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Stamina Caps™

Stamina is an excellent measure of fitness. In fact, many people assume that they are physically fit, and they may be able to adequately perform specific actions of strength, but a true measure of their fitness level lies in whether they have the physical endurance, the stamina – per say, to perform physical activity for prolonged periods of time without quickly faltering or tiring. Training can correct strength inadequacies relatively quickly, but it takes more to significantly increase the body's endurance levels. A combination of dietary modification and targeted nutritional support can enhance conditioning training to increase the body's endurance levels more rapidly and to a greater extent. Specific nutrients, in combination, can play a role in increasing endurance and promoting energy production, while also enhancing metabolism. **Stamina Caps™** are yet another unique product exclusive to Biotics Research. It has been specially formulated to support physical stamina and mitochondrial energy conversion. **Stamina Caps™** contain a specific blend of Thiamin, a metabolic cofactor. Decreased levels of thiamin have been associated with impaired immunity, muscle or nerve loss, and impaired metabolism of carbohydrates and branched-chain amino acids. Pantothenic Acid is required for mitochondrial energy production and is an essential part of the enzyme Coenzyme CoA, which is involved in the synthesis of essential fats, cholesterol, steroid hormones, and neurotransmitters. A deficiency of pantothenic acid is associated with fatigue, listlessness, insomnia, and altered mood. Coenzyme Q10 is mandatory for mitochondrial energy production. It is known to be cardioprotective, cytoprotective, and neuroprotective. CoQ10 is readily depleted during periods of stress or injury, and low levels of CoQ10 are almost always found in those with poor stamina. L-Carnitine is an amino acid that plays an essential role in carbohydrate metabolism. It is required for the transportation of fatty acids into the mitochondria for oxidation. L-Carnitine deficiency is associated with mitochondrial energy deficit, fatigue, weakness, muscle spasm, and delayed-onset muscle soreness (DOMS). OOrganik-15™ is included as it supplies methyl donors and acceptors which are necessary for the synthesis of creatine in the muscle – which has been shown to help maintain muscular ATP concentrations. Octacosanol (derived from rice-not wheat) is also provided and has been demonstrated to improve reaction time to visual stimuli. This may not be important to a jogger, but could be very important to someone who plays competitive tennis, baseball or participates in martial arts. **Stamina Caps™** is an excellent adjunct for patients who could benefit from improved endurance or improved cardiovascular fitness.



Research Pertaining to Other Topics of Interest

Vitamin K1 deficiency, coronary calcium (CAC) progression, and anti-hypertension drugs. In a multi-ethnic study of atherosclerosis using a case-cohort design, researchers measured 296 participants with extreme CAC progression and 561 randomly selected participants without extreme CAC progression. Subjects had baseline and follow-up CAC measures, with a 2.5 year mean follow-up. Outcomes were replicated by using pros hoc per-protocol analyses of a vitamin K1 supplementation trial. Interestingly, a significant interaction between low vitamin K1 and anti-hypertension medication use was detected. Hypertension med users with low serum K1 were more likely to have extreme CAC progression than med users without extreme CAC progression. In replication, baseline antihypertensive med users in the supplementation group had less CAC progression than those in the control group. In other words, low serum vitamin K1 was significantly associated with CAC progression in antihypertension medication users.

J Kyla Shea et al. Association between circulating vitamin K1 and coronary calcium progression in community-dwelling adults: the Multi-Ethnic Study of Atherosclerosis. *Am J Clin Nutr.* published online before print May 29, 2013