

# The Nutrition Reporter™

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The independent newsletter that reports vitamin, mineral, and food therapies

## Nutritional Testing and Individualized Supplements Reduce Violent Behavior

Using vitamins, minerals, and other micronutrient supplements can greatly reduce the frequency of physical assaults and destructive behavior, according to a study conducted at the Pfeiffer Treatment Center, Warrenville, Illinois.

William J. Walsh, PhD, and his colleagues analyzed data on the treatments of 207 consecutive (random) patients over a four-month period. The patients included both men and women, with an age range of three to 55 years. The center has treated more than 8,000 patients with behavior disorders.

Rather than use a single type of nutritional supplement, Walsh and his colleagues performed nutritional and biochemical workups on each patient. Based on the findings, such as nutritional deficiencies or inborn errors of metabolism, supplement regimens were individualized for each patient.

The basic rationale was that a variety of nutrients are involved in the brain's production of neurotransmitters, such as serotonin, dopamine, and gamma-amino butyric acid (GABA). Nutrient therapies were used to normalize neurotransmitter levels.

Seventy-six percent of the patients followed their treatment plan. The frequency of assaults decreased by 92 percent, and the occurrences of property damage declined by 53 percent.

Walsh found that nearly all of the patients had one of seven biochemical and nutritional disorders, and many had more than one of these disorders.

Three-fourths of the patients had excessive levels of copper relative to zinc. "Behavior disorders associated with this imbalance include episodic rage disorder, attention deficit disorder, and hyperactivity," wrote Walsh. "Treatment involved...using zinc, cysteine, and manganese, together with augmenting nutrients such as pyridoxine, ascorbic acid, and vitamin E."

About one-third of the tested patients had problems with glucose tolerance, which appeared to be an "aggravating factor," not a cause of behavioral disorders. "The treatment included supplements of

chromium and manganese, along with dietary modifications," added Walsh.

The other biochemical disorders included overmethylation (treated in part with folic acid), undermethylation (treated in part with methionine), pyroluria ((treated in part with vitamin B6 and zinc), heavy-metal overload (treated in part with antioxidants), and malabsorption (treated in part with digestive enzymes).

Reference: Walsh WJ, Glab LB, Haakenson ML. Reduced violence behavior following biochemical therapy. *Physiology & Behavior*, 2004;82:835-839. □

### Perspectives...

#### What to Make of Vitamin E?

In November 2004, researchers reported in a medical journal that, contrary to a huge body of positive scientific evidence, high doses of vitamin E supplements increased the risk of death by 5 percent. This negative study had so many flaws that it should have never been published.

I'll explain why:

First, the researchers looked at "all-cause mortality" in 19 previously published vitamin E studies. Many of these studies had previously shown reductions in heart disease, Alzheimer's, and death. But all-cause mortality lumped together everything, including people who might have gotten hit by a car.

Second, the researchers arbitrarily divided the 19 studies into two groups. The high-dose studies included those that used dosages of 400 IU and above, whereas the low-dose studies included those with less than this amount. But while most of the low-dose studies used 16-60 IU of vitamin E, this group also included three studies with relatively high doses of vitamin E, specifically 330 and 200 IU. If these three studies had been included in the high-dose group—as they should have been—the results would have been clearly different.

Third, the researchers acknowledged that the

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highest dosages were taken by the most critically ill, near-death patients. That's a good way to associate *anything*, even drinking a glass of water, with death and make it sound scientific.

Finally, the researchers admitted that their findings have no bearing on healthy people. Yet they still recommended that people not take vitamin E.

The *New York Times* reported that "the adverse effect was tiny." This reminded me of the 1996 CHAOS vitamin E study, which found a 77 percent reduction in nonfatal heart attacks (400-800 IU daily), but a very slight increase in fatal heart attacks. It wasn't until over a year later that another analysis of the data found that the increase in deaths was among people who were asked to take vitamin E, but chose not to.

