

Vitamin Research News

Dedicated to the Scientific Pursuit of Better Health

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The President's Desk

Part IV: Conclusion of "Is Conventional Medicine (CM) Evidence-Based?"

In this final installment of highlights excerpted from "Is Conventional Medicine (CM) Evidence-Based?" by respected hormone replacement researcher, John Lee MD, we conclude our four-part presentation of Dr. Lee's insightful observations on the qualitative differences between Conventional Medicine (CM) and Alternative Medicine (AM).

- *Conventional Medicine does not recognize that progesterone is a neuroactive hormone. In addition to the anxiolytic (anxiety relieving) effect of its metabolite, allopregnanolone, receptors for progesterone are present in several brain areas: amygdala, hippocampus, cortex, basal forebrain, cerebellum, locus coeruleus, midbrain rafe nuclei, glial cells, pituitary gland, hypothalamus, and central gray area. Progesterone is important to brain function and synthesis of myelin proteins.*
- *Conventional Medicine believes topical progesterone is not well-absorbed. This error stems from a long-standing reliance on "blood" (serum or plasma) tests that fail to measure the total "free" hormone, much of which is carried in blood by red blood cells. Saliva tests measure all bioavailable progesterone, whether from serum or red blood cells. A recent study confirmed that concentration of bioavailable progesterone is considerably greater when equivalent doses are applied topically (vaginal) than when taken orally. Furthermore, topical application provides less relative variability than oral dosing.*

- *Conventional Medicine believes that serum testing by radioimmune assay (RIA) is the gold standard for measuring progesterone concentrations in blood. The fact is that liquid chromatography-mass spectrometry (LC-MS) is far more accurate. RIA does not discriminate between bio-available progesterone, per se, and protein-bound, non-bioavailable progesterone or its various metabolites. RIA leads to erroneously high values (eight-fold higher) compared to that found by LC-MS. The RIA serum test for progesterone is simply not appropriate. (LC-MS tests or saliva hormone assay are far superior.*

- *Conventional Medicine believes saliva hormone assays are unreliable. This is not true: saliva assays are reliable. The problem is that most doctors do not know how to utilize saliva testing: they think that saliva hormone levels should be equal to blood (serum) tests. Further, they do not understand the pharmacokinetics of transdermal absorption, as the following examples illustrate.*

The Wren study found such a wide range of saliva hormone levels after transdermal progesterone usage that they concluded it was not reliable. They did not realize that peak absorption occurs in 2-3 hours after application or that progesterone excretion clears 90% of progesterone from the blood (and saliva) about 15 hours after application. Therefore, testing saliva hormone levels at different times during absorption and excretion results in greatly different readings. They did not standardize the collection time of saliva relative to application time. The proper time for saliva collection is 8-10 hours after application, midway between peak absorption and later excretion.

The O'Leary study compared saliva levels with serum progesterone levels (rather than comparing saliva levels after transdermal application and saliva levels of healthy, ovulating women during their luteal phase). They concluded that saliva levels were not as high as serum progesterone levels of women during their luteal phase, and hence not sufficient for endometrial protection against estrogen-induced hyperplasia and possible cancer. The authors did not understand that saliva measures bioavailable hormone and serum tests primarily measure protein-bound (non-bioavailable) hormone, nor did they bother to see if the endometrial cells were normal or not.

- *After oophorectomy, Conventional Medicine most commonly prescribes estrogen replacement and rarely considers the other two major ovarian hormones, progesterone and testosterone. Testosterone deficiency is rarely recognized in women. It can cause lack of energy, depression, and loss of libido. It is now shown that testosterone deficiency is best diagnosed by "free" testosterone measurements, rather than usual serum testing, and that transdermal testosterone replacement of 0.15-0.5 mg/day is very effective.*

- *Many physicians believe "stress is all in your head." Good evidence shows that progesterone production is modulated by alpha-adrenergic effects via*

the coeliac ganglion and the superior ovarian nerve. Also, hypo- and hypercortisosteronism (as can happen from chronic stress) decreases progesterone production.

