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Stressed? Panicky? Inositol and Herbal Supplements Might Provide Some Relief

With the escalation in terrorist acts and a new war in Asia, there are plenty of reasons to feel anxious. However, excessive anxiety and panic attacks may result from nutritional and biochemical stresses. Several new studies report the value of the B-vitamin inositol and the herbs kava and valerian in treating anxiety and panic disorders.

There are two main clinical forms of anxiety. One, generalized anxiety disorder refers to persistent worries, characterized by difficulty sleeping, feeling "wired," and edginess. Two, panic disorder specifically describes feelings of terror that strike suddenly, repeatedly, and without warning. Its symptoms include chest pain, shortness of breath, or dizziness.

In a study published in the *Journal of Clinical Psychopharmacology*, Jonathan Benjamin, MD, of the Barzilai Medical Center, Israel, described the "first head-to-head comparison of inositol with an established drug." Earlier studies found inositol far superior to placebo in the treatment of panic disorder, depression, and obsessive-compulsive disorder.

Benjamin and his colleagues treated 21 men and women, ranging in age from 18-65 years, with either 12-18 grams of inositol or fluvoxamine (an antidepressant drug) daily for one month. The treatments were then switched for another month.

Inositol significantly reduced the number of weekly panic attacks by four, compared with a reduction of only two and one-half with fluvoxamine. In addition, people taking fluvoxamine experienced greater side effects, chiefly nausea and tiredness.

The researchers noted that only 70 percent of patients respond to current pharmaceutical treatments to panic disorder, and between 25-75 percent discontinue treatments because of side effects. "Because inositol is a natural compound with few known side effects, it is attractive to patients who are ambivalent about taking psychiatric medication," they wrote.

In a separate study, German researchers conducted a five-week study comparing an extract of the

herb kava to placebo. Forty patients were pretreated with benzodiazepines (a class of sedative drugs), then were shifted to kava extract, starting at 50 mg and increasing to 300 mg daily. During the first two weeks of kava treatment, the patients were withdrawn from the benzodiazepines. After this time, the patients were given either kava or placebo for three weeks.

The patients' symptoms were tracked with several standard clinical tests, which found that kava was superior to placebo. The study also determined that kava reduced symptoms after patients ceased taking benzodiazepines.

Finally, a study by the Psychopharmacology Research Group in London, England, found that supplements of either kava or valerian reduced stress and insomnia in patients. In the first phase of the study, 24 patients suffering from stress-induced insomnia (on average for more than 15 years) were given 120 mg daily of kava daily for six weeks. After two weeks without treatment, 19 of the patients were given 600 mg of valerian for another six weeks.

The patients' stresses were measured in three areas: social, personal, and life events. Their insomnia was measured by how long it took them to fall asleep, the hours they slept, and their waking mood.

Both kava and valerian resulted in significant decreases in stress and improvements in insomnia, without a significant difference between the two herbs. Most patients reported no side effects, but a small number of patients had very vivid dreams after taking valerian and dizziness after taking kava.

References: Palatnik A, Prolov K, Fux M, et al. Double-blind, controlled crossover trial of inositol versus fluvoxamine for the treatment of panic disorder. *Journal of Clinical Psychopharmacology*, 2001;21:335-339. Malsch U, Kieser M. Efficacy of kava-kava in the treatment of non-psychotic anxiety, following pre-treatment with benzodiazepines. *Psychopharmacology*, 2001;157:277-283. Wheatley D, Kava and valerian in the treatment of stress-induced insomnia. *Phytotherapy Research*, 2001;15:549-551. □

Vitamin E, Antioxidant Supplements Ease Rheumatoid Arthritic Symptoms

Vitamin E's reputation as an anti-inflammatory nutrient is growing with the publication of a second study showing that it benefits patients with rheumatoid arthritis. The first study suggesting the vitamin's anti-inflammatory properties was published by a team of German and British researchers in 1997.

