

THE BEST SUPPLEMENTS FOR YOUR HEALTH

Revised and Updated - 2014 Edition

Part One: How To Choose and Use Supplements: Chapter Three

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**The revised and updated version of this book is being provided in digital format. Each Chapter will be*

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PREFACE

As pharmacists, we (Don Goldberg and Arnie Gitomer) have a healthy respect for drugs and their benefits. When we were in pharmacy school, however, there was still a great deal of awareness that a large number of the drugs listed in the pharmacopeia were derived from natural sources. A substantial amount of the curricula back then was devoted to subjects such as pharmacognosy, the study of natural substances, particularly plants, that are used in medicine. Over the years, however, courses of this type have been dropped from most pharmacy schools.

Why? Advances in chemistry enabled the pharmaceutical industry to synthesize ever more powerful drugs. We were less dependent on natural products as sources of lifesaving therapeutic agents. Instead, we looked to the chemist's lab bench.

There were good reasons for this movement away from natural products. Supply problems were alleviated. Greater potency could be achieved. The drugs were more easily standardized, and they could often be made available in a more reproducible, convenient form.

And we cannot ignore the economic incentive. A drug derived from a natural substance cannot be patented. A synthesized chemical drug, on the other hand, can be patented, giving the pharmaceutical company an opportunity to recoup the cost of Food and Drug Administration approval, and earn a handsome profit for seven or more years.

As is usually the case, unfortunately, there is no such thing as a free ride. Along with this increased potency comes increased toxicity and the potential for undesirable side effects. When deciding on the treatment for a health problem, a choice has to be made. We have to evaluate the benefit versus the risk of the various options available to us. Killing a fly with a shotgun blast will work, but using a fly swatter might work equally well, without such extensive collateral damage.

In our opinion, the medical establishment became enamored with high-tech, high-powered solutions to many of the health problems facing us today and lost sight of the fact that more gentle, less toxic alternatives were available. There are times when a fly swatter is actually all that is needed.

And even better, put screens on the windows! In other words, prevention—prevent the fly from entering in the first place. Too often, I will hear a patient complaining that "the doctor gave me this prescription, and now I feel worse than I did before." Or the doctor says, "Your blood pressure is a little high—have this prescription filled!"

According to recently released medical guidelines, almost everybody should be taking a "statin" drug to bring their cholesterol levels down to the recommended levels. Is elevated cholesterol or heart disease caused by a deficiency of "statin" drugs? Is arthritis caused by a deficiency of aspirin?

It has been said that we are experiencing an increase in diabetes of almost epidemic proportions. Heart disease, obesity, and cancer are rampant. Is this because we have not yet developed newer or more powerful drugs? Of course not.

Instead, these serious health problems are related to changes in our lifestyles and environment. We do not eat healthy food, we do not get enough exercise, and we are exposed to pollutants and toxins that did not exist in our grandparents' time. We live longer, but not healthier.

It's easy to respond with an admonition to just eat the right foods, prepared properly, get more exercise, and move out of the city. This would be fine, and it is an appropriate goal to strive for, but it's obviously a goal that cannot be achieved by the average person.

We consider nutritional supplements and herbal medicines to be a valuable compromise, or a bridge, between the two extremes—unrealistic lifestyle changes and reliance on miracle drugs. These agents can provide us with the healthy components of foods in quantities that might be difficult or impossible to get through diet alone. They also provide those natural agents that, when ingested at higher levels, exert therapeutic action with fewer side effects than more powerful, synthetic drugs. They offer a convenient and effective way to augment our diet with agents that have been shown to ward off the onset of aging, cancer, heart disease, Alzheimer's disease, osteoporosis, birth defects—nearly all health problems.

The benefits of nutritional supplementation are now being recognized not only by the general public, but also by the medical community. Interest in these alternative "remedies" is at the highest level ever. Everybody is looking for more information on which supplements to use and how to use them. Factual answers to these questions can

be hard to find. Unfounded and exaggerated claims are easy to find. That is why we are writing this book.

The information we provide is designed to help you distinguish fact from hype. We want to help you choose the best supplements for your health.

HOW TO USE THIS BOOK

This book is not intended to be used as a replacement for professional medical advice. Instead, it is meant to help you understand the benefits associated with the use of nutritional and herbal supplements and advise you about how best to use these supplements.