- *Conventional Medicine has no effective treatment for postpartum depression. Evidence shows that postpartum depression occurs primarily in women with unusually low salivary progesterone levels following birth. In fact, postpartum “blues” inversely correlate with a progesterone metabolite, allopregnanolone.*
- *Conventional Medicine fails to recognize that progesterone is thermogenic. Premenopausal women presenting with low basal body temperature are likely to be progesterone-deficient, rather than thyroid-deficient.*
- *Conventional Medicine fails to recognize that oral estrogen supplements (ERT and HRT without progesterone) increase circulating levels of sex hormone-binding-globulin (SHBG), thyroxine-binding-globulin (TBG), and cortisol-binding-globulin (CBG), whereas transdermal estradiol had no such effect. Hormone protein binding inhibits hormone bioavailability. Oral estrogen supplementation may be a major factor in raising the incidence of hypothyroidism that is now epidemic in the U.S.*
- *Conventional Medicine, despite admitting that gall bladder disease may be linked to estrogen, is unaware of the mechanism by which progesterone protects against it. Progesterone, but not estrogen, testosterone, cortisone, or thyroid hormones, prevents contraction of the sphincter of Oddi, thus enhancing bile flow.*
- *Estrogen impairs oxygenation of cells, whereas progesterone increases oxygenation.*
- *Conventional Medicine is unaware that HRT with progesterone provides better sleep for postmenopausal women than HRT with MPA (medroxyprogesterone acetate). The benefit is probably due to the anxiolytic effect of a progesterone metabolite, allopregnanolone.*

Conclusion: Conventional medicine believes all sorts of things that are neither true nor evidence-based. It is hypocrisy to claim otherwise. The complex dynamics of health and cell life are so heterogeneous that single factor testing (so admired by CM) is often misleading. Evidence is not a thing; it is an interpretation of observations. When dead herring wash up on a beach it correlates very strongly with an abundance of seagulls in the area but it is not evidence that the seagulls caused herring to die and wash up on a beach. Interpretation is the result of one’s knowledge of underlying connections. Conventional medicine does not have a monopoly on interpretation. Alternative explanations of observed biological circumstances must be judged on their merits, not by conformance with some established convention.

John R. Lee, MD

In Memoriam



Sadly, on October 17, in the final moments of editing this newsletter, I received a call from Dr. Ward Dean informing me that Dr. John Lee had suddenly passed away. Dr. Lee and Dr. Dean were attending a conference in Fresno California, where both were scheduled to speak at the 3rd Annual *Women's Symposium on Health and Vitality—The Ageless Woman: Improving Vitality and Longevity Naturally*.

Following graduation from both Harvard University and the University of Minnesota Medical School, Dr. Lee set up a private family practice, which he maintained for 30 years. Dr. Lee later gained attention as an internationally renowned pioneer and expert in natural hormone replacement therapy, in addition to being a researcher/writer/lecturer covering topics such as nutrition, fluoridation, hormones, and preventive medicine. He has been published in several scientific journals over the past ten years, and is the author of many books.

For over 30 years Dr. Lee was a lone voice written off by the orthodox medical community. Recently medical evidence has vindicated him, and his latest findings—reproduced in this column over the last four months—have entered mainstream medicine.

At the time of his passing Dr. Lee was doing what he has done throughout his long and distinguished career—teaching lay audiences and medical professionals about hormone balance and health, and empowering women to take control of their hormones. Dr. Lee was devoted to improving the health and quality of life for all women, and his work will continue on even as those of us who knew him mourn his passing.

On a personal note, my wife and I have lost a great friend, a man with

passion and conviction who genuinely cared about the health and well being of people. We will cherish our memories of travel with he and his wife, Pat to Europe, Alaska and most recently Lake Tahoe. We will miss his jokes, his magic tricks but most of all his friendship. We are honored to have known him both professionally and personally.

Robert Watson
President/CEO

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Carnosine and N-Acetylcarnosine Eye Drops **New Hope for Cataracts**

by Ward Dean, MD

Cataracts are the leading cause of blindness, accounting for about 42 percent of all cases of blindness worldwide (affecting about 17 million people). Twenty-eight thousand new cases are reported everyday. About 20 percent of all people over 60 have at least the beginning of a cataract in one or both eyes, and that figure rises to 80 percent for people over 75.

The most common type of cataract — a nuclear cataract — is characterized by a cloudy haze inside the lens (Fig. 1).

This haze is the physical manifestation of a random clumping together of the once beautifully ordered arrangement of lens proteins called crystallins. As the cataract develops in size and density, it reduces the amount of light that passes through the lens and scatters the light that does get through. Thus, instead of all the light rays being focused precisely to a point on the retina, forming a sharp, clear image of what we are seeing, many of the rays are spread out across the retina, forming a fuzzy image. Colors may be dulled or distorted, and there may be an annoying halo of light around bright objects, causing a glare effect.

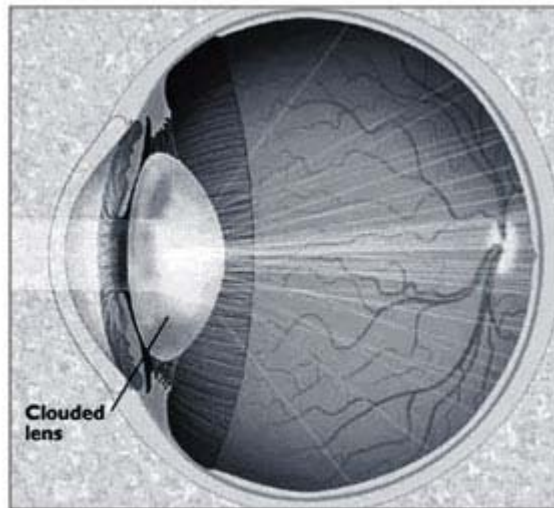


Fig 1. Nuclear cataract clouds lens.