I've been taking vitamin E for 35 years and am continuing to take it. Note the following study. -JC

### **Vitamin E Supplements Lower Risk of Dying from Neurological Disease**

A study of almost 1 million Americans has found that people who regularly take vitamin E supplements have a low risk of developing amyotrophic lateral sclerosis (ALS), a crippling disease known also as Lou Gehrig's disease. Furthermore, the longer they took vitamin E, the lower that risk became.

Alberto Ascherio, MD, of the Harvard School of Public Health and his colleagues tracked the health of 957,740 men and women 30 years of age or older. The subjects were first assessed in 1982, then followed up for ALS deaths from 1989 through 1998. During this time, 525 deaths were related to ALS.

People who regularly took vitamin E supplements for 10 years or less were 41 percent less likely to die from ALS. But those who regularly took vitamin E for 10 or more years were 62 percent less likely to die from ALS, compared with nonusers of the vitamin.

No associations were found between ALS and the use of either multivitamins or vitamin C, according to Ascherio.

The benefits of vitamin E were "most likely caused by a reduction in ALS incidence rather than an improved prognosis," he wrote. Previous experiments with animals found that vitamin E delayed the onset of ALS but not its progression.

ALS is caused by several mutations in the gene responsible for copper-zinc superoxide dismutase (SOD), one of the body's key antioxidant enzymes.

Reference: Scherio A, Weisskopf MG, O'Reilly EJ, et al. Vitamin E intake and risk of amyotrophic lateral sclerosis. *Annals of Neurology*, Nov 4, 2004; 56: epub ahead of print. □

### **Coenzyme Q10 Corrects Heart Problems Caused by Statin Drugs**

Supplemental coenzyme Q10, a vitamin-like nutrient, can prevent a reduction in heart function in people taking statin drugs, such as Lipitor.

Marc A. Silver, MD, of the University of Illinois' Advocate Christ Medical Center, Oak Lawn, and his colleagues studied 14 men and women with moderately elevated cholesterol levels but no other signs of heart disease. The patients took 20 mg of Lipitor (atorvastin) daily for three to six months.

Silver and his colleagues noted that 10 of the 14 patients developed a worsening of left ventricular diastolic heart performance. Heart function was based on changes in at least one of three standard clinical measures.

The symptoms of reduced left ventricular diastolic heart performance could include fatigue and shortness of breath, eventually leading to congestive heart failure.

Silver and his colleagues then gave those 10 patients 100 mg of CoQ10 three times daily.

Four of the patients benefited from a complete reversal of the declines in heart performance, based on improvements on all three clinical measures. Another four patients improved to varying degrees. One patient did not.

Approximately one-third of heart failure cases results from decreases in diastolic heart function.

Previous research has shown that statin drugs reduce blood levels of CoQ10, which can be a factor in skeletal muscle weakness and heart failure. Statins work by reducing activity of an enzyme involved in cholesterol production, but the same enzyme is also involved in the body's synthesis of CoQ10.

CoQ10 functions as an antioxidant as well as a compound involved in energy production within cells, particularly muscle cells.

Reference: Silver MA, Langsjoen PH, Szabo S, et al. Effect of atorvastatin on left ventricular diastolic function and ability of coenzyme Q10 to reverse that dysfunction. *American Journal of Cardiology*, 2004;94:1306-1310. □

### **Low-Dose Antioxidant Supplement Shows Benefits in Cancer, Risk of Death**

A daily supplement containing low levels of antioxidants can significantly reduce the risk of cancer—and death from *any* case. That's the finding of a French-led team of international researchers.

"Epidemiological data from cross-sectional, case-control, and prospective studies have indeed shown a strong relationship between the intake of antioxidant vitamins and minerals, or of foods rich in

these nutrients, and the risks of cancer and ischemic cardiovascular disease," wrote Serge Herberg, MD, PhD, of the National Institute of Health and Medical Research, Paris.

Herberg and his colleagues asked 13,000 men and women, ages 35 to 60, to take either a low-dose antioxidant supplement or a placebo for an average of 7.5 years. The supplement contained 120 mg vitamin C, 30 mg vitamin E, 6 mg beta-carotene, 100 mcg selenium, and 20 mg zinc.

