

# VITAMINS and MINERALS

from DAN'S  
HAND



DAN YOUNG IS THE FOUNDER & PRESIDENT OF SIMPLE AGAIN. HE HAS COMPETED IN BODY BUILDING AS WELL AS ENDURANCE ATHLETIC EVENTS & IS CERTIFIED IN PERSONAL TRAINING & SPORTS NUTRITION.

Much attention is all too often given to the macronutrients (i.e. protein, carbohydrates and fats) and why not? Understanding the correct ratios and timing of them can make a profound difference between success and failure in the gym. But what about the little guys? Can micronutrients help too?

### **Vitamins and Minerals**

Micronutrients are present in your diet and in your body in small amounts. They represent only about 4% of your body's total weight. They are measured in milligrams and micrograms, and are organic compounds that the body needs for the maintenance of good health and for growth. Vitamins can not be manufactured by the body; therefore you must get them from food. They are not usually metabolized for energy, but some are essential for the production of energy from the macronutrients you eat by acting as cofactors in making molecules. In addition, they play various structural roles, and function as electrolytes and enzymes. Minerals on the other hand, are inorganic nutrients that are essential structural components in the body and necessary for many vital metabolic processes.

Your body may only need infinitesimal amounts of vitamins and minerals in your daily diet, but they can have big implications on one's overall health, as well as giving you that critical edge when competing, or just losing those last 5 pounds. For example, the average person may only need 30 milligrams of Vitamin C in their diets daily to remain healthy. But, remove this valuable vitamin and watch your health decline into a pernicious state of scurvy. Screw with your micronutrients and they can screw with you.

### **More Micronutrients**

In addition to the essential vitamins and minerals, a host of micronutrients exist that are manufactured in the body but that can also be provided through foods or supplements for additional benefits. These substances, called metabolites, are also sometime known as accessory nutrients. For athletes, many of these accessory nutrients can improve performance. Carnitine for instance — essential for the oxidation of long-chain fatty acids into energy — has been shown to benefit fat metabolism and increase endurance when taken in supplemental amounts. Inosine is touted for its energy-enhancing effects and usefulness in

power sports. Creatine has now been proven to effect strength and endurance.

### **How Much?**

Until the late 70s, vitamins and minerals were only researched to determine levels needed to avoid deficiencies. Today however, more and more research is concluding that specific levels of Micronutrients can affect performance. If you exercise, whether in the gym, pool, track or on the court, you put your body through stress. Different exercises require different levels of nutrition. When you stress your body, more specific nutrients are required for repair. Finding the right levels and types for you is as personal as your toothbrush. It's hard enough getting the right ratios of carbs, protein and fats, and now you need to worry about vitamins and minerals too? Don't sweat it. If you already focus on eating the proper ratios of quality macros (approximately 55/30/15% respectively) and then make sure the sources of those macros are good as well (meaning your carbs are coming from organic and natural whole grains, veggies, legumes and fruits, your proteins are from free-range and organic beef, poultry and fish, and your fats are healthy ones from olive oil, nuts, fish and flax), then chances are you are also receiving the necessary vitamins and minerals to yield good health.

### **Athletes Require More**

Because of the level of processing most of our foods undergo (not to mention soil degradation and the stresses of exercise), there is a good chance that a diet filled with more processed foods than organic whole foods is not going to provide the necessary micronutrients to help you achieve your goals. Combine this with poor eating choices and ineffective timing, and you can imagine that you are probably not receiving optimum nutrition.

Supplements can absolutely top off your tank and help you reach optimum nutrition. Do your research first and remember too much can be just as harmful as too little.

Eat Well!

*\*Excerpts taken from Maximum Performance by Daniel Gastelu and Fred Hatfield.*

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