Fresno Family Practice
CENTER

## Vitamins and Minerals

*Which ones to take?*

I have been asked numerous times about which vitamins and minerals to take and I have decided to give you a more thought out answer than what I have given you before.

First, what are vitamins? That may sound basic but I didn't learn that answer until I was in medical school. Briefly, vitamins are chemicals that your body needs to perform certain enzyme reactions or to do something else specific. Vitamins must always be in the diet, i.e., your body cannot make these vitamins; therefore, they are *essential* chemicals that your body needs to work properly. So they are not "magic" and there is no "fairy dust" on them. Minerals are frequently used by the body as "co-factors" in enzyme reactions. If they are not present, the reaction will not occur.

Second, what happens if you don't take enough or leave vitamins or minerals altogether out of your diet? You will suffer. For example, if you don't get enough vitamin C, you can get "scurvy," which results in bleeding gums and poor wound healing.[1] Vitamin B12 deficiency leads to many ailments ranging from fatigue and depression to dementia with a demyelinating paralysis.[2] I think you can see the need to take vitamins.

How much should you take? This may sound easy enough since you can look on the bottle and see what the RDA (Recommended Daily Adult requirement) for the individual vitamins are…except that isn't the whole story. First, how is the RDA calculated? *For this, there is no science.* It is all a matter of opinion by a committee made up of both scientists who believe you must have supplements and by scientists who believe that you can get all of your nutrition from natural sources. Second, this committee then comes to a *consensus* on what the exact amount of vitamin/mineral is needed to ***prevent disease from deficiency***. This consensus is just that…consensus. If you were to check what the RDA is for people in Germany or in England, you would find differing amounts. Is it because the individuals there require more or less vitamins than we do? Of course not! It means that their committees came up with different numbers than the American committee did. So you can surmise that there is no exact science in the amount that you receive to prevent deficiency.

But does that mean that the RDA is the amount that you need each day or should you have more than that? The argument is made (and I agree with it) that you need much more than what the RDA states that you need to allow your body to perform at its optimum. For example, the RDA of vitamin C will prevent you from having scurvy but it borders on deficiency if you have a skin wound and need it for skin repair along with all of the other uses of vitamin C in your body. ***So use the RDA as the minimum amount needed and not the maximum or the norm.***

So what types of vitamins do you need? There are MANY types/brands on the market but they tend to fall into only a few categories and we will discuss them in general terms.

The most common is the "one a day" multivitamin, which means that you take one pill a day and you get your daily vitamins…at least that is the theory…except it doesn't work. A number of vitamins, especially the cheap, off-brands, do not dissolve well and you pass most out the following day into the toilet. In addition, notice the color of your urine and how soon it changes color after you take your vitamins. That pretty, bright yellow color is from thiamine, vitamin B1. Thus, the thiamine that you just took an hour before is now leaving your body. Your body took what it wanted and dumped the rest. So the problem with these "one-a-day" multivitamins is that most don't dissolve well and those that do release water-soluble vitamins into your system rapidly and your body dumps all the excess and then is in a state of "deficiency" within a few more hours until your next vitamin dose.

The more efficient and bio-available vitamins require that you must take them more than once a day. This allows for a more consistent exposure of your body to the water-soluble vitamins. The two downsides are cost and frequency of use. But is it worth it? Well, you get what you pay for when it does come to vitamins.

Not only is the frequency important but also so is the quality of the vitamin and the ingredient makeup. Each vitamin and mineral has several different salt and biochemical forms with varying degrees of bioavailability and cost. For example, if you check the vitamin E that is in your vitamin pill (look at the ingredient list), you may find that it is ***dl***-alpha tocopherol. Many

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1 This ailment was the scourge of sailors centuries ago until they found that citrus fruit prevents it, thus the term "limey" for British sailors.

2 As a side note, you should *always* take Vitamin B12 whenever you take folic acid or folate. Never take folic acid or folate alone.

physicians and nutritionists believe that the "*dl*" form is the *least active* and you should have instead the "*d*" form and some evidence **now** points to the need for only ***natural vitamin E*** forms of *tocopherols* and *tocotrienols* for the full benefit.[3,4,5]

So what are my recommendations? Well, **Juice Plus+** is probably the best overall supply of vitamins (*not minerals*) along with antioxidants and phytonutrients, including bioflavonoids and polyphenols. It is simple to take (2 capsules twice a day) and there are versions for children and for people who cannot swallow capsules. Most importantly, there is independent research that has been published in medical journals showing that **Juice Plus+** actually gets absorbed into the body and works. Look for my previous article on **Juice Plus+** in this newsletter for more information.

If you don't want **Juice Plus+**, there are a few versions that are available by prescription through AMT. These include the "**MultiBalance**" protocols that have both vitamins and minerals. There are children's versions as well. These are labeled as nutritional protocols 1 through 4. See either www.amtrx.com or the catalog in the exam rooms for more information.

So if you take the bioavailable vitamins and minerals is that all you need to have? Well, that depends on what else may be going on in your body. ***I personally believe that Juice Plus+ should be the "starting point" for your daily supplements and then you add whatever other supplements/vitamins that you may need.***

I don't recommend a "shotgun" approach of taking large amounts of multiple supplements "just because" even if they are of the highest quality. Remember that *herbs are drugs* and they will affect your body in different ways and they may also interact with your prescribed medications in varying ways. You should *always* have a reason to take each and every supplement that you swallow and you need to consider the prescription medications that you are taking.

Finally, *do not assume that if it is natural, that it must be better than prescribed medication*. Remember that a majority of the prescribed medications that are dispensed today are derived from plants. Therefore, if a choice must be made between a supplement and a prescribed medication, you should be fully informed by your physician to allow you to make an informed decision and not one based on a principle that may be flawed.[6]

There are also some "subspecialty" vitamins that some people must take. For example, if you have had a gastric bypass (stomach stapling) or you have had intestinal surgery or you are "getting on in your years", you must take vitamin B12 in a sublingual form. Taking a pill (no matter how good or how high of quality) will not work. It must be absorbed in a different pathway rather than through the intestinal tract. Sublingual vitamin B12 is available at *The Vitamin Shoppe*.

Please consider these two important options (**Juice Plus+** and **UltraBalance** nutritional protocols) when you are searching for the right supplements.

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**3 Jiang Q, Elson-Schwab I, et.al. Gamma-tocopherol and its major metabolite, in contrast to alpha-tocopherol, inhibit cyclooxygenase activity in macrophages and epithelial cells. Proc Natl Acad Sci U S A 2000 Oct 10;97(21):11494-9.**

**4 Christen S, Woodall AA, et.al. Gamma-tocopherol traps mutagenic electrophiles such as NO(X) and complements alpha-tocopherol: physiological implications. Proc Natl Acad Sci U S A 1997 Apr 1;94(7):3217-22.**

**5 Han-Yao, H. and Appel, LJ. Supplementation of Diets with α-Tocopherol Reduces Serum Concentrations of γ-and δ-Tocopherol in Humans. J. Nutr. 133:3137-3140, October 2003.**

**6 For example, many people believe that policosanol is very effective in lowering cholesterol and is less harmful than the prescribed statin drugs, e.g., Lipitor® or Crestor®. While there are less side effects and it is less harmful, it is also *less powerful* to control your cholesterol and it also does not have the anti-inflammatory properties that statins have been shown to have.**