In the latest study, Madiha H. Helmy, PhD, and colleagues at Alexandria University, Egypt, placed 30 men and women with rheumatoid arthritis on one of three regimens: (1) standard pharmaceutical treatment with methotrexate, sulphasalazine, and indometacin; (2) standard treatment plus a low dose antioxidant supplement; and (3) standard treatment plus 400 IU of vitamin E three times daily. All of the treatments continued for two full months.

Although rheumatoid arthritis is generally considered either a disease of connective tissue or an autoimmune disease, it is well established that free radicals stimulate inflammatory reactions in joints. That was the rationale for testing the antioxidant supplement and vitamin E.

Patients in both the antioxidant and vitamin E groups had significant reductions in arthritic symptoms, compared with those taking only the drug treatment. Patients in both vitamin groups responded to treatment faster – during the first month – whereas the drug-treated patients did not show any improvements until the end of the second month.

Patients taking the antioxidant supplement had reductions of 81 percent in the Ritchie's articular index (a way to assess the severity of the disease), 85 percent less morning stiffness, and a 78 percent lower sedimentation rate (a measure of generalized inflammation). Vitamin E resulted in similar decreases, 60 percent in Ritchie's score, 82 percent in morning stiffness, and 75 percent in sedimentation rate.

In contrast, patients taking only the pharmaceutical treatment had reductions of only 25-28 percent in these three indicators of disease severity.

Reference: Helmy M, Shohayeb M, Helmy MH, et al. Antioxidants in adjuvant therapy in rheumatoid disease. *Arzneimittel Forschung/Drug Research*, 2001;51:293-298. □

Zinc Supplements and Antioxidants Lower Risk of AMD Among Seniors

Taking either a moderately high-potency antioxidant supplement or zinc – or a combination of both – can reduce the risk of developing age-related macular degeneration, or AMD.

AMD is the leading cause of blindness among elderly persons, and an estimated 1.7 million Ameri-

cans have lost part of their eyesight from the disease. Several recent studies suggest that lutein can protect against AMD, but lutein supplements were not available when this study began.

A large team of researchers from 11 medical centers, were involved in the Age-Related Eye Disease study, which was directed by Aaron Kassoff, MD, of Albany, New York. More than 3,600 subjects ages 55-80 years old took supplements or placebos for an average of six years. The supplements included a multi-antioxidant with 500 mg of vitamin C, 400 IU vitamin E, and 15 mg beta-carotene daily; 80 mg of zinc and 2 mg of copper; or a combination of the antioxidants, zinc, and copper.

Zinc reduced the risk of AMD by 25 percent and antioxidants reduced it by 20 percent, compared with placebo. A combination of antioxidants and zinc reduced AMD risk by 28 percent.

The most significant benefit occurred in people with early signs of AMD. The combination of antioxidants and zinc reduced the risk of their disease progressing to a more serious form by 27 percent.

A similar study found that the supplements did not reduce the risk of cataracts. However, earlier research suggests that a longer period of supplementation might be needed to reduce the risk of cataracts.

Reference: The Age-Related Eye Disease Study Research Group. A randomized, placebo-controlled, clinical trial of high-dose supplementation with vitamins C and E, beta carotene, and zinc for age-related macular degeneration and vision loss. *Archives of Ophthalmology*, 2001;119:1417-1436. □

Soft Drinks, Celiac Disease Turn Out to Be Significant Factors in Osteoporosis

Two new studies offer interesting twists on the development of osteoporosis. In one, researchers reported that soft drinks sabotaged calcium consumption among teenage girls. In the other study, a high percentage of middle-age and elderly women with osteoporosis had undiagnosed celiac disease, which interfered with their absorption of vitamin D.

Susan J. Whiting, PhD, of the University of Saskatchewan, Canada, and her colleagues, analyzed the relationship between milk and carbonated soft drink consumption among 53 adolescent girls and 59 adolescent boys. The peak time of bone-mineral accrual is at age 12.5 for girls and age 14 for boys, and poor bone development during these times can increase the lifelong risk of osteoporosis and bone fractures.

"We found that milk consumption decreased with increased consumption of low nutrient dense beverages [soft drinks], providing support for the theory that low nutrient dense beverages replaced

milk and thus affected bone mass," wrote Whiting and her colleagues.

