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Vitamin D3: Higher Doses Reduce Risk of Common Health Concerns

by Chris D. Meletis, ND

Vitamin D3 is one of the most useful nutritional tools we have at our disposal for improving overall health. This nutrient is unique in that even though it is a vitamin it has hormone-like actions and controls phosphorus, calcium, and bone metabolism and neuromuscular function. Vitamin D3 is the only vitamin the body can manufacture from sunlight. Yet, with today's indoor living and the use of sunscreens due to concern about skin cancer, we are now a society with millions of individuals deficient in life-sustaining vitamin D3.

For more than a century, scientists have recognized that vitamin D3 is involved in bone health. Research has continued to accumulate that it can reduce the risk of fractures to a significant degree. The latest research, however, shows that Vitamin D3 deficiency is linked to a surprising number of other health conditions such as depression, back pain, cancer, insulin resistance and pre-eclampsia in pregnancy, impaired immunity and macular degeneration.

At the same time it's becoming clear that vitamin D3 may play a wide role in overall health, it's becoming equally clear that a large percentage of individuals are deficient in this important nutrient. The fear of skin cancer has stopped many individuals from

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Natural Strategies for Attention Deficit/Hyperactivity Disorder

by Mitchell A. Fleisher, MD, DHt, DABFM, DcABCT

Attention Deficit/Hyperactivity Disorder (ADHD) is the most prevalent psychiatric disorder in childhood, affecting between 3 and 5 percent, and possibly as much as 20 percent of all school children in the U.S., according to the National Institute of Mental Health. Several epidemiological studies done in the recent past estimate that between 30 percent and 70 percent of children with ADHD will continue to exhibit symptoms into adulthood, accounting for many millions of cognitively impaired adults.[1]

The principal characteristics of ADHD are inattention, hyperactivity and impulsivity. These symptoms often appear early in a child's life. Because many normal children may have these symptoms, but at a low level, or, the symptoms may be caused by another disorder, it is important that the child receive a thorough examination and appropriate diagnosis by a well-qualified health care professional (Table 1).[8]

ADHD is a syndrome characterized by inability to focus attention and/or periods of hyperactivity, more commonly exhibited in children, but also affecting adults as well. The term "attention deficit" may be misleading, in that the current theories suggest ADHD patients actually have difficulty: 1) regulating their attention spans; 2) inhibiting their attention to non-relevant stimuli; and/or, 3) focusing too intensely on

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obtaining beneficial amounts of sunlight, which the skin converts into vitamin D3. Even individuals who venture out into the sun often use suntan lotion and may be deficient in vitamin D3. Furthermore, as we age, we are less equipped to produce sufficient quantities of this vital nutrient. One study found that age-related declines in kidney function may require older people to ingest more vitamin D to maintain the same blood levels as younger people.[1]

The Recommended Daily Intake (RDI) is set so low that individuals who consume this small amount are still likely to be deficient. In fact, researchers have discovered that the RDI, which was considered adequate to prevent osteomalacia (a painful bone disease) or rickets, is nowhere near high enough to protect against the majority of diseases linked to vitamin D3 deficiency. For example, an analysis of the medical literature found that at least 1,000 to 2,000 IU of vitamin D3 per day is necessary to reduce the risk of colorectal cancer and that a low dose of vitamin D3 did not have the same protective effect.[2]

Researchers Call for Higher Doses

In an editorial in the March 2007 edition of the *American Journal of Clinical Nutrition*, a prominent group of researchers from leading institutions such as the University of Toronto, Brigham and Women's Hospital, Tufts University and University Hospital in Zurich, Switzerland, lashed out at the conventional media for its inaccurate reporting of vitamin D supplementation.[3]

The researchers wrote, "Almost every time the public media report that vitamin D nutrition status is too low, or that higher vitamin D intakes may improve measures of health, the advice that accompanies the report is outdated and thus misleading. Media reports to the public are typically accompanied by a paragraph that approximates the following: 'Current recommendations from the Institute of Medicine call for 200 IU/day from birth through age 50 years, 400 IU for those aged 51–70 years, and 600 IU for those aged >70 years. Some experts say that optimal amounts are closer to 1,000 IU daily. Until more is known, it is wise not to overdo it.' The only conclusion that the public can draw from this is to do nothing different from what they have done in the past."

The researchers point out that supplemental intake of 400 IU per day barely raises blood concentrations of 25(OH)D, which is the circulating vitamin D metabolite that serves as the major indicator of vitamin D status. To raise 25(OH)D from 50 to 80 nmol/L requires an additional intake of 1,700 IU vitamin D per day.

The researchers went on to write that, "The balance of the evidence leads to the conclusion that the public health is best served by a recommendation of higher daily intakes of vitamin D. Relatively simple and low-cost changes, such as increased food fortification or increasing the amount of vitamin D in vitamin supplement products, may very well bring about rapid and important reductions in the morbidity associated with low vitamin D status."

One of the challenges is the outdated acceptable upper limit for vitamin D3 consumption, which was set at 2,000 IU. However, researchers point out that more recent studies have shown that 10,000 IU is the safe upper limit.[4]

Dr. Vieth, one of the foremost authorities on vitamin D3 supplementation who has extensively studied the nutrient, lamented the low requirements for vitamin D3 in a recent issue of the *Journal of Nutrition*: "Inappropriately low UL [upper limit] values, or guidance values, for vitamin D have hindered objective clinical research on vitamin D nutrition, they have hindered our understanding of its role in disease prevention, and restricted the amount of vitamin D in multivitamins and foods to doses too low to benefit public health."[5]

When examining the medical literature, it becomes clear that vitamin D3 affects the health in an astonishing number of ways and that not obtaining enough of this important nutrient can leave the door open to developing a number of health conditions.

Depression

Vitamin D3 deficiency is common in older adults and has been implicated in psychiatric and neurologic disorders. For example, in one study of 80 older adults (40 with mild Alzheimer disease and 40 nondemented persons), vitamin D3 deficiency was associated with low mood and with impairment on two of four measures of cognitive performance.[6]

Back Pain

Musculoskeletal disorders have been linked to Vitamin D3 deficiency in a number of studies. One of the newest studies explored the role that low vitamin D3 levels play in the development of chronic low back pain in women. Sixty female patients in Egypt complaining of low back pain lasting more than three months were studied. Researchers measured levels of vitamin D3 in the women with low back pain and compared those levels to those of 20 matched healthy controls.

The study revealed that patients with low back pain had significantly lower vitamin D3 levels than controls. Low vitamin D3 levels (25 OHD < 40 ng/ml) were found in 49/60 patients (81 percent) and 12/20 (60 percent) of controls.[7]

Bone Health

One of the most well-known and long-established benefits of vitamin D3 is its ability to improve bone health and the health of the musculoskeletal system. Vitamin D3 deficiency causes osteopenia, precipitates and exacerbates osteoporosis, causes a painful bone disease known as osteomalacia, and increases muscle weakness, which worsens the risk of falls and fractures. Vitamin D3 insufficiency may alter the regulatory mechanisms of parathyroid hormone and may cause a sec-

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ondary hyperparathyroidism that increases the risk of osteoporosis and fractures.[8]

Cognitive Enhancement

Scientists are developing a greater appreciation for vitamin D3's ability to improve cognition. In a recent study, vitamin D3 deficient subjects scored worse on mental function tests compared to individuals who had higher levels of the vitamin.[9] The researchers wrote, "In conclusion, the positive, significant correlation between serum 25(OH)D concentration and MMSE [mental state examination scores] in these patients suggests a potential role for vitamin D in cognitive function of older adults."

Cancer

One researcher first noted the connection between vitamin D3 and protection from cancer in the 1940s, when he discovered that individuals at sunny latitudes had a reduced rate of deaths from cancer. He suggested that sunlight provided "a relative cancer immunity."

Since then, a number of studies have strongly suggested that vitamin D3 deficiency is associated with an increased risk of developing many forms of cancer including breast, ovarian, prostate and colon cancer.[10]

In one of the newest clinical trials, researchers studied 1,179 healthy, postmenopausal women (all 55 years or older and free of known cancers for at least 10 years prior to entering the study) who were taking large amounts of vitamin D3 with calcium. The subjects were randomly assigned to take daily dosages of 1,400-1,500 mg supplemental calcium, 1,400-1,500 mg supplemental calcium plus 1,100 IU of vitamin D3, or placebos. Over the four-year trial, women in the calcium/vitamin D3 group experienced a 60 percent or greater reduced risk of cancer than their peers who were not consuming these supplements.

Because there was the chance that some women may have had undiagnosed cancers at the study's start, researchers threw out the first-year results and then analyzed the results from the last three years of the trial. These later years resulted in even more dramatic decrease, with the calcium/vitamin D3 group experiencing a 77 percent reduction in cancer risk.