The book is divided into two parts. In Part One, we will discuss what nutritional supplements are and the reasons for taking them. First, we will take you through a series of steps that will help you choose the right type of supplement. We will then teach you how to tailor a supplement program to your own unique health needs. And we will review how to best use the supplements you have chosen. We will also teach you how to tell the difference between a good supplement and a bad one, and how to separate unfounded marketing hyperbole from sound nutritional advice. We suggest you read through Part One in its entirety.

In Part Two, we will present information on specific dietary supplements. We have drawn this information from a variety of sources, including those listed in the bibliography. Some of the information is based on recent scientific study and some is based on traditional and historic usage patterns. We have tried to indicate the degree of reliability when appropriate.

In Chapter 5, we provide information on individual nutrients and herbs. Representative products are provided as well, with educational and evaluative annotations when appropriate.

In Chapter 6, we provide a selection of popular combination remedies designed for specific health conditions. Representative products are listed, with ingredient information when possible.

The mention of specific products is for educational purposes only and is not an endorsement. Similar products are available from numerous additional sources. By providing you with examples and pointing out their strengths and deficiencies, we hope to enable you to make better decisions when evaluating which products to purchase on your own. To make it easier for you to find those products and categories that pertain to your personal needs, we have provided a "Therapeutic Cross-Reference." Additional references and Internet links can be found on our website, www.bestsupplementsforyourhealth.com.

CHAPTER THREE: How to Use Supplements

When to Take Supplements

One of the most common questions is, “When should I take my vitamins?” In most cases, this is not as critical a concern as most people seem to think it is, but there are certain situations where it can be very important.

Our bodies are designed to assimilate nutrients from food. This includes the macronutrients such as protein, carbohydrate, and fat, as well as the micronutrients (vitamins and minerals). To accomplish this, we secrete enzymes designed to break down each type of nutrient, and our body adjusts the acidity or alkalinity of each section of the digestive tract to optimize the activity of these enzymes.

With a few exceptions, then, when taking nutritional supplements as sources of nutrients, the best way to take them is to think of them as food. Take them with meals or with food. This will assure that they are broken down and assimilated most efficiently.

What does “with meals” mean? We have seen people almost break out into a sweat in their anxiety over whether “with meals” means before the meal, during the meal, or after the meal. It’s not that important. Do whatever makes you comfortable. If you take a large number of supplements, maybe it will be easier if you spread them out, taking some before and some after the meal.

The other advantage of taking your supplements with food is that you will be less likely to experience any gastric discomfort. Some people are very sensitive and find that B-complex vitamins, fish oil supplements, and others can cause a problem if not taken with food.

There are some people who would have you believe that various types of nutrients have to be taken at specific times and that one cannot be taken at the same time as another, and so forth. Pay little attention to this. Remember what we just said about how the body is designed to obtain the nutrients it needs.

One example is calcium. There are some people who advise taking calcium supplements only before bedtime. Bear these facts in mind: First, the body has an elaborate and sensitive mechanism in place to ensure that serum calcium levels remain within a strict and narrow range. As soon as blood calcium levels fall below this range, the body desperately reaches out for any source of calcium it can find to raise calcium back up to the required level. To the body, our bone is a calcium reservoir, a source of calcium when it needs it. When calcium levels in the blood fall, the body pulls calcium out of our bones to correct the deficit. It makes no sense to artificially create a deficit of calcium throughout the day, encouraging bone loss, just to attempt to replenish it at nighttime. Second, it is our nature to obtain calcium from food throughout the day. The optimal way to supplement with calcium is to divide the dosage to two or three times a day.

Another example involves a theory that there is some advantage to eating only one type of nutrient at a time. This makes no sense for many of the same reasons already discussed. Few foods in their natural state consist of only one type of nutrient. A substantial part of the digestive process takes place in the small intestine, under the influence of pancreatic enzymes. The pancreas secretes a mixture of enzymes, composed of proteases, amylase, and lipase (protein-digesting, carbohydrate-digesting and fat-digesting, respectively.) And most vitamins are absorbed through a passive diffusion mechanism.

There are times when supplements should not be taken with food. This usually is when the item is being used as a therapeutic agent rather than as a nutrient.

One example would be the amino acids. If you are using amino acids, especially in a mixture, as a source of efficient protein supplementation, you could take the supplement at any time. But if you are taking an individual amino acid for its therapeutic activity, you should take it between meals, when there is no other protein present to compete with its absorption.