Men seemed to gain the most benefits from the supplement. They had a 31 percent lower risk of developing cancer, mostly cancers of the thyroid, urinary tract, skin, respiratory tract, digestive tract, and mouth.

The men taking antioxidants also had a 37 percent lower risk of death from any cause.

The lack of benefit from supplements among women may have been related to their better eating habits, the researchers noted.

Large numbers of men in the study had low blood levels of beta-carotene when the study began. Those low beta-carotene levels may have reflected a diet with few fruits and vegetables.

Even after taking antioxidant supplements for years, the men had blood levels of beta-carotene comparable to those of women who had been taking placebos.

"In conclusion, our results suggest that an adequate and well-balanced supplementation of antioxidant nutrients, at doses that might be reached with a healthy diet that includes a high consumption of fruits and vegetables, had protective effects against cancer in men," Herberg and his colleagues wrote.

Reference: Herberg S, Galan P, Preziosi P, et al. The SU.VI.MAX study. *Archives of Internal Medicine*, 2004;164:2335-2342. □

## **Pycnogenol® Supplements Reduce Pain Associated with Menstrual Cycles**

Supplements of Pycnogenol, a natural complex of antioxidants extracted from the bark of French maritime pine trees, can reduce abdominal and back pain in menstruating women.

Takafumi Kohama, MD, of the Keiju Medical Center, Nanao, Japan and colleagues used Pycnogenol to treat 47 women, ages 21 to 45 years, with menstrual pain. The women were asked to take 30 mg of Pycnogenol twice daily, beginning on the eighth day of the first menstrual cycle and continuing until the seventh day of the third cycle.

Pycnogenol resulted in a significant decrease in abdominal pain by the second menstrual cycle, compared to pretreatment pain levels.

Back pain took longer to improve, but it was

reduced significantly by the third cycle.

"Dysmenorrhea is characterized by spasmodic symptoms, such as severe abdominal and back pain...thought to be caused by elevated levels of the inflammatory prostaglandin F29 and E2," according to Kohama.

During the course of the study, patients required fewer and fewer analgesic drugs to relieve pain.

Previous animal studies have found that ferulic acid and caffeic acid, two of the antioxidants in Pycnogenol, can reduce uterine spasms.

Reference: Kohama T, Suzuki N, Ohno S, et al. Analgesic efficacy of French maritime pine bark extract in dysmenorrhea. *Journal of Reproductive Medicine*, 2004;49:828-832. □

## **Fish Oil Consumption Reduces Risk of Advanced Prostate Cancer in Men**

High intake of "fish oils" – eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) – significantly reduces the risk of advanced prostate cancer. However, in a perplexing contrast, diets high in alpha-linolenic acid (ALA), the precursor to EPA and DHA, seem to increase the risk.

Michael F. Leitzmann, MD, of the National Cancer Institute, and colleagues tracked the health of almost 48,000 American men for 14 years. At the beginning of the study, the men ranged from 40 to 75 years of age and had no history of cancer.

During follow up, 2,965 cases of prostate cancer were diagnosed, of which 448 were advanced prostate cancer cases. The distinction is important because most men with prostate cancer die of other unrelated causes.

Leitzmann found that men with the highest intake of ALA, from meat, dairy, and vegetarian sources, had the greatest risk of developing advanced prostate cancer – up to twice the risk.

In contrast, men with the highest intake of EPA and DHA had a 26 percent lower risk of advanced prostate cancer.

Why would ALA, the parent molecule of EPA and DHA, increase the risk of prostate cancer?

Leitzmann wrote that ALA can serve in a "limited capacity" as a precursor to EPA and DHA, suggesting that pure EPA and DHA might be preferable.

He wrote that ALA may not be as effective as EPA and DHA in displacing pro-inflammatory omega-6 fats from cells or in inhibiting production of pro-inflammatory prostaglandins.

Reference: Leitzmann MF, Sampfer MJ, Michaud DS, et al. Dietary intake of n-3 and n-6 fatty acids and the risk of prostate cancer. *American Journal of Clinical Nutrition*, 2004;80:204-216. □

## Quick Reviews of Recent Research

### • **Multivitamins reduce chance of premature birth**

In a study of 2,000 women, researchers found that women who took multivitamins before conception had half the risk of delivering an infant prematurely.

