

ARE NUTRITIONAL SUPPLEMENTS REALLY NECESSARY FOR BETTER HEALTH?

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----- David L. Watts, Ph.D., Director Of Research -----

This is a question frequently asked by those who are starting on nutritional therapy. The question is often followed or preceded by another question, "Why can't we get all the nutrients we need from our foods?" It is true we derive nutrients from our foods, however, whether they are optimal or not is another question. It is obvious by the many maladies that plague the people living in the U.S., that many of us are just getting by on the nutrients we receive from our food supply and are not really functioning at optimal levels of health.

Research has shown that not all of the minerals and other nutrients found in our foods are efficiently absorbed and utilized by our bodies. If they were, we could then simply achieve and maintain optimum nutritional balance by following proper eating habits alone. We would neither become deficient in nutrients nor would we build up excesses. Unfortunately, this is not the case. As DeWayne Ashmead stated in *Chelated Mineral Nutrition In Plants, Animals And Man*, "There are at least eighteen barriers to mineral absorption, which means that the minerals we consume do not necessarily wind up in our bodies." Our nutritional mineral status is very important. In his book *Diet And Disease*, Dr. Emanuel Cheraskin writes, "Minerals have interrelationships with every other nutrient. Without optimum mineral levels in the body, the other nutrients are not effectively utilized."

As a general rule, the nutrient concentration in the foods we consume can only be as high as our soils will allow. If a mineral deficiency develops in our soils, then so it will be in our foods and ultimately in the people or animals that consume the plants. Today, soil content is hugely manipulated by man. This manipulation is not necessarily concerned with the most proper balance of nutrients, but with what will make the crops grow larger and faster. In addition, concern is placed on whether the food will appear attractive to the consumer. As an example, a University in southern California, agricultural department, developed a tomato that was called a Cairo red. It contained over thirty percent more nutritional value of vitamins and minerals than the average tomato. This boom to mankind did not receive as much attention as you might think. The reason being, it had a different coloration from the bright red tomato that you traditionally see in the market place. Therefore, it was not further developed, based upon the premise that the general public buys foods that are pleasing to the eye rather than for the nutritional content.

Animals that are raised for our food supply are also manipulated in regards to their nutritional intake. They are subjected to hormones, antibiotics, and other chemicals that will help them grow fatter and quicker. In fact, at one time, arsenic a known toxic metal was put into the feed of pigs, as it aided in increasing their weight before slaughter.

The balance of nutrients and minerals in soils are just as important for plant growth and health as they are to the human body. For normal growth of plants a proportionate supply of minerals must be present. An overabundance of a mineral can be as detrimental as a deficiency. Failure of plants to utilize a certain mineral can be due to an excess or even a shortage of another element. Just as it is with the human body, not only should minerals be available for the plant, but they must be in a proper balance or ratio. Unfortunately, the cumulative effects of crop production by agribusiness have greatly reduced the limited supplies of minerals originally present in our soils. This has resulted in the use of synthetic nutrient delivery systems and superphosphate fertilizers to sustain continued use of depleted soils. Widespread use of these super phosphate fertilizers which are high in heavy metals, can contribute to excessive amounts and accumulation of these same toxic elements in the soils. The term heavy metal means that it has higher atomic weight than the other nutrient minerals. A heavy metal will displace or overpower a mineral with a lower atomic weight. As an example, cadmium and lead will displace nutritional minerals in the soil such as zinc, copper, calcium and iron. If plants have a lack of these protective nutrient minerals available to them, the toxic metal content will rise in the plants grown on these soils and its total nutritional value will then be markedly reduced, including enzyme and vitamin content. Since vitamins do not exist in the soil, but are produced by the plants via the minerals that are available to them, we can again see the importance of mineral balance, i.e. ratios. Another potential source that can contribute to nutritional imbalance throughout the food chain is modern day pesticides. Pesticides introduce heavy metals, which can accumulate in the soil, plants, animals, and eventually man. Refinement of some plants such as grains can further remove nutrient minerals and leave a relatively higher concentration of heavy metals present in the finished product. For example, the refining of plants can contribute to mineral imbalances not only in our foods but ultimately in our bodies as well. When whole wheat is refined into white flour, there is a 40% loss of chromium, 86% loss of manganese, 78% loss of zinc, and a 68% loss of copper. Important vitamins are also lost in great quantities.