Another example would be proteolytic-enzyme supplements designed to be used as anti-inflammatory agents rather than as digestive enzymes. When taking an enzyme supplement containing proteolytic enzymes (trypsin,

chymotrypsin, papain, bromelain) for the purpose of enhancing the digestion of dietary protein, the obvious time to take the product is with meals. But if the intention is for these enzymes to be absorbed and exert a systemic anti-inflammatory action, you do not want to take them with meals, where they would be partially deactivated by interacting with food. Instead, take them between meals, so that more will be absorbed into the bloodstream.

Usually, if a supplement is intended to be taken at times other than with meals, the directions on the container will state that. As a general rule, you can assume that unless stated otherwise, a supplement should be taken with food. If in doubt, ask a qualified health professional, such as a nutritionally trained pharmacist or physician.

How Often to Take Supplements

To obtain maximum benefit, it is usually best to divide your supplements in two or three doses per day. Many nutrients are water-soluble. They will be absorbed in an hour or two, reach maximum blood levels, and then begin to be eliminated from the body. Within a half-day, much of the dose is gone. When you take several doses (at least two) throughout the day, you maintain blood levels over a much longer time. This is why we have suggested that a two-a-day multivitamin is much superior to a one-a-day multivitamin.

For fat-soluble nutrients (such as vitamin A, vitamin D, and CoQ10), this is less of a problem, as they are stored for a much longer period in the body. To maximize the utilization of these nutrients, take them with food, especially food that contains some fat or oil. CoQ10 is now available suspended or emulsified in oil in soft gel capsules.

Storing Supplements

The best way to store supplements is in a cool, dry place, away from direct sunlight. Cool does not necessarily mean cold, and storing vitamins in a refrigerator is not generally recommended. The reason for this is that the opening and closing of bottles stored in a refrigerator may cause moisture condensation, and moisture is no less a cause of deterioration than heat or oxygen. In fact, moisture may be the biggest culprit. Keep the bottle tightly closed. If you do not have a cool place to store your supplements in the summer, do not purchase large bottles.

Vitamins will gradually deteriorate on storage. Heat and moisture will accelerate that deterioration. As a vitamin supplement deteriorates, it loses potency. It does not turn into something toxic or dangerous. Instead of having a tablet that contains 500 milligrams of vitamin C, it may now contain only 400 milligrams of vitamin C.

You can often tell if a vitamin supplement is old. Vitamin C starts to turn brownish in color. So what may have been a white tablet when first purchased is now off-white or lightly brown. In a multivitamin, you might start to see dark brown spots throughout the tablet, and you will notice a strong vitamin smell.

Minerals are very stable, and you seldom have to worry about the age of a mineral supplement. Herbs, if kept dry, will remain stable for long periods as well.

Storing Oils and Probiotic Supplements

Some types of supplements are inherently unstable. Certain oils, for example, may easily be oxidized and must be stored in glass bottles and refrigerated. Flaxseed oil is a good example.

Probiotic (acidophilus) products are another good example. Many of the cultures used in probiotic supplements are very vulnerable to the effects of heat. You want to have as high a content as possible of live, viable organisms. Pasteurization of yogurt kills the beneficial microorganisms. In supplements, theoretically, freeze-dried cultures should be reasonably stable, but in the race to see who can claim the highest potencies, refrigeration is necessary to preserve the extremely high levels now being marketed.

Once again, this does not mean you have to carry a battery-operated portable refrigeration unit with you on the bus so that you can protect your probiotic supplement from deterioration on the way home from your neighborhood health food store. Instead, what you should do is enhance its potency and shelf life by making sure it is refrigerated

in the store and keeping it refrigerated once you get it home. Short periods of exposure to ambient temperatures should not significantly impact the integrity of the product. If instead of containing 2.5 billion trillion organisms per quarter-teaspoon, it contained only 2.4 billion trillion organisms per quarter-teaspoon, the world will not come to an end. Luckily, however, new, stabilized probiotic supplements are now being introduced that do not require refrigeration. One example is a new product from Jarrow Formulas, Jarro-Dophilus EPS.

Side Effects, Interactions, and Toxicity

Some people would have you believe that just because something is natural, it cannot be harmful. This is obviously not true. Many of history's most popular poisons are natural substances.