Causes of Cataracts

Causes of cataracts include cumulative ultraviolet radiation damage from sun exposure, heredity, poor nutrition, smoking, high blood pressure, kidney disease, diabetes, and the long-term use of corticosteroids (the last two are major risk factors for cataracts). Oxidative free radicals produced by the above-listed causes are thought to damage vital biomolecules, including lipids and proteins, resulting in the clumping together of these proteins. The antidote to free radicals, of course, is antioxidants, such as glutathione, lipoic acid, and vitamins C and E. Consequently, many scientists believe that abundant consumption of antioxidants may delay the onset of cataracts.

Nutrients for Vision

Good nutrition is a key element of effective prevention for most age-related diseases, and cataracts are no exception. A number of nutrients can benefit our eyes, and may help prevent diseases such as cataracts, glaucoma, and macular degeneration. These nutrients include the tripeptide glutathione (the most abundant and important antioxidant in the human body, critical for protecting the lens from free radical damage); vitamins A and C; vitamin E and some of the B vitamins; various bioflavonoids (especially quercetin and hesperidin) and carotenoids (especially lutein and zeaxanthin); the amino acids taurine, N-acetylcysteine (a precursor of glutathione), and acetyl L-carnitine; the hormone melatonin; the alkaloid vinpocetine; the herbs bilberry, ginkgo, and garlic; the minerals zinc and selenium; and, last but certainly not least, the saturated fatty acid, lipoic acid (“the antioxidant’s antioxidant”), which plays a central role in maintaining the body’s antioxidant network.¹

Carnosine for Vision

Carnosine — a dipeptide consisting of two amino acids (alanine and histidine) connected to each other by a chemical bond called the peptide bond — is one of the most exciting anti-aging nutrients that has recently become widely available.² Based on research performed mainly by Russian scientists, it is believed that carnosine is effective both in preventing and treating cataracts.³⁻⁶

The ability of carnosine to prevent and treat cataracts is believed to be due to its antioxidant properties and its ability to inhibit a chemical process called glycation. Glycation leads to deleterious substances called AGEs (advanced glycation end products). AGEs are chemical complexes that result from common but undesirable reactions between blood sugars, such as glucose, and proteins in many parts of our bodies, including the lenses of our eyes. The sugar-protein complexes become chemically cross-linked and degrade cellular functions. The aptly named AGEs are thought to be an important factor in the aging process.

Carnosine-containing eye drops have demonstrated efficacy in treating a variety of ophthalmic conditions, including corneal diseases, cataracts,

glaucoma, and increased intraocular pressure. In 1997, clinical trials with carnosine-containing eye drops were conducted on 109 ophthalmic patients. The results confirmed accelerated healing of corneal erosions, trophic keratitis, post-herpetic epitheliopathy, primary and secondary corneal dystrophy, and bullous keratopathy.⁷ Most striking, however, was the ability of carnosine to eliminate existing cataracts.⁸

Carnosine eye drops have been shown to delay vision senescence in humans, being effective in 100 percent of cases of primary senile cataract and 80 percent of cases of mature senile cataract. Scientists concluded that “carnosine seems to delay the impairment of eyesight with aging, effectively preventing and treating senile cataract and other age-related diseases.”⁹ Carnosine actually restores the proteins in the lens by removing cross-linked carbonyl groups, and is thought to function as a “molecular water pump,” thereby also helping to lower intraocular pressure.¹⁰ In earlier experiments it was demonstrated that applying carnosine to the conjunctiva (the membrane covering the eye) caused a decrease in normal intra-ocular pressure and reduced prostaglandin-induced ocular hypertension (related to glaucoma) in rabbits.¹¹

Some scientists believe that carnosine is ineffective if it is metabolized (broken down) by the enzyme, carnosinase. However, studies of corneal transplants in rabbits that were treated with one of the metabolites of carnosine, histidine, indicates that the metabolite itself may be bioactive. Five percent histidine ointment was applied twice daily to 6 transplants for two months. All six transplants healed and were clear. On the other hand, transplants which were treated with daily applications of one percent cortisone became opaque, necrotic, and failed to heal. Likewise, transplantation failed completely in six control eyes.¹² This indicates that histidine may be an active portion—if not the active factor—of the carnosine molecule.

