Dynamic Chiropractic

SPORTS / EXERCISE / FITNESS

News of Interest III

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This third installment of "News of Interest" highlights recent studies that contain information to support immediate clinical application for the average doctor of chiropractic.

Generally most world-class athletes go beyond the point of good health when participating in their sport or event. As more Americans exercise, they look to pros as role models and emulate their training. Unfortunately the average man or woman often injures themselves when they participate in a training program designed for elite competitors.

Running the marathon, even for highly trained athletes, puts a tremendous strain on the body. A recent study involving 92 marathon runners placed 46 of the athletes on 600 mg of vitamin C a day for three weeks prior to the race. The control group was given placebo citric acid pills for the same three-week period. Both groups were monitored for the two weeks following the event. Researchers found that 68 percent of those who did not take vitamin C complained of signs and symptoms consistent with an upper respiratory infection. Only 33 percent of the vitamin C group complained of upper respiratory signs and symptoms. This adds to a growing body of evidence that indicates that for many people (for example, athletes, the sick or injured) the RDAs are far from optimal.[1]

I found a couple of interesting vitamin B6 studies: the first involves vitamin B6 and carpal tunnel, which is nothing new for chiropractors. However, there have been some studies recently, based on electrodiagnostic testing, that state that B6 does not help carpal tunnel sufferers. This new study was quite interesting: it examined carpal tunnel patients who consumed 200 mg of vitamin B6 a day for three months. Their improvement on electrophysiologic testing was only mild, however when their pain scores and questionnaires were tallied and compared, there was a significant reduction in their subjective complaints. Also noted was the fact that in none of the 20 patients were there any signs and symptoms of B6 toxicity.[2]

The next vitamin B6 study involved supplementation of only 20 mg per day for three months to males between 70 and 79 years of age. The test group was compared to a control group ingesting a placebo tablet. The researchers found that B6 reduced long-term memory loss. I felt this was significant for a number of reasons. Only 20 mg of B6 were used, which for progressive practitioners of clinical nutrition is a very low dose, but conversely is 10 times the RDA of 2 mg. Also interesting was the fact that memory enhancement was present with just B6 alone. One must question what would happen if the entire B-complex as well as other water and fat-soluble vitamins and minerals were given to these subjects.[3]

Here are two more studies in what is already a massive accumulation of data for the positive aspects of vitamin C: The first involves administration of C to males between age 20 and 35 who consumed cigarettes. Three groups received either a placebo, 200 mg of vitamin C, or 1,000 mg of vitamin C

daily. Researchers then examined the quality of sperm. Previous studies have noted that nicotine and/or its metabolites can damage sperm (most likely oxidatively). It was not surprising that those in the study who consumed the greatest amount of vitamin C (1,000 mg) had the highest improvement in the quality of their sperm. I feel studies like this can be extrapolated for other fertility problems. It only makes sense that with patients who are not able to conceive successfully, one must look at the nutrition and lifestyle status. Cleaning up the diet of both partners as well as insuring there is an adequate nutrient pool would definitely, in this author's opinion, increase the chances of conception.[4]

The second study looked at muscle pain after a single bout of eccentric lower leg exercise. Athletes were divided into two groups, with one group taking 1 gm of vitamin C, three times per day, and the other a lactose placebo. The test period ran seven days, with athletes receiving either supplement or placebo three days prior and four days following the test workout. The vitamin C group reported a 25-44 percent decrease in muscle soreness after exercise.[5] This study raises some interesting questions, the first being what is the optimal dose of vitamin C for athletes? Another question would be what effect, if any, other members of the antioxidant family would have in a trial such as this? Lastly, I would like to see this study repeated with a control group, and with a larger variety of exercises. In the meantime, I will continue to recommend vitamin C in doses exceeding the RDA for athletes under my care.