On the other hand, time-tested therapeutic herbs have not been used continuously for 2,000 or more years because they kill half the people who take them! Nor does an herbal remedy continue to be used for hundreds of years if it has no beneficial action. To the contrary, trial and error has led us to herbs and nutrients that have been shown to be helpful in treating various disorders without causing side effects and toxic reactions. It is a mistake to ignore evidence based on traditional experience and history of use.

Most of the cautions associated with dietary supplements are commonsense cautions. In other words, you don't take a supplement that lowers blood pressure if you have low blood pressure. If you are taking antidepressant medication, you don't start taking a bunch of antidepressant herbs at the same time.

There are those in conventional medicine, however, who resent the implication that anything other than drugs is effective in treating or preventing disease. Others, including many dietitians, jealously guard against any suggestion that food alone is not sufficient and that supplements might be an appropriate adjunct to improved health and vitality. They embrace anything negative about dietary supplements that they can find. The problem is that they cannot find very much.

So they resort to harping on marginally appropriate concerns to the point of absurdity.

"Don't take vitamin E because it may cause thinning of the blood." "Don't take fish oil, ginkgo biloba, garlic, or feverfew if you are taking blood-thinning medication." People are walking around scared to death that if they get a paper cut, they will bleed to death, merely because they took 400 IU of vitamin E that morning.

Goodness gracious. If these concerns were at all valid, you would expect to see people lying about in pools of blood . . . a scene reminiscent of Night of the Living Dead. Zombie-like folks, holding bottles of vitamins, staggering about with a squishing sound as blood oozes from their skin and pools in their shoes. All because they took fish oil supplements and vitamin E.

THE PHARMACIST SAYS: The antisupplement contingent would have you believe that dietary supplements are unproven, unregulated and potentially dangerous. Dietary supplements are in fact regulated by the FDA and the Federal Trade Commission, albeit not entirely the same way that drugs are regulated. They are proven to varying degrees, and while anything can be dangerous, they are certainly considerably less dangerous than drugs. They imply that all drugs are reliable, proven effective, and safe. Yet the news is filled with one prescription drug after another that has been found to cause dangerous side effects and problems after approval and a period of use. According to a study published in the Journal of the American Medical Association, new research shows that approximately 20 percent of recently approved prescription drugs have serious and even life-threatening side effects. One recent example is the cholesterol-lowering drug Baycol. from Bayer, which has been found to have caused more than 100 deaths before being voluntarily recalled. And there is an ongoing investigation as to how much medical research and how many published studies are tainted because of the financial ties between researchers and the companies whose products are involved in the studies. This is not to say that there is not a lot to respect and appreciation about modern medicine and the wonderful pharmaceutical agents now available to us. But let's not throw stones from the window of our, glass house.

It is hard to find an herb, vitamin, food, or human activity that does not cause some degree of thinning of the blood. This is usually a good thing. We want the blood to clot only when it is absolutely necessary (such as when we cut our finger and do not want to bleed to death). We do not want blood to clot in our blood vessels, block flow, etc. This is especially true if we have health problems that heighten this danger. That is why doctors prescribe blood-thinning drugs such as Coumadin. This is why they urge daily use of low-dose aspirin. Supplements (such as fish oil, ginkgo, and feverfew) also have a slight blood thinning action. Obviously, if you are taking Coumadin, a powerful blood-thinning agent, you need to be aware of the other things that have this since they will all work to increase the total effect. As Grandma used to say, too much is not always good.

If these various supplements have so significant an effect on blood clotting, then why not use them rather than Coumadin? They have other beneficial actions as well, so wouldn't it be better to use them as anticlotting agents if indeed they exert this action? Or why shouldn't the doctor adjust the dose of Coumadin to accommodate the anticlotting activity of vitamins and herbs rather than the other way around?

Exercise reduces blood-clotting time. Why are we not being cautioned to cut back on exercise as well if we take blood-thinning medication?

THE PHARMACIST SAYS: Recent research has confirmed the fact the substances such as fish oil (EPA/DHA) are not a potential danger to those taking blood thinning medication. This caution is voiced less and less often, even among those desperate to find fault with supplements. For more information, please go to <http://www.willner.com/news.aspx?id=58>.

Subtle Misinformation

Bias creeps into the information presented on side effects, toxicity, and safety of supplements. A good example is the supposed toxicity of vitamin B6.