Cataract-Dissolving Analog: N-Acetylcarnosine (NAC)

N-acetylcarnosine (NAC), like its parent compound, carnosine, occurs naturally throughout the human body. Both compounds are found primarily in the heart and skeletal muscles (the word carnosine is derived from the Latin word for flesh) and in the brain. Carnosine was discovered in 1900 in Russia, and it is in Russia that most of the recent research on the N-acetylcarnosine derivative has been carried out.¹³⁻¹⁵ Research with N-acetylcarnosine, as with carnosine, demonstrates that it is effective not only in preventing cataracts but also in treating them. NAC has been shown to improve vision by partially reversing the development of the cataract, thus increasing the transmissivity of the lens to light.

The structural difference between NAC and carnosine is that one hydrogen atom in carnosine replaces an acetyl group (CH₃CO-), and this substitution occurs at a nitrogen atom. An important chemical difference between carnosine and N-acetylcarnosine is that carnosine is relatively insoluble in

lipids (fats and fatty compounds), whereas N-acetylcarnosine is relatively soluble in lipids (as well as in water).

This means that N-acetylcarnosine may pass through the lipid membranes of the corneal and lens cells more easily than carnosine, and may thereby gain access more readily to the cells' interior, which is primarily aqueous. There, the N-acetylcarnosine is gradually broken down to carnosine (and, perhaps, to histidine), which then exerts its beneficial effects.

N-Acetylcarnosine also Reduces Cataracts

In one study, Russian scientists conducted two randomized, double-blind, placebo-controlled trials of 6-months and 24-months duration, with eye drops consisting of a one percent aqueous solution of NAC administered as two drops twice daily.¹⁶ They treated a total of 49 elderly patients (average age 65) with cataracts ranging in severity from minimal to advanced (but not to the point of requiring surgery); the total number of eyes affected was 76. Using a variety of sophisticated optical techniques, they monitored the condition of the cataracts, visual acuity, and glare sensitivity.

The eyes treated with NAC were substantially improved in 6 months: the measured transmissivity of the lenses increased in 42 percent of the eyes, by 12-50 percent; in 90 percent of the eyes, visual acuity improved by 7-100 percent; and in 89 percent of the eyes, glare sensitivity improved by 27-100 percent. These improvements were sustained for the duration of the 24-month trial. In no eyes was any worsening of the condition seen. By contrast, the condition of the untreated eyes in the control group worsened. Visual acuity dropped in 89 percent of the controls by 17-80 percent after 24 months.

Another interesting study by the same team also evaluated patients between the ages of 48 and 60, who had various degrees of eyesight impairment, but who did not have the symptoms of cataract. After a course of treatment ranging from 2 to 6 months, the conclusion was that the eye drops alleviated eye-tiredness and continued to improve eyesight (i.e. there was more clear vision). The subjects reported that the treatment "brightened" and "relaxed" their eyes. This is an important indicator that the eye drops have a value both for preventive purposes, as well as medical applications.

Conclusion

Carnosine and N-acetylcarnosine eye drops appear to be a safe, effective means to prevent cataracts, and to possibly even treat cataracts that are forming. Although cataract surgery is safe and highly effective, the use of topical carnosine or NAC eye drops may give many people another option.

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Wide-Ranging Benefits From Ayurvedic Herb **Forskolin and cAMP**

by Ward Dean, MD

Forskolin is an extract from the plant, *Coleus forskohli*. *Coleus* has been traditionally used in Ayurvedic medicine for a variety of conditions, including hypertension, asthma, eczema, psoriasis, congestive heart failure, and angina. The effects of forskolin have been intensively researched in in vitro, animal, and human clinical studies.

Mechanism(s) of Action

Forskolin acts primarily by activating the enzyme adenylate cyclase, which results in increased cyclic adenosine monophosphate (cAMP) in cells. Cyclic AMP belongs to a class of substances known as “second messengers,” and is one of the most important cell-regulating compounds. Among its many roles, cAMP activates numerous other enzymes involved in diverse cellular functions. Hormones and neurotransmitters also activate adenylate cyclase—but forskolin appears to be able to activate adenylate cyclase by itself. Thus, forskolin can increase cyclic AMP without the assistance of hormones or neurotransmitters.

