — made from inexpensive, ground-up seashells that have been harvested from polluted waters and contain toxins. Not only is this cheap form of calcium toxic, it also has very low biological activity; only about 10 percent of the calcium is actually used by the body. The chemical form of a mineral that will produce the highest bioactivity is in combination with a specific amino acid transporter, or "chelator." Calcium citrate is an example. You can spot a low-quality formula when the label lists carbonates, sulfates, phosphates, oxides, and amino acid chelates (instead of designating a specific amino acid) or proteinates (another word for nonspecific amino acid chelates). Better formulas will combine the mineral with the correct amino acid.

Additives. Most vitamin pills contain up to 50 percent additives. These additives are of even lower purity than food grade nutrients. They include lubricants, binders, artificial colors, flavors and fillers. Unfortunately, these additives can be allergenic and toxic and can interfere with the absorption of the nutrients. Many additives are totally unnecessary. Fillers, for example, are added to make pills bigger.

Toxic Forms. Formulated incorrectly, even vitamins and minerals themselves can become toxins. Most vitamin formulas contain nutrients in chemical forms that are difficult for the body to excrete. These can build up in the body and become toxic. For example, vitamin B6 is known to be toxic in higher doses. However, if the correct chemical form is used, any excess B6 is easily removed from the body so it does not build to toxic levels. Similarly, minerals such as selenium and chromium, even at low levels, can be quite toxic in their inorganic forms; their correct and more expensive organic forms eliminate the problem.

Adjusted to pH. In the human digestive system, there are extremes of pH. In the stomach, pH is extremely acidic. Yet the absorption of nutrients takes place in the small intestine, which is an extremely alkaline environment. This range of extremes can damage nutrients and render them useless. However, if a supplement formula is properly buffered, stabilized, and balanced, the nutrients will survive. Each and every ingredient must be considered individually and as part of the total formula in order to achieve a combination that will survive the full range of pH extremes, and go on to be absorbed and utilized.

Adverse reactions between the nutrients. Most manufacturers unwittingly dump an assortment of cheap vitamins and minerals into a formula and sell them to the public with a lot of marketing hype. As these ingredients progress from the extremely acid stomach to the extremely alkaline small intestine, they often react with each other in ways that destroy nutrient value. For example, this is the reason why knowledgeable manufacturers will exclude iron, copper, and iodine from their multivitamin formula; they react with and destroy other nutrients. Preventing these interactions requires specialized knowledge and extra cost to select nonreactive chemical forms.

Competition for absorption. Nutrients can compete for absorption. Nutrients that lose this competition will pass through the body unused. To avoid these problems, the chemical forms of the nutrients must be carefully chosen to minimize competition. Again, few manufacturers do this because either they lack the expertise or they are unwilling to pay for the more expensive assortment of ingredients this requires.

Additional Considerations. There are many additional considerations required to make a high quality vitamin supplement. One consideration is the age of the ingredients. To save money, some manufacturers purchase old and even outdated ingredients whose potency has been diminished. How the ingredients have been shipped and stored also makes a difference. Shipping in an unrefrigerated truck in the summer and/or storage in a hot and humid warehouse will damage the potency. Having the mixed products sitting around prior to tableting and packaging exposes the ingredients to oxygen, moisture, and light, all of which can damage the nutrients. The packaging must be done carefully and correctly to protect the nutrients until the user consumes the product.

These are just a few considerations. There are many more. When you realize how poorly most supplements are put together, it is no wonder studies find no benefit from taking them. To make a high-quality vitamin/mineral supplement, each of the above considerations and many others must be addressed. To do it right requires an incredible amount of knowledge plus lots of extra care and expense. Having been a technical consultant to vitamin companies, I know firsthand that this rarely happens. I once advised a client to remove the iron from their multivitamin because it was reacting with and destroying other nutrients. They left it in because they thought including iron on the label would help them sell more product.

So how do you as a consumer select an effective supplement? Not by reading the label. Although there are clues you can get from labels, which I've enumerated above, there are myriad ways in which labels can be misleading and incomplete. The only way I know to make a good supplement choice is to rely on the advice of someone with the expertise and willingness to do the work of investigating the truth behind the label. I hope I have earned or will earn that trust from you. I have been fortunate enough to meet and develop relationships with some of the top scientific minds in the supplement industry, and for the past 16 years I have continued to learn and to investigate and evaluate various supplement products. In all my years of searching, I have been unable to find anything better than the Beyond Health brand. No matter how little you pay, the most expensive supplement is one that doesn't work. For what you pay versus what your body actually gets, Beyond Health offers the least expensive vitamin supplements on the market. Beyond Health does it right and is available at 800-250-3063.

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