There was no statistically significant difference in cancer incidence between participants taking placebos and subjects consuming only calcium supplements.[11]

Another interesting study demonstrated that in vitro vitamin D3 may cause tumor cells to be more sensitive to chemotherapy drugs, increasing the efficacy of the cancer treatment.[12]

Immunity

Scientists have linked various aspects of immune health to a vitamin D3 deficiency. Vitamin D3 regulates T cells, which are important to the functioning of a strong immune system. Vitamin D3 acts as an immune system modulator, preventing excessive expression of inflammatory cytokines and increasing the killing efficiency of macrophages. In addition, it dramatically stimulates the expression of potent antimicrobial peptides, which exist in immune system cells such as neutrophils, monocytes, natural killer cells, and in cells lining the respiratory tract. These vitamin-D3-stimulated peptides play a major role in protecting the lung from infection.[13]

In addition, vitamin D3 deficiency may influence development and progression of various autoimmune diseases.[14]

Multi-Talented Nutrient

Vitamin D3 deficiency has been linked to a host of other conditions such as high blood pressure, fibromyalgia, diabetes, multiple sclerosis, rheumatoid arthritis, and an increased risk of pre-eclampsia and insulin resistance during pregnancy.[11,15-16] Most recently, low vitamin D3 levels have been linked to an increased prevalence of early age-related macular degeneration.[17]

Proper Dosage

In many of my patients, even after consuming 2,000 to 4,000 IU of vitamin D3 per day, their test results indicate that their vitamin D3 levels have barely budged. These patients needed to consume 8,000 IU of vitamin D3 per day to achieve proper blood levels of the vitamin. Patients should therefore have their physicians test their vitamin D3 levels to determine the proper level of supplementation. Testing also is important due to the fact that, in a small number of patients, vitamin D3 supplementation can raise calcium levels to an excessively high level. I have found this to be especially true in African American patients. Testing for vitamin D3 and calcium

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The President's Desk

DHEA in Danger

Once again, we face a grave (and very real) threat to our health freedom. I am referring to the current Congressional battle to declare over-the-counter sales of DHEA (dehydroepiandrosterone) supplements illegal and to reclassify DHEA as a "controlled, anabolic" steroid prescription drug. Two Bills in the current Congress, S. 762 and H.R. 1249, threaten to take a safe, affordable substance that has improved the health of countless individuals and transform it into an expensive drug.

The main "evidence" the legislators use to support their misguided cause is an animal study that may be questionable due to reports that the lead author is a scientist listed on patents that would allow DHEA to be combined with various drugs. The study found that mice taking an excessively high dose of DHEA (316 times greater than what people consume orally) experienced some negative effects. The researchers compared the effects of DHEA to dihydrotestosterone (DHT), a potent testosterone metabolite, in mice and determined that these abnormally high levels of DHEA caused changes in gene expression in the animals equivalent to those produced by DHT. The fact that the researchers used a dose of DHEA that no human would ever consume adds to the questionable nature of the study. If it is true that the scientist involved in this questionable study has a stake in selling a DHEA/drug combination, then he stands to make more money if DHEA becomes an expensive prescription drug. What's wrong with this picture? Isn't this a conflict of interest?

This one study doesn't take into account the large number of convincing studies that show DHEA is a safe natural metabolite necessary to the proper function of the human body.

DHEA's Important Role

DHEA is not a drug that needs to be controlled. It does not produce the same potent effects associated with the prescription anabolic steroid drugs such as Dianabol® (Methandrostenolone), Deca-

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blood levels should therefore become a part of a patient's regular blood work.

Conclusion

A growing number of researchers who have widely studied vitamin D3 are almost begging the general public to consume more of this important nutrient. Due to vitamin D3's high safety profile in doses up to 10,000 IU per day and due to the wide role it plays in our health, consuming 2,000 to 4,000 IU per day of this nutrient at times of the year when sunlight is scarce is a prudent way to improve overall health.

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ADHD

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specific stimuli to the exclusion of what is relevant.[1-2] Rather than diminished attentive ability, many individuals with ADHD may focus their attention upon too many things at once, i.e., not "see the forest 'fore the trees," resulting in poor concentration, erratic thought processes and decreased intellectual productivity.

ADHD may be caused and/or exacerbated by a whole host of agents provocateur listed in Table 2.[2-5]

Nutritional Support for ADHD

Standard, conventional treatment of ADHD is predicated upon the use of amphetamines and/or amphetamine-like drugs, as well as antidepressant, pharmaceutical drugs. However, growing evidence strongly points to the serious, short- and long-term, deleterious effects of drug-centered therapy, including anxiety, irritability, depression, insomnia, headaches, dizziness, learning disabilities, growth retardation, impaired vision, paranoia, psychosis, anorexia, dyspepsia, toxic hepatitis, seizures, myocardial infarctions (heart attacks), strokes, cardiac arrhythmias and death. Therefore, it is obvious that safe, nontoxic, effective and natural approaches are far more preferable.[6-7]

TABLE 1. DSM-IV Criteria for ADHD

Six (or more) of the following symptoms (Either 1 or 2) persisting for at least 6 months to a degree that is maladaptive and inconsistent with developmental level.

1 INATTENTION	2 HYPERACTIVITY-IMPULSIVITY
• Often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities. • Often has difficulty sustaining attention in tasks or play activities. • Often does not seem to listen when spoken to directly. • Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions). • Often has difficulty organizing tasks and activities. • Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework). • Often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools). • Is often easily distracted by extraneous stimuli. • Is often forgetful in daily activities.	Hyperactivity • Often fidgets with hands or feet or squirms in seat. • Often leaves seat in classroom or in other situations in which remaining seated is expected. • Often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness). • Often has difficulty playing or engaging in leisure activities quietly. • Is often "on the go" or often acts as if "driven by a motor." • Often talks excessively. Impulsivity • Often blurts out answers before questions have been completed. • Often has difficulty awaiting turn. • Often interrupts or intrudes on others (e.g., butts into conversations or games).

Among the most efficacious nutritional agents for the management of ADHD in both children and adults are the amino acids 5-Hydroxytryptophan (5-HTP), Acetyl-L-Carnitine (ALC), glutamine, taurine and tyrosine. 5-HTP functions as an important precursor for the production of serotonin, a neurotransmitter that is commonly depleted in ADHD patients, which alleviates anxiety and depression and balances moods. It is best given as 50 to 100 mg doses three times per day with meals.

TABLE 2. Possible Causes and Factors Influencing ADHD
Moderate to excessive dietary consumption of refined carbohydrates, especially products containing industrial white sugar (Sucrose) and high fructose corn syrup
Monosodium Glutamate (MSG)
Artificial food colorants, preservatives and/or sweeteners, e.g., Tartrazine, Aspartame, etc.
Heavy metal toxicity, e.g., mercury, lead, aluminum, etc.
Excessive consumption of aspartic acid or glutamic acid
Excessive copper consumption
Maternal abuse of alcohol and tobacco during pregnancy affecting the developing fetus
Excessive exposure to testosterone in utero, which may account for the greater prevalence of ADHD in males
Prolonged exposure to cool white fluorescent indoor lighting
Food allergies
Hyperthyroidism
Chronic, recurrent otitis media and otitis externa (inner and outer ear infections)
Insufficient and/or delayed brain development

ALC increases the formation of acetylcholine in the brain, a neurotransmitter essential for memory function. It also augments brain cell energy production and helps control impulsivity. The ideal dosage is 1,500 mg twice per day between meals. Investigations by the eminent nutritional researcher, Dr. Roger Williams, demonstrated that 75 percent of ADHD patients have low levels of glutamine and that children and adults diagnosed with ADHD experience a marked improvement when taking 250 mg to 1,000 mg of glutamine per day. Taurine, an anti-excitatory amino acid, serves as a central nervous system (CNS) sedative to help alleviate the hyperactivity associated with ADHD. It is most effective at 3,000 mg per day in divided doses between meals. Tyrosine, a catecholamine precursor, is capable of augmenting CNS dopamine and norepinephrine. Dr. Eric Braverman, a neurological specialist in the treatment of ADHD, purports that 5 to 10 percent of cases of ADHD respond to tyrosine supplementation in dosages up to 5,000 mg per day for children and up to 10,000 mg per day for adults.[9-13]

Another class of nutrients found to be effective in the care of ADHD includes the essential fatty acids and phospholipids. Studies using alpha-linolenic acid (ALA), an omega-3 fatty acid, in the form of flax seed oil, showed significant improvement in the symptoms of ADHD reflected by reduction in total hyperactivity scores derived from ADHD rating scales. Deficiency of the omega-3 essential fatty acid docosahexaenoic acid (DHA) is associated with hyperactivity. DHA supplementation, in the range of 3,000 mg per day in divided doses with meals, helps control hyperactivity and improve behavioral deficits and learning activity. A study of phosphatidylserine supplementation, at a daily dosage of 200 to 300 mg over four months, resulted in a very significant, more than 90 percent, improvement in the cognitive function and learning ability of ADHD patients.[14-19]

"5-HTP functions as an important precursor for the production of serotonin, a neurotransmitter commonly depleted in ADHD patients."

Dimethylaminoethanol (DMAE), a modified form of choline, may help alleviate the behavioral problems and hyperactivity associated with ADHD. Approximately 70 percent of ADHD patients may experience increased attention span, improved learning ability, increased intelligence quotient and decreased aggressiveness following DMAE treatment.[20]

Specific supplements that contain many of the nutrients mentioned above, which I have found to be clinically useful in the support of children and adults with ADHD, include: 1) Extension IQ, a unique formulation for enhancement of memory, focus and concentration; 2) Neptune Krill Oil, a rich source of the omega-3 essential fatty acids DHA and EPA, phospholipids and antioxidants that protect and improve cognitive function and calm the nervous system; 3) DMAE 100 Plus, Dimethylaminoethanol enhanced by specific B vitamins; 4) Phosphatidylserine 100 Plus, a balanced blend of four, essential phospholipids; and, 5) Galantamine, a botanical extract of Galanthus nivalis (Common Snowdrop), that functions as cholinergic and nicotinic receptor agonists, thereby amplifying acetylcholine effects that enhance memory, concentration, cognitive performance and learning.[21-23]

For ADHD that is marginally responsive to nutritional therapy alone, it is best to seek out classical constitutional homeopathic medical therapy. I have found homeopathy to be very effective for the relief of ADHD in children and adults, in conjunction with carefully selected supplementation. In addition to the above recommended supplements, an alkalinizing diet rich in fresh vegetables and fruits and sprouted whole grains, low in acid-forming foods such as animal proteins (meat, fish and dairy products) and avoidance of refined carbohydrates (sugar, candies, cakes, white breads, pastas, etc.) is essential to promoting healthy brain and immune function and eliminating the underlying causes of ADHD in children and adults.