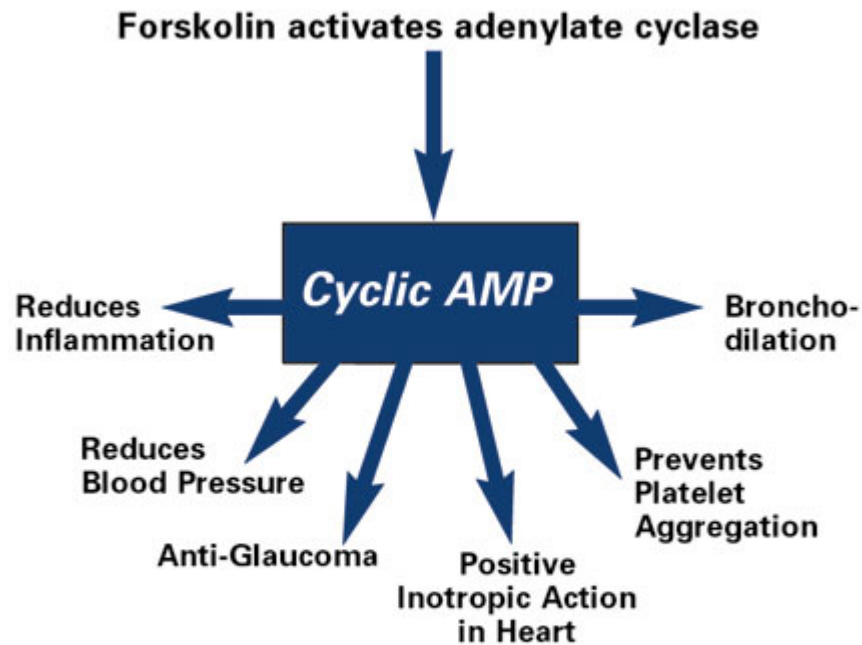


Fig. 1. Effects of increased intracellular levels of cyclic AMP (cAMP) induced by forskolin.

Effects of Cyclic AMP

Increased cellular cyclic AMP results in a broad range of physiological and biochemical effects, including inhibition of platelet activation (resulting in decreased likelihood of blood clots), reduced release of histamine (resulting in decreased allergy symptoms), increased force of contraction of the heart, relaxation of the arteries and other smooth muscles, increased thyroid function, and increased lipolysis (fat burning) (Fig. 1).

A number of diseases are characterized, in part, by decreased intracellular levels of cyclic AMP. These include: asthma, eczema, psoriasis, angina, obesity and hypertension. In addition to its adenylyl cyclase-stimulating actions, forskolin also appears to have actions that are not due to this mechanism, but are due to its ability to alter a number of membrane transport proteins.¹

Asthma and Allergies

Many drugs used to treat asthma and allergies are designed to increase cAMP levels. Usually they inhibit the enzyme (phosphodiesterase) that breaks down cAMP. This mechanism is the “flip side” of forskolin’s, which acts directly to increase cAMP. Thus, forskolin can be used by itself, or in addition to phosphodiesterase-inhibiting drugs in the prevention and treatment of many allergic conditions, including asthma.

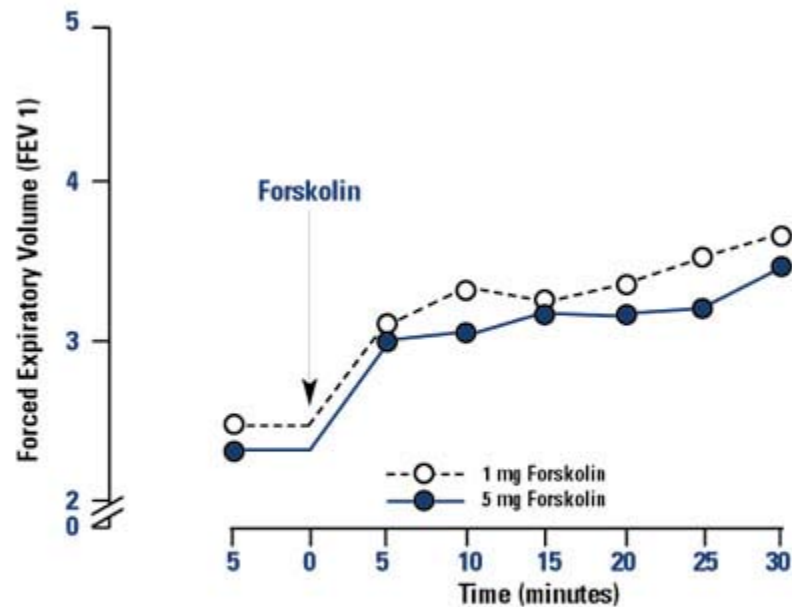


Fig. 2. Effect of forskolin on Forced Expiratory Volume in 1 second (FEV1) in asthmatics. After induction of asthma in six male asthmatics, 1 mg of forskolin was administered via a nebulizer. Note the dramatic increase in FEV1. (Lichey, et al, 1984).

Forskolin is an effective smooth muscle relaxer, resulting in bronchodilation, decreased airway resistance, and increased vital capacity and forced expiratory volume (important indicators of pulmonary function) (Fig 2). Forskolin also has tremendous anti-spasmodic action on various smooth muscles in the body, making it useful to relieve intestinal colic, uterine cramps, painful urination, angina, and hypertension.