In a column, "Q & A: Be Careful With B's," which appeared in the January 22, 2002, edition of The New York Times, the following question was asked: "I heard dietary supplements may contain harmful amounts of B vitamins. Which ones?"

The response indicated that niacin and vitamin B6 were potentially harmful. The comment on vitamin B6 was as follows: "The R.D.A. for vitamin B6 is two milligrams. Neurologic problems that can alter balance and sensations are associated with more than 100 milligrams a day."

The author goes on to provide a reference: "For more information, The PDR for Nutritional Supplements, edited by Dr. Sheldon Saul Hendler and David Rorvik, summarizes many studies of dietary supplements." There is also a reference to the FDA's website, where you can find recent reports of adverse reactions to dietary supplements. The implication, clearly, is that these references support the information presented by the author of the column.

Unfortunately, this is not at all the case. In fact, the book by Dr. Hendler does not support the author's warning about vitamin B6 at all. Dr. Hendler actually concludes:

"The Food and Nutrition Board of the Institute of Medicine of the U.S. National Academy of Sciences has concluded that reports and studies showing sensory neuropathy at doses of pyridoxine less than 200 mg/day are weak and inconsistent, with the weight of evidence indicating that sensory neuropathy is unlikely to occur in adults taking pyridoxine at doses less than 500 mg/day."

Back in 1983, there was a report of sensory neuropathy in seven patients who had been taking between 2,000 milligrams to 6,000 milligrams per day of vitamin B6 for two to forty months. There were other reports, again during the 1980s, of neuropathy resulting from doses ranging from 1,000 milligrams to 4,000 milligrams per day.

In addition, at about that same time, there were reports of toxicity from lower doses. These reports were evaluated and dismissed for various reasons (such as methodological flaws) as being unreliable. A detailed explanation is readily available. ("*Dietary Reference Intakes for Thiamine, Riboflavin, Niacin, Vitamin B6, Folate, Vitamin B12, Pantothenic Acid, Biotin, and Choline.*" *A Report of the Standing Committee on the Scientific Evaluation of Dietary*

Reference Intakes and Its Panel on Folate, Other B Vitamins, and Choline and Subcommittee on Upper Reference Levels of Nutrients, Food and Nutrition Board, Institute of Medicine, National Academy of Sciences, 1998. National Academy Press, Washington, D.C. (pp. 184-86).

All of this took place back in the mid-1980s. In more than twenty years, no additional evidence of vitamin B6 toxicity has been published. Certainly, no evidence in support of a contention that doses of vitamin B6 in the 100-milligrams, 200-milligrams, or even 500-milligrams-per-day level is harmful.

In fact, the Food and Nutrition Board has set the Lowest-Observed-Adverse-Effect Level (LOAEL) for vitamin B6 at 500 milligrams per day and the No-Observed-Adverse-Effect Level (NOAEL) at 200 milligrams per day.

Now, this information was also presented in Dr. Hendler's book, the very same one quoted as a reference in The New York Times column. Yet the author made the statement implying that a dose of 100 milligrams per day of vitamin B6 may be harmful.

Why then did the author say this? As we said earlier, those who have an antisupplement bias are hard-pressed to justify their sentiments. This is the best they can do.

When Not to Take Supplements

If you are trying to become pregnant, if you are pregnant, or if you are nursing, avoid using any herbal supplements, amino acids, or high-dose vitamins and minerals without first consulting your physician. A good, balanced multivitamin-multimineral, with at least 800 micrograms of folic acid, on the other hand, should be taken during this period.

If you are allergic to a supplement or any of the ingredients associated with the supplement, do not take it.

Use common sense. If the supplement raises blood pressure, don't take it if you have high blood pressure. If it lowers blood pressure, don't take it if you have low blood pressure. If the supplement stimulates the mind (or central nervous system), don't take it if you are nervous or cannot sleep. If it makes you drowsy, don't take it if you do not want to go to sleep.

If you take medication, consult with a nutritional pharmacist or knowledgeable doctor to make sure there are no contraindications or interactions. Make sure, however, that the doctor knows enough about the supplement to offer a meaningful response. Sometimes, if a doctor does not know anything about a particular nutritional or herbal supplement, he will take the path of least resistance, telling you not to use it (rather than going to the trouble of finding out what it actually is).