Mitch Fleisher, MD, DHt, DABFM, DcABCT
Dr. Mitch Fleisher is the Chief Medical Board Advisor for VRP.

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Fibromyalgia Syndrome: Elevating Energy Levels in Patients with This Common and Crippling Condition

by Jason E. Barker, ND

Fibromyalgia syndrome (FMS) is a chronic condition characterized by widespread muscle pain and stiffness that is often accompanied by joint and bone pain, disturbed sleep and fatigue. Fibromyalgia symptoms may be present for only months at a time, or they may be present for years with each individual experiencing differing degrees of symptom presentation and severity. Termed a "syndrome," fibromyalgia presents as a collection of signs and symptoms, rather than a well understood disease process. Fibromyalgia is poorly understood, and is a complex challenge to the patient and physician in finding relief. There is no known direct cause of fibromyalgia syndrome; however, there are several contributing theories as to its cause.[1]

FMS is a relatively common condition, affecting roughly 10 million people in the US alone.[2] It can affect children, but it most often strikes adults. Fibromyalgia overwhelmingly affects women compared to men, with 80 percent of cases being women, and typically manifests in the prime of life between the ages of 30 and 60 years.[3] FMS is generally considered to be a non-progressing condition; however, those affected by it experience varied periods of worsening and remission. Approximately half of those affected with FMS have symptoms that last under two years, and the other half will have symptoms for more than 2 years.[2]

Causes of Fibromyalgia

Fibromyalgia has no established cause. Like many disease conditions, researchers are looking at several possible causes for this condition. Because fibromyalgia is so prevalent in women, researchers have studied the link between female hormones and FMS symptoms,[4-5] although no distinctive breakthroughs have been made in this area.[6] Until the hormone-FMS connection is further established, FMS patients should strive for balanced hormones, as this will contribute to the overall state of well being.

Another evolving area of research has looked at the link between viruses and FMS. Viral infections such as hepatitis C, human T cell lymphotropic virus type I (HTLV-I) and human immunodeficiency virus (HIV) are all associated with FMS.[7] Researchers are unsure whether these associations are due to the infection itself or another causative factor.

Newer thinking around FMS involves looking at the central nervous system. Molecules in the body that lead to inflammation (inflammatory cytokines) are thought to activate a substance known as inducible nitric oxide synthase (INOS) in the muscle tissue that in turn sensitizes the central nervous system to pain.[8] INOS stimulates pain receptors and creates more oxidants in the tissue. Oxidative damage occurs in the tissues because of this, which leads to tissue breakdown over time.

Diagnosis of FMS

People with fibromyalgia often undergo extensive medical testing and treatment before a diagnosis of fibromyalgia is made. Making a diagnosis is complicated by the fact that there is no single medical test that can say whether a person has the condition or not. However, a more certain diagnosis can be made when adhering to the American College of Rheumatology's diagnostic guidelines; a person with diffuse pain and tenderness in at least 11 of 18 specific bodily locations and other FMS-like symptoms will be diagnosed with FMS.[1] Some of the most common symptoms are listed in Table 1, from most common to least.[9]

TABLE 1. Fibromyalgia Symptoms

- Stiffness
- Unrefreshing sleep
- Tension headache
- Irritable bowel, with recurring diarrhea and constipation
- Difficulty with concentration and related cognitive functions
- Depression and mood disorders
- Restless leg syndrome
- Vaginal pain and dryness
- Painful menstrual periods
- Irritable bladder and urinary complaints

Enhancing the Health of FMS Patients

Conventional treatment for fibromyalgia may involve the use of sleep medication, anti-inflammatory drugs (for pain management), and antidepressants. These medications are used to target the symptoms of FMS, as there is no specific treatment that can address all the symptoms of FMS. Additionally, long-term use of these medications is required for treatment of FMS, all of which have several side effects that may compound the syndrome. A more practical approach is the use of nutritional supplements that assist the body in maintaining healthy function.

Raising energy levels

One of the major symptoms in FMS is fatigue; one hypothesis is that those affected have an irregularity in their ability to produce ATP, the body's main "energy currency."[10] Providing the nutritional material to assist the body in producing ATP may lead to improvements in energy levels. Three nutritional factors have shown promise in this area:

Magnesium

Magnesium contributes to over 300 enzymatic reactions in the body including the formation of an ATP precursor, metabolism of protein and carbohydrate, and movement of muscular electrical potentials.[11-12] Magnesium acts as very gentle muscle relaxant by blocking the effects of calcium-directed muscle contractions.[13] Taken in adequate doses, magnesium has the effect of making tight muscle more

relaxed, and over time may assist with sleep quality, as low magnesium levels are associated with insomnia.[14]

Malic Acid

Malic acid, when combined with magnesium, has been shown to decrease the pain and tenderness associated with FMS. Although the mechanism of how malic acid works is not fully understood, combined with magnesium it has been shown to improve FMS symptoms.[15] Many experts hypothesize that malic acid, a critical component of the Krebs cycle production of cellular energy, is useful due to the possible role that an inherent metabolic imbalance may play in FMS. A simple organic acid test, by examining the many energy pathways, can determine if a metabolic imbalance is present.

Vitamin B6

Also known as pyridoxine, this B-vitamin works in concert with magnesium and malic acid, boosting their effectiveness. Pyridoxine serves to "escort" magnesium into the cells of the body, where it exerts its effects, and by assisting malate in producing ATP.

Healthy Sleep

One of the hallmark symptoms of FMS is interrupted, poor sleep. This alone will lead to fatigue; however it may precede the painful symptoms of FMS. Therefore, the importance of creating a restful sleep pattern is paramount to the treatment of FMS and prevention of worsening symptoms.

Melatonin

Melatonin is a hormone secreted in an area of the brain to assist us with sleep. It is primarily released in response to the darkening light, making us feel sleepy. Available as a supplement, melatonin is widely used by people with sleep difficulties. Its use is widespread due to its promising results in numerous studies looking at insomnia. Additionally, melatonin has been shown to be deficient in people with FMS, thereby making its use all the more important.[16] Studies incorporating melatonin as a sleep aid have shown better sleep and decreased need for pharmaceutical sleep aids.[18] Melatonin is a safe and effective sleep aid with minimal side effects for people with FMS.

Antioxidative Therapy

As mentioned earlier, oxidative damage occurs in people with FMS.[17-18] This leads to further tissue degeneration, and less than optimal health. There are numerous forms of antioxidants; only a few will be discussed here. Additionally, omega-3 fatty acids are effective at limiting oxidation.[19]

Incorporation of antioxidant supplements into the FMS treatment regimen should include standard antioxidative vitamin and minerals such as beta-carotene, vitamin C, vitamin E, zinc and selenium. Food sources of antioxidants include darkly colored fruits and vegetables, with blueberries being highest priority due to their overall high antioxidant capacity.[20]

Hormonal Factors

While definitive links between hormone imbalance and FMS have yet been discovered, achieving hormone balance should be considered in all people, especially in female FMS patients. A salivary hormone test can help determine which hormones are imbalanced and help determine the proper replacement of natural forms of hormones, including estrogen, progesterone, testosterone, DHEA and Cortisol.

Adaptogens and Thyroid Support

Two other substances that have been found to be helpful in clinical experience are adaptogens and iodine (Iodoral®). Adaptogens such as Eleutherococcus senticosus, Manchurian Thorn Tree, Hawthorn, Echinopanax Elatum, Schisandra, Ajuga Turkestanica, Aralia Mandshurica, Rhaponticum Carthamoids, Myricetin and Rhodiola can help support the adrenal glands and thereby improve the health of FMS patients. In addition, some clinicians have theorized that FMS is the result of hypothyroidism and that nourishing the body with iodine in the form of Iodoral can produce positive results.

Conclusion

Fibromyalgia syndrome is a complex condition, with several theories as to its cause. Like other complex conditions, there is not likely a single causative factor, but rather many factors. Proper nutrition can help maintain a healthful state in the body by supplying the necessary nutritive substances to avoid this condition. It is also imperative to ensure proper hydration by consuming a minimum of 64 ounces of pure water per day and a diet rich in fresh vegetables augmented with a daily green drink.

Jason E. Barker, ND

Dr. Barker holds a Doctorate in naturopathic medicine and a B.S. in exercise and sport science with a minor in anatomy and neurobiology. He maintains a private practice with an emphasis on sports medicine, pain management and hormone balance. Dr. Barker serves as a consultant to the nutraceutical and sports medicine industries and has lectured internationally as an expert in nutraceutical applications in medicine. Currently he is actively engaged in clinical research with a focus on nutraceutical agents and human performance.

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Thyroid and Adrenal Malfunction: Common Causes of Fatigue and Exhaustion

by Nieske Zabriskie, ND

Fatigue is one of the most common complaints experienced by the general population. In fact, one study demonstrated that 24 percent of patients in outpatient care report fatigue is a major health problem.[1] Fatigue can be a particularly challenging condition for both the patient and the physician as it can have numerous causes and is often difficult to identify the origin. However, two common causes of fatigue are endocrine dysfunction of the thyroid or adrenal glands.

Hypothyroidism

Hypothyroidism, or low thyroid hormone function, is a condition characterized by a decreased basal metabolic rate. Hypothyroidism frequently is characterized by decreased conversion of inactive thyroid hormone to active thyroid hormone, as well other conditions such as autoimmunity. Thyroid hormones are important for numerous physiological functions in the body. These hormones stimulate an increase in size and number of mitochondria, the site of energy production in cells. This directly affects the overall metabolic rate in the body. Thyroid hormone is also important for normal growth, transcription of genes, stimulates carbohydrate and fat metabolism, increases heart rate, blood volume, strength of heartbeat, muscle contraction, increases secretions necessary for digestion and gastrointestinal motility, and increases the secretion of other endocrine hormones. Thus, low thyroid hormone function affects all systems in the body.