However, increasing consumption of soft drinks and decreasing intake of milk affected only adolescent girls. "Although boys drink more low nutrient dense beverages than the girls, the boys have a higher calcium intake as well as a higher activity level, each of which provides protection against an otherwise poor beverage choice," she added.

Other studies, noted Whiting, have found a clear relationship between the consumption of carbonated soft drinks and bone fractures in girls.

Meanwhile Ranuccio Nuti, MD, and his fellow researchers at the University of Siena, Italy, tested 255 osteoporotic women, ranging in age from their late 50s to mid-70s, for celiac disease. Celiac disease, an allergy-like autoimmune response to gluten proteins in wheat and many other grains, is a major cause of intestinal malabsorption.

Fifty-three (21.8 percent) of the women tested positive for IgG antigliadin antibodies, one of the blood tests used to screen celiac disease. Of these women, 24 (9.4 percent) also tested positive to tissue transglutaminase antibodies, a more sensitive means of testing for celiac disease.

These 24 women had very low blood levels of vitamin D, which is needed for bone development. They also had very high levels of parathyroid hormone, which promotes the breakdown of bone. In effect, almost 10 percent of women with osteoporosis had previously undiagnosed celiac disease.

References: Whiting SJ, Healey A, Psiuk S, et al. Relationship between carbonated and other low nutrient dense beverages and bone mineral content of adolescents. *Nutrition Research*, 2001;21:1107-1115. Nuti R, Martini G, Valenti R, et al. Prevalence of undiagnosed coeliac syndrome in osteoporotic women. *Journal of Internal Medicine*, 2001;250: 361-366. □

Beta-Carotene – or Veggies – May Reduce Levels of C-Reactive Protein

High blood levels of C-reactive protein (CRP) increase the risk of a heart attack by four and one-half times. They are also a more accurate predictor of future heart disease than either cholesterol or homocysteine.

CRP reflects systemic, or body-wide, inflammation, and levels are also elevated in arthritis, Alzheimer's, and cancer – pointing to the role of simmering inflammation in serious disease. Two studies have found that natural vitamin E supplements can lower CRP levels, and new research suggests that either beta-carotene or foods rich in this nutrient might also lower CRP levels.

In this study, Thomas P. Erlinger, MD, of Johns Hopkins Medical School, Baltimore, and his colleagues investigated beta-carotene, CRP, and white blood cell levels among almost 15,000 people who participated in the Third National Health and Nutrition Examination Survey. High white blood cell counts are often indicative of inflammation.

Erlinger found that both elevated CRP levels and high white blood cell counts were strongly associated with low beta-carotene levels among smokers, ex-smokers, and nonsmokers. In addition, smokers and ex-smokers had similar CRP levels, which were significantly higher than in people who had never smoked.

Erlinger expressed skepticism that beta-carotene had any inherent anti-inflammatory properties. However, substantial research indicates that free radicals (which are quenched by antioxidants) stimulate inflammation. In addition, it is possible that high blood levels of beta-carotene were simply a marker for a high intake of fruit and vegetables, which provide a diverse supply of antioxidants.

CRP is a byproduct of interleukin-6, a powerful pro-inflammatory cytokine (an immune-stimulating protein) produced by the liver and fat cells.

Reference: Erlinger TP, Guallar E, Miller ER III, et al. Relationship between systemic markers of inflammation and serum beta-carotene levels. *Archives of Internal Medicine*, 2001;161:1903-1908. □

High-Fat, Low-Carb Diet Reduces Seizures in Children with Epilepsy

The ketogenic diet, a treatment for difficult-to-control epileptic seizures in children, was first proposed in the 1920s and since has been, at various times, medically popular and unpopular. But a study by John Freeman, MD, a pediatric neurologist at Johns Hopkins Medical Institutions, Baltimore, has found it is often more effective than medications.

Several years ago, Freeman and his colleagues asked families to place 150 children on the ketogenic diet, which is high in fat, low in carbohydrate, and moderate in protein levels. Three to six years later, Freeman contacted nearly all of the 150 families to assess the effectiveness of tolerability of the diet.