I thought this next study was fascinating. Researchers found that individuals who are at risk for kidney stones, or who have had them in the past, can decrease their chances of recurrence with an increased calcium intake. This directly contradicts what for years has been the standard of monitoring the intake of calcium in those patients who have a high risk of kidney stones. A prospective study of the amount of calcium intake of those at risk of symptomatic kidney stones demonstrated that those patients who consumed larger amounts of calcium decreased their risk of kidney stone. What does this mean? I feel this means that now, in addition to our old standby of vitamin B6 and magnesium, calcium of 800 to 1,200 mg per day should be added into your therapeutic regimen.[6]

Those of you who are regular readers of this column will remember a past article where I was very critical of companies who added the trace mineral boron to formulas marketed to young, male athletes. There was a great deal of hype that boron would increase their testosterone levels. This was based on one study that showed a mild increase in serum testosterone with boron supplementation in a group of postmenopausal women.[7] I recently found a study on boron in a group of people many sports nutrition companies were targeting. Nineteen male body builders ranging in age from 20 to 27 years were given either 2.5 mg of oral boron or a placebo daily for a seven-week period. Plasma total and free testosterone were measured, and guess what they found? Boron supplementation had no effect on strength, lean body mass, or testosterone levels.[8] Sadly, this will not teach all the companies who marketed a substance, whose benefits were clearly based on what I refer to as creative extrapolation and not sound science, to act responsibly. They will happily chase, package, and sell the next rainbow to a naive public. Unfortunately, this gives the FDA more ammunition in its attempt to ruin an entire industry.

Finally, I came across a study comparing organic versus commercial fruits and vegetables. Over a two year period, apples, pears, potatoes, and corn were purchased based on similar specimen size and variety. Also analyzed were organic whole-wheat flour and wheat berries versus commercial varieties. Not surprisingly, the average elemental concentration in the organic food group on a fresh weight

basis was approximately double that of commercial products. The elements analyzed included boron, calcium, chromium, cobalt, copper, iodine, iron, lithium, magnesium, manganese, molybdenum, nickel, phosphorus, potassium, selenium, vanadium, and zinc. Aluminum, cadmium, lead, and mercury levels were also measured and, not surprisingly, were higher in commercially grown food.9 The author admitted this was not a perfect study, however it is my opinion that this is an excellent first step in the process to validate what many DCs have known for years: Organically grown fruits and vegetables are superior to commercial varieties. I would not be surprised that as we continue to expand our nutritional knowledge and learn more about the content of whole foods, the differences in the health value of organic versus commercial food will increase significantly.

REFERENCES

1. Peters & Edith, et al: Vitamin C supplementation reduces the incidence of post-race symptoms of upper respiratory tract infection in ultramarathoners. American Journal of Clinical Nutrition, 57:1993.

2. Bernstein Allen, et al: Effective pharmacologic doses of vitamin B6 on carpal tunnel syndrome, electroencephalographic results, and pain. Journal of American College of Nutrition, 12(1):1993.

3. Deijen JB, et al: Vitamin B6 supplementation in elderly men. Effects on mood, memory, performance, and mental effort. Psychopharmacology, 109:1992.

4. Dawson, et al: Effective ascorbic acid supplementation on sperm quality of smokers. Fertility and Sterility, 58(5):November, 1992.

5. Kaminski & Boal: An effect of ascorbic acid on delayed onset muscle soreness. Pain, 50:1992.

6. Willet, et al: A prospective study of dietary calcium and other nutrients on the risk of symptomatic kidney stones. New England Journal of Medicine, 3(28):1993.

7. Neilsen & Hunt, et al: Effect of dietary boron on mineral, estrogen, and testosterone metabolism in postmenopausal women. FASEB J, 1:394-397, 1987.

8. Ferrando A, Green N: Effect of boron supplementation on lean body mass, plasma testosterone levels, and strength in male body builders. International Journal of Sports Nutrition, 3(2):June 1993.

9. Smith BL: Organic foods versus supermarket foods mineral levels. Journal of Applied Nutrition, 45(1):1993.

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