Most commonly, hypothyroidism presents with fatigue, lethargy, weakness, dry skin, course hair, slowed speech, cold intolerance, and hoarseness. It may also present with muscle and joint pain, muscle cramps, headaches, brittle nails, thinning hair, carpal tunnel syndrome, edema, constipation, weight gain, hypertension, sleep apnea, depression, cognitive impairment, and swelling around the eyes.

One of the most common nutritional causes of thyroid dysfunction worldwide is iodine deficiency.

Iodine

Iodine is a trace element required in the diet for several physiological functions. Iodine deficiency is a world-wide problem and is associated with numerous health conditions such as hypothyroidism, an enlarged thyroid called a goiter, congenital hypothyroidism known as cretinism, cognitive disorders, neurological disorders, and breast disease.

Iodine is converted to iodide before absorption in the intestines. Iodine is incorporated into thyroid hormone precursors, which further combine to form the thyroid hormones thyroxine (T4) and triiodthyronine (T3). An enlarged thyroid, or goiter, is the most overt sign of iodine deficiency. Hypothyroidism due to iodine deficiency presents with a decrease in thyroid hormones as well as decreased thyroid stimulating hormone (TSH).

Iodine deficiency can be caused by several factors such as low levels of iodine in the soil or water in particular areas and ingestion of large amounts of goitrogens (substances that block iodine absorption and inhibit the thyroid gland). Common goitrogens include cruciferous vegetables, cassava, millet, and soya flour.

Intake of particular elements, which compete with iodine for uptake and utilization, may also be a factor. In the early 1960s, iodine was added to bread as a dough conditioner. But in the 1980s, bromine replaced iodine in the bread-making process. Bromide is known to cause goiters, the term for enlarged thyroid glands, because it competes with iodine for use by the body, producing a relative iodine deficiency even when iodine intake is sufficient.[2] Sangster, et al. reported a decreased ability to concentrate and sleepiness in normal male subjects ingesting sodium bromide.[3] These symptoms are consistent with hypothyroidism caused by iodine deficiency.

Iodine was first added to sodium chloride (table salt) in the 1920s in the US. That practice gave a false sense of iodine sufficiency and resulted in the public relying on iodized salt for supplementation instead of the previously used forms of iodine and iodide found in the Lugol solution, a 5 percent solution of 50 mg iodine and 100 mg potassium iodide per milliliter that was commonly used by medical practitioners. However, by the 1950s, most physicians forgot their predecessors were using amounts of iodine/iodide two orders of magnitude greater than the amounts present in the average daily consumption of table salt. In addition, although supplementation with both iodine and iodide produces the most desirable effects, table salt supplies only iodine.

"Adrenal insufficiency is characterized by fatigue, muscle weakness, weight loss, and low blood pressure."

Clinicians have found that consuming iodine in a form similar to the Lugol solution (as in Iodoral®) can help restore energy levels in hypothyroid patients. An iodine sufficiency test can also help determine the proper level of supplementation required.

Continued on page 12

CUSTOMER CORNER

Food Allergies

Dear Dr. Meletis,

I recently read the article on allergies in the April 2007 newsletter. I have 2 questions: 1) Can you recommend some lectin-blocking foods and supplements? 2) Which lab does the author recommend for home testing options for delayed food allergies?

Thanks so much for your assistance.

Ms. D.

Dear Ms. D.,

Clinically, I use *Lectin Lock*™, designed by an expert in lectin research. In terms of food allergy testing, a home collection *Food Allergy Test Kit* is available here. The test is then performed by a nationally certified lab.

Sincerely,
Chris D. Meletis, ND

Memory Loss

Dear Dr. Dean,

My husband is 65 and suffers from memory loss that started when he was 62. For the last 7 months, he has been on Exelon® 12 mg per day. He's in good physical health, walks 6 miles daily, plays golf, helps at church, but he has some nighttime hallucinations. What supplement could I get for him? Thank you.

Mrs. S.

Dear Mrs. S.,

Exelon, as you probably know, is a cholinesterase inhibitor that increases levels of acetylcholine in the brain, by inhibiting cholinesterase, the enzyme that enhances the breakdown of acetylcholine.

Extension IQ contains a combination of nutrients that, among other things, naturally increases the level of acetylcholine in the brain. This should enhance the effects of Exelon, and may enable your husband to decrease his dose.

Other substances that will act synergistically with these substances include *Phosphatidylcholine* and *Phosphatidylserine*.

Chelation therapy has positively affected many cases of cognitive impairment, by improving blood flow and reducing the amount of aluminum-induced neurofibrillary tangles. I suggest *Oral ChelatoRx*, starting with 2-3 capsules per day, gradually increasing to the maximum tolerated dose (gastrointestinal-wise), or up to 12 capsules per day.

Ward Dean, MD

Protection from Phthalates

Dear Dr. Dean,

I have been a long time consumer of bottled water and have concerns regarding ingestion of phthalate compounds leaching from the plastic container into the water. Is this a realistic concern? Are tests available to measure how much phthalate may be lurking in the body, and what supplements might be useful for detox?

Mr. H.

Dear Mr. H.,

I don't have a lot of information about this, although it's a good question. I also wonder how much estrogen leaches into food from plastic containers.

There was one study that showed that phthalates lower testosterone in men. You can read our breaking news article about this study, "Obesity in Men Linked to Testosterone-Lowering Chemical" on our website. By taking a *Salivary Hormone Test*, you can check to see that your testosterone levels are where they should be. If they are not at the proper level, then *AndroAmp* is one possibility to help raise testosterone levels.

You may also want to read the article "Environmental Estrogens: The Invisible Threat That Surrounds Us," available on our website. Although the article does not specifically address phthalates, it does discuss some nutritional supplements that may protect against other environmental pollutants.

Ward Dean, MD

Weight Loss

Dear Dr. Meletis,

I have some customers who have a question regarding *CLA*. They are on a special diet while using the *CLA*. If they reach their ideal weight, stay on the *CLA* for awhile after, then decide to go off the supplement are they then going to regain the weight back or gain even more even if they control their eating habits? Also, should they take the *CLA* when they begin their dieting or should they wait until they've had some weight loss?

Thank you for helping me with all these questions.

Ms. R.

Dear Ms. R.,

I think using the *CLA* all the way along in the process can offer many people the extra support they need to optimize their goals. In terms of a "rebound" effect, I have never noticed this clinically. I often will add *L-Carnitine* to the supplement routine, taken away from food to further enhance efforts. Additionally, supplementing with fiber (as in *Fiber-Rite*) at each meal helps control the glycemic effect and acts as a natural sponge binding up toxins, positively affecting caloric burden. Fiber also helps reach a comfortable sense of fullness more quickly.

Sincerely,
Chris D. Meletis, ND

ADD, Depression, Anxiety

Dear Dr. Dean,

I have dealt with ADD, depression, anxiety and a lot of stress with a custody battle. Now I am a full-time single father just out of college with no plans set. I often feel tired and have used *GABA*, *5-HTP*, *SAMe*, *AdaptaPhase*®, and *DMAE*. They seem to help.

In addition, you should know that I have chronically smoked marijuana from the age of 15 to 25 years old. I just recently in the last few days have quit.

What do you think I essentially need?

Mr. D.

Dear Mr. D.,

How much exercise have you been getting? One of the best fatigue and stress-fighters is exercise. Start with a 15-minute walk each day, and increase the intensity and duration. You could even make a game out of it with your children.

Also, you might add sublingual *Vitamin B12*, which is an effective energy booster in many people.

Ward Dean, MD

Continued on page 10

CUSTOMER CORNER

Sinus Pressure

Dear Dr. Meletis,

I have a lot of sinus pressure and congestion. What can I use to help open and drain my sinuses?

Ms. S.

Dear Ms. S.,

Sinus congestion can arise from either infection or simple inflammation called sinusitis. If the discharges from the nasal passages are yellow, green or discolored even somewhat, then there is a greater chance that you actually have a bacterial infection. If that is the case the congestion is secondary to the infection and this needs to be dealt with accordingly.

I will assume you do not have an infection and that you are working with your personal health care provider. What I use with my patients looking to decrease congestion is *NAC* (*N-Acetyl-Cysteine*), which helps break up mucus and allows it to flow more freely and hence can help lessen congestion and sinus pressure. On the note of inflammation of the sinus passages, I have found clinically that quercetin and bromelain (found in *QuerCelain*®) work nicely. Quercetin is a bioflavonoid that can help lessen the congestion associated with allergens that trigger histamine release. *QuerCelain* helps support the body's ability to cope with inflammation. It also contains magnesium and vitamin C. *QuerCelain* is a popular item with my patients.

I also suggest that my patients drink plenty of water, and use nasal saline spray at least two times per day. In addition, I recommend keeping your home and car windows closed during allergy season. It is also imperative after spending time outside to wash one's hair prior to bed to minimize further exposure from pollen, dust and pollutants that collect on the hair during the day.

Lastly, if this is more than just a short term issue I routinely ask my patients to consider getting a *Food Sensitivity Test* now available here. This test measures for 96 hidden (delayed food sensitivities).

Please make sure to keep your personal health care provider informed. In addition, it is important to note that women who are either pregnant or expect to become pregnant should not use quercetin.

Sincerely,
Chris D. Meletis, ND

Pain in Rib Cage

Dear Dr. Dean,

I have pain (a dull ache) under my right rib cage by my side. My doctor sent me for a CT scan and has done a blood test. The scan shows two spots on the liver, which have been characterized as 1 cyst and 1 fatty tissue. The basic liver panel blood tests are normal. The doctor has done an upper GI series, which is normal. I notice the pain is more intense during the week before and the week of my period. The doctor is perplexed and has only suggested painkillers. My personal preference is to minimize painkillers, but the discomfort actually alters my mood and I am unpleasant to be around. What can you suggest?