Cardiovascular Effects of Forskolin

Coleus forskohli has traditionally been used to treat hypertension, congestive heart failure, and angina. Treating these conditions may be among the most useful uses for forskolin. Forskolin's basic cardiovascular action is to lower blood pressure, while simultaneously increasing the contractility of the heart. This is believed to be due to forskolin's cAMP-elevating ability, which results in relaxation of the arteries, and increased force of contraction of the heart muscle. One study involved seven patients with dilated cardiomyopathy—a particularly difficult condition to treat. Forskolin administration dramatically improved left ventricular function and overall cardiovascular performance.

Forskolin also increases cerebral blood flow, indicating that it may be beneficial in cerebral vascular insufficiency, and in enhancing post-stroke recovery. The platelet aggregation-inhibiting effects of forskolin also add to its value in cardiovascular disorders.

Glaucoma and Increased Intraocular Pressure

Glaucoma is a cause of visual loss characterized by nerve damage (usually associated with increased intraocular pressure), loss of visual field, glare, and sometimes pain. It is one of the leading causes of blindness in the elderly. Unfortunately, there is very little in the armamentarium of alternative health care practitioners that is effective in preventing or treating this poorly understood condition. However, a number of studies have shown that topical application of one percent forskolin eye drops resulted in significant decreases in intraocular pressure for up to five hours (Fig. 3). Researchers believe that it is the cAMP-elevating effects of forskolin that result in this significant improvement. Unfortunately, no commercial forskolin eye drops have been developed at this time. Although clinical experience is limited, oral forskolin appears to offer significant potential for sufferers of glaucoma or intraocular hypertension, and may be a major advance in the non-drug treatment of this condition.

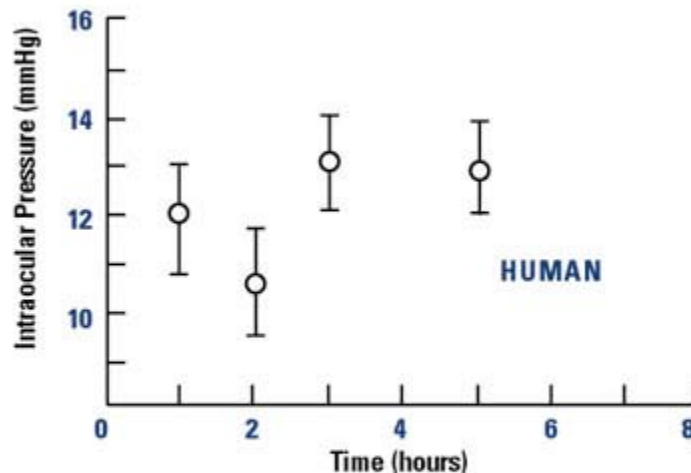


Fig. 3. Reduction in intraocular pressure versus time in humans, following topical application of 50 microliters of 1% forskolin solution (Caprioli, et al, 1984).

Psoriasis

Psoriasis is characterized by a relative decrease in cAMP compared to another second messenger, cyclic guanine monophosphate (cGMP). This imbalance results in a tremendous increase in cell division. In psoriasis, cells divide about 1,000 times faster than normal. Forskolin helps to alleviate psoriasis by normalizing the cAMP /cGMP ratio. (It should be noted that Fumaric Acid, by itself, is highly effective in the prevention and

treatment of psoriasis. However, forskolin and Evening Primrose Oil may both be considered as additional substances to be added to a regimen to treat this particularly vexatious disease.)

Depression

Depression is believed to be due to an imbalance of neurotransmitters in the brain — most commonly either serotonergic (inhibitory) or dopaminergic (stimulatory). The response to various antidepressants depends on which neurotransmitter system has deviated farthest from the “norm.” If the serotonergic neurotransmitters are most deficient, serotonin precursors like 5-HTP or L-tryptophan, or the selective serotonin reuptake inhibitors (SSRI) like Paxil, Prozac, or Zoloft are most likely to be of help. If the dopaminergic (i.e., catecholamines like epinephrine or noradrenaline) neurotransmitters are deficient, catecholamine precursors like the amino acids L-Phenylalanine or L-Tyrosine, or monoamine oxidase inhibitors like GeroVital (GH3) or Deprenyl are most likely to help.

German scientists have been working with a different approach to elevating catecholamines, using a class of drugs that stimulate both the presynaptic as well as the postsynaptic components of catecholaminergic transmission. This novel approach uses a drug, rolipram, which acts by increasing cAMP (an action similar to that of forskolin), and inhibiting phosphodiesterase.

Although the researchers stopped short of recommending forskolin for the treatment of depression, they stated clearly that “elevated brain cAMP levels are closely linked to antidepressant activity in animal models of depression.”