Even though a particular food may be high in minerals, they may not necessarily be utilized by the body for various reasons. Dr. Ananda Prasad who studied the effects of zinc deficiency on Iranian dwarfs, found that the Iranians did in fact consume large amounts of zinc, but still suffered from zinc deficiency, which was contributing, to their dwarfism and lack of development of secondary sexual characteristics. The deficiency symptoms quickly responded when zinc supplementation was instituted. The problem was that their main food source although high in the mineral zinc was also very high in phytates. Phytic acid is a form of phosphate, which combines with zinc and other minerals forming an insoluble compound thereby rendering it non-utilizable and non-absorbable. Another example of this is the consumption of mother's breast milk as compared to cow's milk in infants. A child consuming an exclusively dairy food formula, which has a high zinc content, will oftentimes suffer from a zinc deficiency as indicated by blood tests. However, children consuming mother's breast milk, which is low in the mineral zinc usually show no zinc deficiency. The reason for this is that zinc in breast milk is much more bio-available than the zinc in cow's milk.

A mineral deficiency can develop due to an excess intake of another nutrient mineral or toxic metal. As mentioned previously, the toxic metal cadmium will inhibit zinc uptake by the plant. However, this mechanism is also the same in humans. Consuming foods that are high in cadmium, in the presence of a zinc deficiency, will enable the cadmium to be absorbed more

easily, and will also prevent zinc absorption. In addition, excess accumulation of cadmium can contribute to excessive sodium retention within the body. This accumulation of sodium can occur even though sodium is not consumed in high amounts. The effect of cadmium contributing to hypertension, has been well documented by Dr. Henry Schroeder, MD., "The Trace Elements and Man".

It should also be noted that a mineral excess can develop if a deficiency of another mineral exists. As an example, the mineral copper can accumulate in the body tissues when there is a zinc deficiency. These two minerals are mutually antagonistic to one another. However, over consumption of one will produce a deficiency of another. Or, a deficiency of one may allow another to accumulate to excessive levels. It has also been found that a lack of copper in the diet can decrease the ability of the body to utilize iron, thus contributing to toxic levels of iron accumulation in the liver.

Minerals also need other factors for their absorption. Iron cannot be absorbed in an alkaline media, therefore, adequate hydrochloric acid secretion is necessary in the stomach for iron to be absorbed. If a person were suffering from a hydrochloric acid deficiency, it would be nearly impossible for them to get iron from the plants or animal products in sufficient amounts to correct for any possible deficiency.

The ability to absorb a nutrient is also greatly dependent upon individual biochemical types. Dr. Roger Williams in his book "Biochemical Individuality" points out that individual requirements varied drastically. Even though serum studies did not vary significantly, he reported studies on two children living in the same environment and consuming the same foods. One child retained approximately 264 milligrams of calcium per day, but the other 78 percent more. In another study on 19 healthy male subjects, they found that their total requirements for calcium varied from 222 milligrams to 1018 milligrams per day. One individual was found to only need 225 milligrams of calcium per day to maintain a calcium balance while another receiving 261 milligrams per day was actually losing 256 milligrams per day.

Another question often asked is "Why can't I take a multivitamin and mineral so my body can take what it needs? While this would certainly make things much easier, we simply cannot take a daily dose of all the nutrients known to man and expect our body to take what it needs and discard the rest. The reason being, is that vitamins and minerals not only work together, but they work against each other as well. Calcium absorption is decreased in the presence of phosphorus and magnesium. Magnesium absorption is diminished in the presence of excess sodium and potassium. Potassium absorption is reduced by calcium and magnesium, iron is affected by calcium, copper, nickel and cobalt. Zinc is not well absorbed when copper, iron and/or calcium is present in large amounts. As for the vitamins, vitamin A can be antagonized by vitamin E. Iron competes with vitamin B2, and copper competes with pantothenic acid for absorption.

Trace Nutrient™ supplements are formulated based upon the understanding of these many nutrient interrelationships. Trace Nutrients™ uses only full spectrum amino acid chelated minerals, which are more efficiently absorbed by the body. Additionally, the Trace Nutrients™ product line provides formulas in which the nutrients do not compete for absorption among themselves. In fact, the majority of the Trace Nutrients™ products are synergistically formulated to enhance absorption and metabolic utilization. For instance, the Metabolic Packs separate the antagonistic factors among the vitamins, minerals, anti-oxidants, etc., thereby providing only those synergistic ingredients for optimal absorption and utilization.

As we can see, to effectively correct a nutritional imbalance, specific requirements should be taken into consideration. First and foremost, biochemical individuality should be recognized and considered. Specific individual needs, not a broad-spectrum shotgun approach will yield the most timely, cost-effective and result-oriented outcome that can be attained in improving one's health.