Ms. G.

Dear Ms. G.,

Your pain is right where your liver is, all right.

I agree with you that "pain killers" are not the solution—as most painkillers are metabolized by the liver. I recommend considering follow-up by a gastroenterologist, if the symptoms continue. In the meantime, I suggest *HepatoGen*™, in order to provide the nutrients to optimize liver function.

Ward Dean, MD

Charcot-Marie-Tooth Disease

Dear Dr. Meletis,

I have Charcot-Marie-Tooth disease (CMT), also known as peroneal muscular atrophy and hereditary motor sensory neuropathy. It causes deterioration of peripheral nerves that control sensory information and muscle function of the foot/lower leg and hand. I am taking 1 tsp. of *Creatine* powder. Is there anything that you would suggest to help my muscles stay strong besides exercise and is there anything that helps nourish the nerves? Thank you for your help.

Ms. M.

Dear Ms. M.,

I have several patients with CMT. I have found that consuming sufficient levels of branched chain amino acids, such as those found in *Amino EDGE*, is important. Also, *L-Glutamine* along with *Creatine* can have a synergistic effect. Without question, *Lipoic Acid* in larger doses (600 mg, 1 to 2 times per day) is important as is ensuring sufficient levels of *Vitamin B12* are being consumed.

Sometimes my patients also work with physical therapists and enhance their progress with muscle stimulation. This is definitely something to visit with your primary care provider about along with therapeutic supplementation.

Also, to further gain insights into the unique needs of your body from a biochemical perspective, opting to perform a metabolic profile test (*Organic Acid Test*) can provide insights into individual nutritional needs. On a final note, there is evidence that increasing *Vitamin C* intakes can help some patients with CMT.

Sincerely,
Chris D. Meletis, ND

Chronic Fatigue and Mitochon-

Dear Dr. Dean,

Thank you for your wealth of progressive-minded health insight. You are the medicine we so desperately need.

I've just read an article about the connection between chronic fatigue syndrome and mitochondrial failure, and I now believe I have found the answer to my 12-year plight with this disease. What specific tests are there to assess mitochondrial function and how may I obtain these tests? Is there any way of obtaining testing without a doctor's request? I ordered your *Mito-Boost*® supplements to get the ball rolling. But after years and years of tests with no definitive diagnosis it would be great to have some empirical proof that there is indeed a dysfunction, which has caused me significant suffering.

Thank you.
Ms. M.

Dear Ms. M.,

Unfortunately, the laboratory tests that would identify the specific mitochondrial dysfunctions are highly sophisticated, expensive tests that are available only in specialized research environments, for the most part, and are not routinely available.

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Consequently, we use our "best guess" based on symptoms and the fact that the mitochondrial resuscitator substances contained in *Mito-Boost I* and *II* are so safe and so potentially beneficial.

Ward Dean, MD

LipiControl and Niacin

Dear Dr. Dean,

I have received wonderful results from using *LipiControl*®. My LDL has lowered from 132 to 90. I do take a multivitamin every day, which provides the daily RDA of *Niacin* (vitamin B3). With the amount of *Niacin* in the *LipiControl*, should I be concerned about overdosing on *Niacin*? Thank you.

Ms. H.

Dear Ms. H.,

Glad to hear about your success with *LipiControl*.

Niacin has been recommended in doses as high as six grams per day (6,000 mg). It is very difficult (if not impossible) to "overdose" on *Niacin*. The physiologic doses of *Niacin* that you are taking in your multi will most certainly NOT result in an overdose.

Ward Dean, MD

Depression

Dear Dr. Meletis,

I have a friend on Prozac®, a 19-year-old young man. I'd like to see him get off that and onto a natural remedy, like *Lithium Orotate*. Can you please tell me how to wean him from Prozac or just what to do? He's on this for "depression," but he also has an eye tic of some sort, and takes 1 medication for that. I can't help but think his eye tic and "depression" might be connected in some way.

Thanks so much,
Ms. S.

Dear Ms. S.,

Legally, we cannot recommend that your friend stop taking the Prozac. Depression needs to be approached from an individual perspective. What is the underlying chemical or environmental cause? Sometimes it is related to a life event and it will pass with time, processing and healing. Yet, other times there is a genetic predisposition that warrants a more methodical approach. Transition from drug therapy to natural approaches needs to be very closely monitored by a qualified health care provider. For example, it is important to note that *St. John's Wort* can lower blood levels of several drugs in the body and increase side effects of some other medications that affect the nervous system.

You may very well be correct in your observation about the eye tic and the depression. Lessening stress, increasing B vitamins through consuming a good B-Complex such as *Extension B-Plex* (assuming he is not on anti-convulsants/antiseizure medication) and supplementing with a good multi-vitamin like *Extend Plus* to establish a stronger health foundation would be a first step as other approaches such as *Lithium Orotate*, *5-HTP* and *St. John's Wort* are explored.

Sincerely,
Chris D. Meletis, ND

L-Theanine and GABA

Dear Dr. Dean,

Does *L-Theanine* convert into *GABA* in the brain, or does *L-Theanine* help to escort *GABA* to the brain?

Mr. M.

Dear Mr. M.,

L-Theanine (N-ethyl-L-Glutamine) is a naturally occurring amino acid found uniquely in green tea leaves from Camiellia sinensis. *L-Theanine* crosses the blood-brain barrier and produces a feeling of relaxation with heightened awareness, reduces both mental and physical stress and supports the immune system.

L-Theanine increases the concentration of serotonin, dopamine and *GABA* in the brains of experimental animals and is thought to produce neuroprotective and anti-stress effects by inhibiting the excitation of neurons in the cortex of the human brain.

Additional information and references can be found in the article, "L-Theanine: Unique Anxiety Reducer and Mood Enhancer" on our website.

Ward Dean, MD

Aromatase Inhibitors

Dear Dr. Dean,

May I know your latest thinking regarding aromatase inhibitors? I am a 57-year-old male and my blood tests indicate rising estradiol over time, accompanied by fat gain. In your comments about chrysin in an article on the website, you indicate there are no effective non prescription aromatase inhibitors. Also, I am wondering if ground *Flax*, *Muira Puama*, or maca might support a reduction in my estradiol levels. Would you please suggest supplements to reduce my estradiol levels? Thank you!

Mr. D.

Dear Mr. D.,

At the time I wrote the article about chrysin, I was unaware that *Resveratrol* could act as a natural aromatase inhibitor. In addition to its other anti-aging properties, *Resveratrol* may also be the best natural aromatase inhibitor there is.

If *Resveratrol* is not effective, you may have to resort to the prescription aromatase inhibitor, *Arimidex*® (1/2 – 1 mg twice per week).

Finally, to reduce your estrogen levels, I suggest *BioDIM*®, which literally acts like an "estrogen vacuum cleaner."

The combination of *Resveratrol* to inhibit conversion of testosterone to estrogen and *BioDIM* to help metabolize any estrogen that is formed should help to optimize your hormone balance.

Ward Dean, MD

Register Now For Iodine Conference

A limited number of spaces remain for The Institute for Healthy Aging's conference, "The Safe and Effective Implementation of Orthoiodosupplementation in Medical Practice." Iodine supplementation experts will gather from October 4 – 6, 2007 at the Marriott Coronado Island Resort in San Diego, California. The conference is a viable way to earn 15 Hours Category 1 CME, 15 Nursing Contact Hours, or 15 Hours Pharmacy CE.

Registration for the conference is $495 before September 1 and $550 after September 1. To register, please call 1-800-340-2832 or visit www.theiha.org for more information.

Thyroid Malfunction

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Low Adrenal Function

The outer cortex of the adrenal glands is responsible for secreting several steroid hormones including cortisol, aldosterone, and dehydroepiandrosterone (DHEA). Cortisol is the main hormone involved in the stress response and imbalanced cortisol levels can contribute to fatigue and exhaustion. Cortisol is responsible for increasing glucose synthesis in the liver for energy, breakdown of protein, and inhibiting glucose uptake and utilization into cells resulting in mild insulin resistance. Excess cortisol as from increased stress results in suppression of inflammation and immune function and increases appetite, energy intake, and central weight gain. It suppresses bone formation, causes loss of muscle mass and weakness, changes in mood and sleep, and increases blood pressure. Prolonged activation of the stress response may lead to adaptation or adrenal exhaustion in which cortisol levels may drop to insufficient levels causing fatigue or illness.[4] Primary adrenal insufficiency is characterized by fatigue, muscle weakness, weight loss, low blood pressure, and possibly darkening of the skin.[5]

Studies show that psychosocial stress activates the hypothalamus-pituitary-adrenal axis and causes an increase in morning cortisol levels, which correlated to the subjects' reports of increased fatigue and tension-anxiety.[6]

Herbal preparations have historically been used to modulate adrenal function. Adrenal adaptogens are believed to balance abnormal adrenal hormone output; increasing low levels of hormone or decreasing elevated hormone levels. Adaptogens are described as plants that produce a non-specific response increasing the resistance to multiple types of stressors. Many of these herbs have a long history of use in countries such as China and Russia.

Eleutherococcus senticosus

Eleutherococcus, or Siberian Ginseng, has been traditionally used for anti-stress and anti-fatigue properties as well as immune stimulating action. One study demonstrated that supplementation with Eleutherococcus for 2 months decreased fatigue severity and duration, particularly in subjects with moderate fatigue and fatigue that lasted for five or more years.[7] However, animal studies measuring forced swimming time show that supplementation with Eleutherococcus inhibits stress-induced cortisol increase and reduction of the natural killer cells of the immune response, and increases swimming time.[8]

Crataegus sanguinea extract

The fruit of Crataegus, or hawthorn, is traditionally used as a heart tonic. Numerous studies indicate the hawthorn increases coronary blood flow and force of contractions, decreases abnormal heart rhythms, and may decrease blood pressure. Additional evidence suggests that Cratageus may lower total serum cholesterol, triglycerides, and low-density lipoprotein cholesterol (LDL).[9-10]

"Schisandra may increase endurance, concentration, coordination, and anti-inflammatory action."