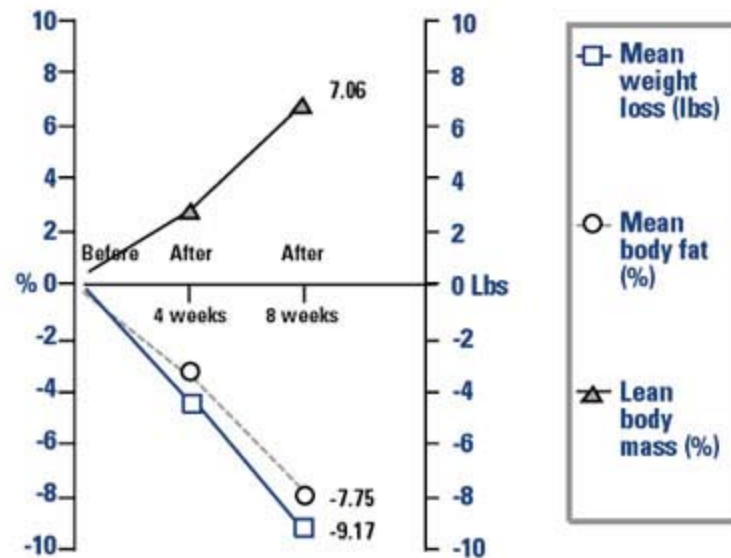


Fig. 4. Effect of forskolin on body weight, body fat, and lean body mass during 8 weeks (Badmaev, et al, 2001).

Weight Loss

In vitro studies show that forskolin stimulates lipolysis (breaking down of fats) in fat cells. Additionally, scientists at the Penn State University College of Medicine have found that many obese people have lower than normal cAMP production. Based on these findings and in vitro studies, scientists theorized that forskolin might be an effective weight loss agent, especially for those with impaired cAMP production. A recent small study appeared to confirm this conjecture. Six overweight women took 25 mg of forskolin (250 mg capsules of 10% standardized forskolin extract) twice daily for eight weeks. At the end of the eight-week trial, the participants lost a mean of ten pounds, and reduced their percentage of body fat by nearly 8% (Fig. 4). Blood pressure levels also trended lower during the trial. These preliminary results indicate that forskolin may be a safe, useful adjunct to losing weight and maintaining normal body composition.

Hypothyroidism

Forskolin also has demonstrated the ability to increase thyroid hormone production and stimulate thyroid hormone release. This mechanism of stimulating the thyroid to enhance metabolism may be one way in which forskolin promotes normal body weight. Forskolin's effects in normalizing thyroid function may also contribute to its antidepressant effects, as depression is a common feature of hypothyroidism.

Cancer Metastases

Scientists at Brown University confirmed that forskolin is a potent inhibitor

of platelet aggregation, as well as being a potent inhibitor of tumor colonization in mice. They suggested that forskolin could find a place in the prevention of tumor metastases.

Immune Enhancement

Forskolin also exhibits potent immune system enhancement by activating macrophages and lymphocytes.

Dosage

Based on the human studies for weight loss, 50 to 100 mg of forskolin taken in divided doses during the day appears to be a safe, effective dose for the conditions discussed above.

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Introducing Improved, Vegetable-Derived UniZyme™ Anti-Inflammatory Formula

VRP is pleased to announce the introduction of a new and improved version of our premier anti-inflammatory formula, UniZyme. UniZyme has been enhanced in several ways. Most noticeably, the animal-based enzymes contained in the original formula have been replaced with a non-

animal proteolytic enzyme blend. The addition of these highly concentrated plant-based enzymes makes UniZyme a perfect choice for anyone desirous of avoiding animal-derived products.

Additionally, UniZyme has been enhanced by the addition of a state-of-the-art micro-enteric coating process to insure that key enzymes survive the harsh transit through the gut to reach the small intestine. These changes greatly enhance delivery and absorption of these powerful enzymes for longer-lasting and more potent anti-inflammatory benefits.

Proteolytic Enzymes

Enzymes orchestrate countless biochemical reactions in the body, including regulating inflammation and other immune functions. Inflammation, a primary mechanism whereby the body protects itself against danger, causes discomfort in the form of (1.) Redness; (2.) Heat; (3.) Swelling; (4.) Pain; and (5.) Restriction of movement.

Proteolytic (protein-destroying) enzymes, such as bromelain, papain, and rutin, are essential regulators of the inflammatory response. Proteolytic enzymes increase the "appetite" of macrophages and enhance the potency of natural killer (NK) cells. Proteolytic enzymes also degrade pathogenic complexes that inhibit normal immune function while reducing swelling, decreasing capillary permeability, and dissolving fibrin deposits that lead to blood clots.

By reducing the viscosity (thickness) of the blood, enzymes also improve circulation and increase the supply of oxygen and nutrients to traumatized tissues. Proteolytic enzymes also break down plasma proteins and cellular debris at the site of an injury to greatly reduce swelling and relieve pain and discomfort.

Vegetarian Enzymes versus Animal-Derived Enzymes

Historically proteolytic enzyme preparations have contained animal-derived pancreatic enzymes that act as activators in these blends.