Eighty-three of the children remained on the ketogenic diet for at least one year. Of the original 150 patients, 20 (13 percent) were completely free of seizures, and another 21 (14 percent) had a 90-99 percent decrease in seizures. Half of the children had a decrease of more than 50 percent in their seizures. In addition, 29 were no longer taking anticonvulsive drugs, 28 took only one medication, and 15 remained on the diet after three to six years.

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Quick Reviews of Recent Research

• Vitamin E stops some homocysteine damage

Elevated levels of homocysteine damage blood vessel walls, make blood vessels more rigid, and increase the risk of coronary artery disease and stroke. Homocysteine levels can be reduced with vitamin B6, folic acid, and B12. Researchers gave supplemental methionine, an amino acid, to 10 healthy men and women to temporarily raise their homocysteine levels. During some of the clinical tests, the subjects were also given 1,200 IU of natural vitamin E. Although vitamin E did not alter homocysteine levels, it did help maintain normal blood vessel function and blood flow.

Raghuveer G, et al. *American Journal of Cardiology*, 2001;88:285-290.

• Modest beta-carotene levels may protect lungs

Preliminary results from a new study suggest that modest dosages of natural beta-carotene may protect lung cells from cancer, whereas higher doses might increase the risk. Researchers at Tufts University, Boston, exposed ferrets to cigarette smoke and gave them either a daily antioxidant supplement containing vitamins E and C; vitamins E and C and

30 mg (50,000 IU) of beta-carotene; vitamins E and C and 6 mg (10,000 IU) of beta-carotene; or no supplementation. Ferrets, which are considered an ideal model for the human metabolism of carotenoids, developed a large number of precancerous lung cell changes after being exposed to cigarette smoke when given no supplements or when given vitamins and the large dosage of beta-carotene. In contrast, animals receiving the vitamins and modest beta-carotene dose did not develop any lung changes.

Chongviriyaphan N, et al. Presented at the 42nd annual meeting of the American College of Nutrition, Oct. 4-7, Orlando, Florida.

• Alpha-lipoic acid prevents insulin resistance

Chronically elevated blood sugar (glucose) levels induces insulin resistance in laboratory animals and people, setting the stage for Syndrome X and diabetes. In a study using fat cells, researchers found that alpha-lipoic acid and its principal metabolite, dehydrolipoic acid, improved glucose transport and metabolism and also reduced insulin levels.

Greene EL, et al. *Metabolism*, 2001;50:1063-1069.

• Antioxidants associated with healthy blood vessels

A thickened intima-media layer in the wall of the carotid artery indicates a higher risk of coronary artery disease and stroke. With this in mind, researchers analyzed blood levels of antioxidants, the intima-media thickness, and the degree of stenosis (narrowing of the blood vessel opening) in 468 elderly subjects. People with high blood levels of beta-carotene and vitamin C has normal thicknesses of their intima-media, whereas people with low levels of these nutrients had a thickening of their carotid artery intima-media. Subjects with low vitamin E levels were two and one-half times more likely to have a greater degree of stenosis.

Gale CR, et al. *American Journal of Clinical Nutrition*, 2001;74:402-408.

Ketogenic Diet and Seizures...

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Remarkably, many of the children benefited from a decrease or elimination of seizures years after ceasing the ketogenic diet.

Six of the children had developed kidney stones, a known side effect of the ketogenic diet. Forty-one percent of parents believed their child did not grow as well on the diet, but most equated poorer growth with a lack of weight gain. Careful clinical measurements found that the children grew in height at a low but normal rate.

"Three to six years after initiation, the ketogenic diet has proven to be effective in the control of difficult-to-control seizures in children. The diet often allows decrease or discontinuation of medication," Freeman wrote. "It is more effective than many of the newer anticonvulsants and is well-tolerated when it is effective."

No one understands why the ketogenic diet reduces seizures, but many experts believe that it builds up cellular reserves of ketones, which suppress the seizures.

Reference: Hemingway C, Freeman JM, Pillas DJ, et al. The ketogenic diet: a 3- to 6-year follow-up of 150 children enrolled prospectively. *Pediatrics*, 2001;108:898-905. □

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