Schisandra chinensis

Schisandra is adaptogenic herb traditionally used in China for generalized support. Studies show that it may increase endurance, concentration, and coordination as well as provide antidepressant, antioxidant, and anti-inflammatory action.[11] Evidence suggests that adaptogens such as Schisandra support the stress response both by affecting the sympathetic-adrenal response with short term administration as well as supporting the hypothalamic-pituitary-adrenal axis with longer-term administration.[12]

Ajuga turkestanica and Rhaponticum carthamiodes extract

These herbs contain biologically active constituents known as ecdysteriods. Research in the Ukraine suggests that these constituents provide adaptogenic, anabolic or rebuilding activity, as well as antioxidant, anti-free radical, immune modulating, stimulating, liver protecting, and cholesterol-lowering actions.[13] Ajuga turkestanica extract contains turkesterone, possibly the most potent ecdysteroid.[14]

Aralia mandshurica extract

Aralia mandshrica, also known as Aralia manchurica or Manchurian Thorn Tree, has historically been used in Russia as an adaptogen for fatigue, weakness, headaches, depression, immune support, and stress-overload. One study showed 90 percent success rate using this herb in individuals with stress overload and weakness.[15]

Rhodiola rosea

Rhodiola is a popular adaptogen. One study investigated supplementation with a single dose of Rhodiola on mental tasks performance under stress and fatigued situations. The study demonstrated significantly decreased fatigue in the treatment group compared to the placebo group.[16] Additionally, a second study evaluated students during examinations with supplementation of Rhodiola. The study found significant improvement in mental fatigue, physical fitness, and neuron-motor tests in the treatment group compared to placebo.[17] Animal studies have also shown that Rhodiola supplementation selectively moderates stress-induced anorexia.[18] Rhodiola has also been reported to have antidepressant, anti-cancer, cardioprotective, and central nervous system supportive activity. It is also believed to provide support for stress-induced conditio ns such as poor sleep, headaches, and irritability by influencing opioid peptide levels and activity.[19]

Myricetin

Myricetin is a bioflavonoid found in many fruits and berries. Research indicates that myricetin has potent antioxidant and anti-inflammatory properties.[20] Additionally, this flavanol shows anti-bacterial, anti-viral, anti-cancer activity, and potent free radical scavenger action, decreasing oxidative stress and providing generalized support to cells.[21]

Conclusion

Endocrine abnormalities are commonly associated with the symptoms of generalized fatigue and weakness. Investigation into thyroid and adrenal dysfunction is indicated in stressed and tired individuals. Natural support can help balance these conditions.

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The President's Desk

Continued from page 3

Durabolin® and Nandrolone®. The human body naturally manufactures DHEA from cholesterol, primarily in the adrenal glands. It has a key position in the corticosteroid hormone cascade. As a prohormone, DHEA is converted by the body into pregnenolone, estrogen and testosterone. In people below age 40 who are responding to stress, DHEA levels rise in the body. However, starting at age 30, at a time when DHEA is necessary to help endure the age-related hormonal shifts, DHEA blood levels decline linearly over time, decreasing by about 60 percent at age 60.

Scientific Evidence

Epidemiological studies have shown that proper levels of DHEA are essential to overall health. In the medical literature, researchers have linked low serum DHEA with an increased incidence of ischemic heart disease in middle-aged men. Higher DHEA levels (and low insulin levels) also have been linked to an increased lifespan.

Many clinical studies also have shown that DHEA supplementation is safe and that it can improve health. In a study of postmenopausal women, DHEA supplementation reversed the changes observed between early and late postmenopause, including those related to excess body weight. In a study of 280 healthy men and women, ages 60 to 79, improved bone health, increased libido and improved skin status (in terms of hydration, epidermal thickness and normalization of pigmentation) occurred in female subjects taking DHEA. Scientists have also observed an increase in perceived physical and psychological wellbeing for both men (67 percent) and women (84 percent) after DHEA supplementation.

Unfounded Safety Concerns

In both clinical practice and in the peer reviewed medical literature, DHEA has proven itself as a safe and natural prohormone. Anyone who calls DHEA a dangerous substance has not adequately studied the science.

At our company, we have taken steps to further enhance the safety of an already safe product. We offer salivary hormone testing kits so that customers can determine the proper dosage of DHEA prior to supplementation. In addition, our quality control laboratory tests DHEA (as well as our other products) for purity and potency.

Where Will It Stop?

If the Congress passes these two Bills and mistakenly classifies DHEA as a controlled, "anabolic steroid" drug, its actions could likely have far reaching consequences. For example, unlike DHEA, 7-Keto DHEA is not converted into steroid hormones. However, if the legislature classifies DHEA as a controlled substance, this close cousin also will likely remain out of the reach of consumers seeking affordable nutritional supplements. Furthermore, like DHEA, Vitamin D3 also is a prohormone before it is converted into its active form, cholecalciferol, in the body. Does this mean that vitamin D3 also is a prescription drug? The danger is that, like a snow ball rolling downhill, classifying DHEA as a controlled substance, based on unscientific information, will lead to other beneficial nutrients becoming expensive, prescription-only drugs. Natural progesterone, as another steroidal hormone, could be next in line.

Act Now To Protect Your Health Freedom

Yes, DHEA is a prohormone. But it is NOT a harmful "anabolic steroid" drug and doesn't cause the dramatic fat-loss and muscle-bulking effects of these drugs. Plenty of evidence exists to support DHEA's safety and its ability to improve health. Therefore, I urge each of you to email, fax and call your elected U.S. Senators and Representatives. Ask them to defeat S. 762 and H.R. 1249, plus prevent the adoption of amendments to other legislation that would wrongly classify DHEA as an "anabolic steroid" of abuse and a controlled substance. On our website, you will find a special report on DHEA that includes scientific research and clinical studies. Feel free to send this report to your senators and representatives. Science, after all, should speak louder than politics.

Robert Watson
President/CEO

Samento®: New Support For An Ancient Enemy—Lyme Disease

by James South, MA

Although the first record of a condition associated with Lyme disease dates back to 1883 in Breslau, Germany[1], it was not identified in the United States until 1975 when a mysterious outbreak of juvenile rheumatoid arthritis occurred around Lyme, Connecticut.[2] In 1982, Willy Burgdorfer, M.D., Ph.D., discovered the causative agent of this disease, a spirochete (spiral-shaped bacterium) from the genus Borrelia, subsequently named Borrelia burgdorferi (Bb).[2]

Lyme disease is a complex condition and often referred to as the "New Great Imitator" because, like syphilis the original "Great Imitator," it attacks multiple organ systems and mimics many diseases. Lyme disease expert Jo Anne Whitaker, M.D., notes that both diseases are caused by spirochetes.[3] Originally believed to be spread only through bites by the tiny deer tick (Ixodes dammini), it is now known to be potentially spread by many tick species, as well as bot-flies, mosquitoes and fleas.[4-5] Physicians W.T. Harvey and P. Salvato show evidence that Lyme disease may be a hidden epidemic, affecting as much as or more than one-sixth of the human race.[5]

Lyme: One Disease, Many Symptoms

Lyme disease is believed to cause, mimic, manifest as, be misdiagnosed as, or contribute to more than 300 conditions and diseases.[5-6] About 60 percent of those bitten by Bb-infected ticks or insects will develop a characteristic "bulls-eye" rash (erythema migrans), yet many confirmed Lyme disease patients never develop such a rash.[7]

While a flu-like syndrome is one of the few initial symptoms, a diversity of symptoms can occur within weeks to years, including fatigue, low grade fevers, night sweats, migrating joint pains or arthritis, muscle pains, sleep disturbances, frequent and/or severe headaches, numbness or tingling in hands or feet, nerve pains, brain fog, hypersensitivity to lights, sounds, tastes or smells, speech difficulties, depression, irritability, mood swings,[8] heart, eye, respiratory and gastrointestinal problems,[2] and more. The Bb spirochete may penetrate into the brain as early as three weeks after infection.[9]

Lyme: Difficult and Controversial Diagnosis

Why has Lyme disease become surprisingly controversial?[10] Mainly due to the CDC's (United States Centers for Disease Control and Prevention) strict formal set of criteria for Lyme disease diagnosis that makes it difficult to confirm the disease. Many conservative physicians use the CDC's Lyme disease surveillance criteria as clinical diagnostic criteria including laboratory confirmation through ELISA (enzyme-linked immunosorbent assay) and/or Western blot antibody testing.[9]

Yet as Lyme disease expert Brian Fallon has written, "Although laboratory testing is a valuable component of the diagnostic assessment, negative test results cannot be used to exclude Lyme disease…. Because the laboratory tests for chronic Lyme disease are not sufficiently reliable to document the presence or absence of persistent infection, decisions regarding treatment should be based primarily upon the physician's clinical judgment."[9]

However, Dr. Jo Anne Whitaker, M.D., has developed a new "Quantitative-Rapid Identification of Borrelia burgdorferi" test (QRIBb©) to confirm the disease. Using a fluorescent antibody technique, Whitaker has confirmed Lyme disease in 3,500 blood specimens from ill patients. Her results in many cases were checked by world-renowned microbiologist Dr. Lida Mattman, who was able in every case to culture and identify live Bb spirochetes from the blood samples the QRIBb test had already certified as Bb-positive.