Vahratian A, et al. *American Journal of Epidemiology*, 2004; 160(9): 886-892.

### • **Supplements calm excitable children**

In a study of 50 hyperexcitable children, researchers found that half of the subjects had low blood levels of magnesium. All of the children were subsequently given a supplement containing magnesium and vitamin B6. All benefited from reduced symptoms after one to six months. The symptoms of hyperexcitability included instability, aggressiveness, inattention at school, and twitchiness.

Mousain-Bosc M, et al. *Journal of the American College of Nutrition*, 2004;23:545S-548S.

### • **Beta-carotene may improve allergies**

Researchers tested the effects of beta-carotene on laboratory mice that had been allergically sensitized to albumin, a protein in egg white. Mice fed beta-carotene had significantly lower levels of two allergy-promoting antibodies, IgE and IgG1, compared with mice not receiving the antioxidant. Furthermore, mice consuming beta-carotene did not experience decreases in body temperature after being exposed to an allergen.

Sato Y, et al. *Biological & Pharmaceutical Bulletin*, 2004;27:978-984.

### • **Lycopene shows benefits in prostate cancer**

Twenty men with metastatic prostate cancer were treated with 10 mg of lycopene daily. All had previously failed to respond to hormone therapy. One patient responded dramatically to the lycopene, and six others had a partial response. The disease remained stable in 10 patients and advanced in three others. Most patients also had decreases in bone pain and blood levels of prostate-specific antigen.

Ansari MS, et al. *Urologic Oncology—Seminars and Original Investigations*, 2004;22:415-420.

### • **Dietary fat influences vitamin E absorption**

Researchers measured the absorption of vitamin E in eight healthy subjects who were fed high-fat, low-fat, and zero-fat meals. Vitamin E absorption was greatest with the high-fat meal.

Jeanes, YM, et al. *British Journal of Nutrition*, 2004;92:575-579.

### • **Vitamin E prevents oxidation of LDL cholesterol**

The low-density lipoprotein (LDL) form of cholesterol promotes heart disease only when it becomes oxidized by free radicals. Researchers

compared vitamin E levels in the LDL cholesterol of 27 smoking and 62 nonsmoking middle-age men and women. Nonsmokers had higher concentrations of vitamin E in LDL cholesterol, indicating a reduced risk of oxidation and heart disease. Experiments found that the LDL cholesterol of nonsmokers was more resistant to oxidation, compared with LDL cholesterol from smokers.

Liu CS, et al. *Nutrition Research*, 2004;24:361-371.

### • **Antioxidants lower inflammation levels**

In a study of 379 people, researchers found that blood levels of carotenoids and vitamin C were inversely related to C-reactive protein and other markers of inflammation in heart disease. Chronic low-grade inflammation of the arteries is now believed to be the cause of coronary artery disease.

van Herpen-Broekmans WMR, et al. *European Journal of Epidemiology*, 2004;19:915-921

### • **Carotenoid intake reduces risk of bladder cancer**

Researchers compared the eating habits of 771 men and women diagnosed with bladder cancer and 775 people without the disease. Those who consumed the most dietary carotenoids were 25 percent less likely to develop bladder cancer. The benefits were even more striking among current or former smokers. In this group, people who ate the most carotenoid-rich fruits and vegetables had one-half the risk of prostate cancer, compared with current or former smokers who ate few vegetables and fruits.

Castelao JE, et al. *International Journal of Cancer*, 2004;110:417-423.

### • **Low folic acid is factor in depression**

In a study of 2,313 middle-age Finnish men, low levels of folic acid, needed to make neurotransmitters, was associated with three times the risk of having depression.

Tolmunen T, et al. *Psychotherapy and Psychosomatics*, 2004;73:334-339.

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Post Office Box 30246 • Tucson AZ 85751-0246 USA

Editor and Publisher: **Jack Challen**

Copy Editor: **Mary E. Larsen**

Medical and Scientific Advisors:

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