She has found many patients that indeed had Lyme disease were given a false negative diagnosis (e.g., ALS), and in many cases, recovered from "incurable" ailments after antibiotic treatment.[10-11]

Lyme Disease: Treatment Controversies

A confirmed diagnosis of Lyme disease is normally treated with antibiotics. Fallon states that for early Lyme disease without central nervous system (CNS) involvement, three to four weeks of oral doxycyline, amoxicillin or cefuroxime is recommended.[9] For Lyme disease with CNS involvement, a four-to-six-week intravenous treatment with ceftriaxione or cefotaxime is recommended.[9] He recommends longer and repeated courses of antibiotic treatment for relapsing patients.[9]

Yet many conservative physicians treating Lyme disease give only a two- or three-week course of antibiotics, frequently only orally. Because intravenous antibiotic care may cost tens of thousand of dollars, medical insurers and medical benefit managers often discourage or deny such treatment.

Conversely, Dr David Jernigan, co-author of a recent book on Lyme disease, observes that "It is not enough simply to take an antibiotic: even intravenous antibiotics will only kill 85 percent of the bacteria at best, leaving 15 percent alive and now antibiotic resistant…."[12]

Samento

Given the recognized difficulty of successfully treating Lyme disease with standard antibiotic therapy, an alternative is available that is natural, nontoxic, well-tolerated, effective, and can be taken orally for as many months or years as needed.

This alternative is an herbal extract called "Samento," derived from a Peruvian vine called "Uncaria tomentosa," also known as "cat's claw," "una de gato," and "Vilcacora."[13] Samento is made from a rare chemotype of U. tomentosa rich in

pentacyclic oxindole alkaloids (POA) and guaranteed free of tetracyclic oxindole alkaloids (TOA). It is the TOA-free nature of Samento, combined with its POA potency that gives Samento its unique effectiveness.

Oxindole Alkaloids

K.-H. Reinhard has noted "…The pentacyclic oxindole alkaloids act on the cellular immune system. They raise the rate of phagocytosis [germ-killing] by granolucytes [a type of white blood cell]… and they induce the release of a factor from endothelial cells [which line the heart, blood and lymph vessels] that regulates the proliferation of lymphocytes [germ-killing white cells]…."[14] Falkiewicz and Lukasiak report that the POA-stimulated endothelial factor activates normally inactive B and T lymphocytes in humans, increasing germ-killing power.[13]

Samento: More than POA

The water-alcohol Samento extract also contains many other beneficial components such as multiple quinovic acid glycosides. These compounds are what the latest generation of quinolone antibiotics (such as Cipro®) are based on and provide safe and significant direct antimicrobial effects on Lyme disease.[15] Samento also contains the triterpenes oleanolic and ursolic acid which have liver-protective, anti-inflammatory, antiviral, antibacterial, anti-ulcer, immunostimulating/modulating and blood sugar-lowering properties.[13] Catechin polyphenols, including epicatechin, with anti-inflammatory and blood sugar-lowing effects, are also present in Samento.[13]

In fact, a 1998 study verified Samento's powerful anti-inflammatory effects through multiple in vitro and in vivo experiments.[16] The cat's claw extract reduced the production of toxic peroxynitrite, stimulated by a bacterial toxin, and reduced subsequent cell death. The study's authors concluded: "Cat's claw protects cells against oxidative stress and negated the activation of NF-kB [a powerful pro-inflammatory chemical whose production is stimulated by toxins]."

In a subsequent study, the same research group found that cat's claw extract reduced TNF-alpha expression stimulated by a bacterial toxin 65 to 85 percent, at only nanogram levels of cat's claw. TNF-alpha is one of the most powerful pro-inflammatory cytokines released (often to excess) by white blood cells when challenged by germ toxins.[17]

Samento: Clinical Use

After treating 60 patients with Samento, John Kule, M.D., wrote his findings in a report for the *British Naturopathic Journal*. He used it to treat a broad range of conditions, including chronic fatigue, fibromyalgia, hypertension, irritable bowel syndrome, candidiasis, gastritis, rheumatoid and osteoarthritis, Lyme disease and benign prostatic hypertrophy. Fifty-nine out of 60 showed distinct clinical improvement.

"Even intravenous antibiotics will only kill 85 percent of the bacteria at best, leaving 15 percent alive and now antibiotic resistant."

Frequent findings were increased energy, enhanced sense of well-being, lifting of "brain fog," decreased inflammation, decreased blood pressure in hypertensives, decreased fasting blood sugar in diabetics, reduced fluid retention, and reduced blood pressure medication in hypertensives.[18]

Dr. Lee Cowden, M.D., of Fort Worth, Texas, used Samento along with diet, detoxification and supplements with 13 patients with documented Lyme disease, while leaving 14 Lyme disease patients in the control group on their regular antibiotic regimen. Three of the control group members became slightly better, three became worse and eight were unchanged. The entire Samento group experienced dramatic improvements, with 11 of 13 testing negative for Bb at the end of the study.[15, 2]

Samento: Slow But Steady

Due to the unique life cycle of Bb, a quick complete elimination of Bb is unrealistic to expect. Because Bb hides inside cells, often in a dormant cyst form, it spends much of its life cycle sequestered from antimicrobial compounds. When cells die naturally, or from the intracellular presence of Bb, the cysts are released into tissue fluids or blood, where they become a spirochete once again. It is then that they are most vulnerable to antibiotics or Samento.

Since the various cells that hide Bb will typically have life spans ranging from two to three weeks up to six to eight months, it may take six to eight months for even one generation of Bb to become exposed to Samento for elimination. Thus it may take eight to 16 months to gradually kill the Bb. Since Samento is nontoxic,[14,19] it can be taken daily for as long as necessary to eradicate Bb from an infected body.

Samento: Cautions

Because Samento empowers the immune system, it should not be used by those on immunosuppressive drugs, e.g. to prevent transplant rejection, nor should it be taken by those who are soon to undergo organ or bone marrow transplants.[20] Since Samento has been shown to lower blood pressure and blood sugar, those with severe low blood pressure or hypoglycemia should use caution when taking it.[18] Pregnant or nursing mothers and young children should not use Samento unless advised by a physician.[20] Samento should be taken in low doses at start (one drop in four ounces of water twice daily), slowly working up to five drops two or three times daily, taken on an empty stomach. Because Samento enhances immune activity and directly kills germs, it may trigger a Herxheimer reaction, especially if started at too high a dose or with too rapid dose increase.

The Herxheimer reaction may include headache, muscle pain, nausea, diarrhea, or flu-like symptoms, possibly due to toxins released via the influx of dead microbes killed by the treatment, as well as to the immune system's inflammatory overreaction to the germ toxins. Drinking lots of water and taking fiber and liver support supplements (silymarin, dandelion root extract, lipoic acid) may reduce the risk or severity of a Herxheimer reaction.

If such a reaction occurs when taking Samento, cease its use temporarily and restart later at a lower dose. Those known or suspected to suffer from Lyme disease or other serious infectious illness should ide-

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Coral Calcium: Restoring pH Balance Improves Bone Strength and Overall Health

Complementary Prescriptions Staff

One of the most important, but perhaps least talked about, aspects of overall health is improving the pH of the body. When an individual experiences an excessive level of acidity, he or she is vulnerable to many conditions, including muscular pain, low energy, food allergies, hyperactivity, panic attacks, depression, Systemic Lupus Erythematosis, and Rheumatoid Arthritis (Table 1). Depending on the level of acidity and the overall health and immune integrity of each individual, one or more of the symptoms or disease conditions listed in Table 1 may manifest themselves in compromised individuals.[1]

TABLE 1. Symptoms and Conditions Linked to Excessive Acidity

- Muscular pain
- Dizziness
- Low energy
- Food allergies
- Cold hands and feet
- Joint pains
- Hyperactivity
- Panic attacks
- Strong smelling urine
- Brain fog
- Depression
- Excessive hair loss
- Learning disabilities
- Hodgkin's Disease
- Crohn's Disease
- Systemic Lupus Erythematosis
- Multiple Sclerosis
- Rheumatoid Arthritis
- Myasthenia Gravis
- Leukemia
- Tuberculosis
- Cancer
- Candida Albicans Infections
- TMJ Disorders
- Periodontal Disease
- Obesity
- Heart and Circulatory Disease

One of the reasons many people's bodies have become over acidic is due to poor dietary habits. Most Americans are not consuming enough fruit or cruciferous vegetables and the average American annually consumes approximately 60 pounds of cakes and cookies, 23 gallons of ice cream, 7 pounds of potato chips, 90 pounds of fat and 134 pounds of sugar. These are all acidic-ash forming foods, which can lead to chronic and sometimes fatal diseases.

Establishing a Healthy pH Level

To live an optimally healthy life, steps need to be taken to reach the recommended 80 percent alkaline and 20 percent acid-producing diet. To accomplish this, individuals should consume a diet rich in raw fruits and vegetables[2] supplemented with an organic green drink.In addition, coral calcium, and in particular the formula Coral Balance, is an especially useful mineral formula that can help support proper pH levels.

Coral Balance improves bone density while at the same time maintaining proper blood alkalinity levels. The broad levels of minerals present in the formula assist in the neutralization of blood acidity levels that are often disrupted in today's fast-food world.

Recent studies have pointed to coral calcium as a mineral that may help change the body's pH level from acid to alkaline and better support healthy resistance against unwelcome fungi and other enemy flora. Reports from such studies indicate that calcium has a profound beneficial influence on individual cell pH and serves as a buffer to regulate the body's acidity.[1] One of the reasons calcium is so effective at restoring proper pH is because research has shown that in a highly acidic environment, the body will take calcium from the bones to restore balance. Consequently, a highly acidic balance leads to osteoporosis and kidney stones.

Combining coral calcium derived from above-sea deposits (100% pure Okinawan Sango Coral) with vitamin C, vitamin D, magnesium, and 4 mg of boron (for enhanced bio-availability and mineral metabolism), can be a particularly effective way to restore the alkaline state of the body, improving overall health.

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Samento

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ally use Samento under the care of a doctor or other health care professional.

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Customer Corner Supplement Index

From pages 9-11

Choline Recommendations May Be Too Low

Current recommendations for choline intake are likely too low for a large segment of the population, a new study has found.

Choline is an essential nutrient that plays a role in normal cell function and transportation of nutrients through the body. Dietary sources include eggs, beef liver, chicken liver and wheat germ.

An adequate intake level of 550 mg for men and 425 mg for women currently exists for choline. However, no Estimated Average Requirement has been set because of insufficient human data.

Due to this lack of data, researchers at Pennsylvania State University decided to evaluate healthy men and women's dietary requirements for choline and to determine how choline deficiency affects the human body.

The study included 57 subjects (26 men, 16 premenopausal women and 15 postmenopausal women). They received a diet containing 550 mg choline (the adequate intake for men) for ten days, then consumed less than 50 mg for up to 42 days.

When the subjects were on the lower dose of choline, fatty liver or muscle damage occurred in 77 percent of the men, 80 percent of the postmenopausal women, and 44 percent of the premenopausal women. Six of the men experienced the same signs of choline deficiency even when they consumed the 550 mg of choline per day. Researchers found that 19 percent of subjects needed as much as 825 mg of choline in order to avoid damage.

In subjects who developed organ dysfunction during the choline-deficient diet, organ function was restored when researchers added incremental amounts of choline back into the diet.

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Fischer LM, daCosta KA, Kwock L, Stewart PW, Lu T, Stabler SP, Allen RH Zeisel SH. Sex and menopausal status influence human dietary requirements for the nutrient choline. American Journal of Clinical Nutrition. May 2007;85(5):1275-1285.

Folic Acid Important for the Vascular System

Researchers conducting a new review of the medical literature have determined that folic acid can significantly reduce the risk of strokes.

The scientists analyzed relevant randomized trials to assess the efficacy of folic acid supplementation in the prevention of strokes. They collected data from eight randomized trials that studied folic acid's effects on risk of stroke. In analyzing the data, they also looked at factors that could affect the treatment results.

After conducting their review, the scientists found that folic acid supplementation significantly reduced the risk of strokes by 18 percent. A greater beneficial effect was seen in those trials with a treatment duration of more than 36 months and where there was a simultaneous decrease in the concentration of homocysteine of more than 20 percent.

The researchers concluded, "Our findings indicate that folic acid supplementation can effectively reduce the risk of stroke in primary prevention."

Reference:

Wang X, Qin X, Demirtas H, Li J, Mao G, Huo Y, Sun N, Liu L, Xu X. Efficacy of folic acid supplementation in stroke prevention: a meta-analysis. Lancet. 2007 Jun 2;369(9576):1876-82.

Cod Liver Oil Increases Sense of Well-Being

Individuals who regularly consume cod liver oil, rich in omega-3 fatty acids, over the long-term are less likely to suffer from symptoms of depression, a new study has found.

Clinical trials have suggested that omega-3 fatty acids improve the outcome of depression. Consequently, researchers in the current study evaluated the association between intake of cod liver oil, rich in omega-3 fatty acids, and symptoms of depression and anxiety in the general population.

The study authors used data from the "The Hordaland Health Study '97-'99" (HUSK), a population based cross-sectional health survey from Norway including 21,835 subjects aged 40-49 and 70-74 years. Symptoms of depression and anxiety were measured by The Hospital Anxiety and Depression Scale.

Among the participants, 8.9 percent used cod liver oil daily. A total of 3.6 percent had high levels of depressive symptoms. The prevalence of such depressive symptoms among the subjects who used cod liver oil daily was 2.5 percent, as compared to 3.8 percent in the rest of the population. The users of cod liver oil were significantly less likely to have depressive symptoms than non-users after adjusting for multiple possible confounding factors, including age, gender, smoking habits, coffee consumption, alcohol consumption, physical activity, and education. In addition, in a subset of the population aged 40-46 years, the prevalence of high levels of depressive symptoms decreased with increasing duration (0-12 months) of cod liver oil use.

Reference:

Raeder MB, Steen VM, Vollset SE, Bjelland I. Associations between cod liver oil use and symptoms of depression: The Hordaland Health Study. J Affect Disord. 2007 Aug;101(1-3):245-249.

Blueberries Improve Cognitive Health

A new animal study indicates that consuming blueberries may reduce the severity of Alzheimer's and other cognitive disorders.

The researchers randomly assigned young male rats a diet containing two percent blueberry extract or a control diet for at least eight weeks. The scientists then replicated the neuronal loss experienced by people suffering a neurodegenerative disease by giving the rats either a phosphate buffered saline or kainic acid. Behavioral studies were then performed and brain functioning was studied to determine any differences in neuronal loss.

The animals fed a blueberry supplemented diet had enhanced behavioral

performance, experienced significantly less brain cell loss, and had more viable brain cells following oxidative stress.

According to the researchers, "The present findings indicate that rats exhibited impaired performance in maze learning following intra-hippocampal injection of kainic acid and that a blueberry enriched diet provided significant protection against these decrements in performance."

Additionally, the researchers documented clear evidence that "the blueberry-enriched diet reduced neuronal loss resulting from the excitotoxic effects of kainic acid."

Reference:

Duffy KB, Spangler EL, Devan BD, Guo Z,. Bowker JL, Janas AM, Hagepanos A, Minor RK, DeCabo R, Mouton PR, Shukitt-Hale B, Joseph JA, Ingram DK. A blueberry-enriched diet provides cellular protection against oxidative stress and reduces a kainate-induced learning impairment in rats. Neurobiology of Aging (Elsevier). Published online ahead of print 23 May 2007.

Anyone who wants to increase his or her intake of blueberries and other fruit can consume NanoGreens$^{10}_{TM}$, which includes the equivalent of 10 servings of fresh fruits and vegetables in one serving.

Flaxseeds May Protect the Prostate

Daily flaxseed consumption may slow the rate of prostate cancer tumor growth, a new human study has found.

Past studies by the same researchers conducted in humans and animals have shown a link between flaxseed supplementation and slowed tumor growth. However, the subjects in those studies consumed flaxseed in conjunction with a low-fat diet.

In the new study, presented at the annual meeting of the American Society of Clinical Oncology in Chicago, the researchers enrolled men scheduled to undergo surgery for the treatment of prostate cancer. The subjects consumed 30 grams of flaxseed every day for an average of 30 days. After removal of the men's tumors, the scientists evaluated the rate at which the cancer cells had multiplied.

The subjects were divided into four groups, each containing roughly 40 participants. Subjects consuming flaxseed, either alone or in conjunction with a low-fat diet, were compared to men consuming a low-fat diet without flaxseed. The researchers also established a control group who consumed their normal supplements and daily diet. Each group was made up of about 40 participants.

The researchers found that men in both of the flaxseed groups had the slowest rate of tumor growth. Men who consumed only flaxseed as well as those who took flaxseed combined with a low-fat diet had the best results, indicating flaxseed was generating the improvement and not the low-fat diet.

The researchers believe that because flaxseed is a source of omega-3 fatty acids it may influence how cancer cells congregate or adhere to other body cells. It could therefore help stop the cellular activity related to cancer growth. The lignans contained in flaxseed also are known to stop angiogenesis, the process by which new blood vessels are formed to feed cancer cells, causing the cancer cells to spread to other sites in the body.

Reference:

Demark-Wahnefried W, et al. Study presented at the annual meeting of the American Society of Clinical Oncology, Chicago, Saturday, June 2, 2007.

Echinacea Enhances Immunity

A new review of the medical literature has found that consuming echinacea supplements may result in a significantly reduced risk of contracting the common cold.

Researchers conducted an analysis of the medical literature to evaluate the effect of echinacea on the incidence and duration of the common cold. In reviewing 14 studies, researchers found that echinacea decreased the odds of developing the common cold by 58 percent and the duration of a cold by 1.4 days.

In one of the studies, echinacea consumed with vitamin C reduced cold incidence by 86 percent. Use of echinacea alone was associated with a 65 percent reduced risk of contracting a cold.

The reviewers concluded, "Published evidence supports echinacea's benefit in decreasing the incidence and duration of the common cold."

Reference:

Shah SA, Sander S, White CM, Rinaldi M, Coleman CI. Evaluation of echinacea for the prevention and treatment of the common cold: a meta-analysis. Lancet Infect Dis. 2007 Jul;7(7):473-80.

Cinnamon Helps Maintain Healthy Blood Sugar Levels

Researchers have confirmed that the consumption of cinnamon helps reduce the rate of gastric emptying and decreases the rise in blood sugar after eating.

Previous studies of patients with type 2 diabetes showed that cinnamon lowers fasting serum glucose, triglycerides, and LDL- and total cholesterol concentrations. In the current study, researchers examined the effect of cinnamon on the rate of gastric emptying, the post-meal blood glucose response, and satiety in healthy subjects.

In the crossover trial, researchers measured the gastric emptying rate in 14 healthy subjects. The subjects were examined after an 8-hour fast if they had normal fasting blood glucose concentrations. The gastric emptying rate was calculated 15-90 minutes after subjects ingested 300 grams rice pudding or 300 grams rice pudding and 6 grams of cinnamon.

Although cinnamon did not affect satiety, the addition of cinnamon to the rice pudding significantly delayed gastric emptying and lowered the increase in blood sugar that occurs after eating.

Reference:

Hlebowicz J, Darwiche G, Björgell O, Almér LO. Effect of cinnamon on postprandial blood glucose, gastric emptying, and satiety in healthy subjects. Am J Clin Nutr. 2007 Jun;85(6):1552-6.

Cinnamon's active compounds are found in Cinnulin PF®, a water-soluble cinnamon extract, developed with assistance from noted cinnamon researcher Dr. Richard Anderson.

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