Our new UniZyme formula replaces animal-based pancreatic enzymes with Serrapeptase, a non-animal enzyme with greater power and broader pH stability than pancreatic enzymes. Serrapeptase is derived from bacteria that reside in silk worms. Silk worms use the protein dissolving power of serrapeptase to break down the cocoon.

UniZyme also contains Papain, a proteolytic enzyme derived from green papaya fruit, and Bromelain, which is produced from pineapple stems and fruit. Both bromelain and papain exhibit a spectrum of activity for peptide bonds over a broad pH range.

UniZyme combines these powerful enzymes with Amylase (a bacterial enzyme produced from a strain of *Bacillus subtilis*), and the fungal enzyme

lipase (produced from a strain of *Aspergillus Niger*). These fungal and bacterial enzymes contained in the new UniZyme formula were unavailable in the 1960s. They exhibit greater potency and function faster and more effectively than the traditional animal enzymes found in most anti-inflammatory formulas.

The new UniZyme formula also contains doses of Amylase and Amla, derived from natural gooseberry. This unique berry gives very synergistic support to enzymatic activity. It also contains Rutin, which has proven to help in repair of damaged tissue. Thus, this is a unique formulation, which can be very helpful for athletes with tissue and muscle damage.

Proteolytic Enzymes versus Anti-Inflammatory Drugs

Italian researchers have shown that the ability of proteolytic enzymes to reduce inflammation is equal to or superior to four powerful steroidal and non-steroidal anti-inflammatory drugs: Phenylbutazone, Hydrocortisone, Indomethacin, and Acetylsalicylic Acid.¹

Conclusion

Every activity in the body, from building tissues to converting food into energy, requires enzymes. Depletion of the body's enzyme capacity can result from numerous challenges, including injuries, inflammation, indigestion, immune deficiency, and degenerative diseases like cancer, cardiovascular disease and infection. Unlike common medicinal products that temporarily relieve some problems, enzymes address the dominant underlying causes of many disease states.

Although individual proteolytic enzymes are useful, it is the extraordinary combination of these select enzymes that yields a combined effect that is greater than its sum. Systemic multi-enzyme therapy has proved helpful in cases of arthritis and related diseases, offering a wide range of benefits relative to anti-inflammatory, vasculoprotective, and immuno-modulatory effects.

UniZyme has been reformulated with a non-animal proteolytic enzyme blend that will appeal to vegetarians as well as others seeking relief from inflammatory conditions. Additional nutrients contribute to enhancing the anti-inflammatory benefits of UniZyme.

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Congress, FDA and European Union Threaten Access to Dietary Supplements

Health Freedom in Jeopardy, Immediate Action Required

by Robert Watson

Imagine a world where buying a bottle of chromium picolinate, boron, or vanadyl sulfate will land you in jail. A world where it's impossible to obtain the safe and beneficial supplements you've been consuming for years. A world where the potency of multivitamins is so watered down as to render them nearly ineffective.

While this scenario sounds like a bad dream, it could indeed represent a bleak future reality if the FDA and the European Union get their way. In fact, your ability to obtain safe and health-promoting dietary supplements has never been more in jeopardy, due to a bill in Congress (the Dietary Supplement Safety Act S.722) and a European Union law.

DSHEA Under Fire

When President Clinton signed the Dietary Supplements Health and Education Act (DSHEA) into law in 1994, it was hailed as a victory for consumers who want freedom to make informed decisions about their own health. From the moment DSHEA was passed, the FDA has been eager to overturn the law.

According to Allan Spreen, M.D., "I'm convinced the Dietary Supplement Safety Act is merely a stepping stone to complete control. The FDA has been very upset about the passage of DSHEA specifically designed to help protect the supplement industry from unnecessary constraints. I think the FDA will piecemeal DSHEA away as fast as possible, if possible (and I believe it is)."

S.722, sponsored by Senator Dick Durbin (D-IL), and co-sponsored with Senators Clinton (D-NY) and Feinstein (D-CA), provides the FDA with the perfect ammunition to undermine DSHEA and your ability to purchase supplements along with it. Don't be fooled by the name of the bill—The Dietary Supplement Safety Act of 2003. The only thing the bill is designed to safeguard is the financial profits of the pharmaceutical companies.

Under the proposed law, if only one serious adverse reaction complaint is filed for a supplement, the FDA can pull a supplement from the market. This will hold true even if the complaint filed is by someone who ignored the instructions, warnings, and contraindications of the manufacturer. Once the FDA deems a supplement worthy of removal from the market, the burden will be placed on the manufacturer to prove the supplement's safety. This costly process will probably drive some smaller vitamin manufacturers out of business.

The proposed law requires that the FDA determine the safety standards the supplement must meet. In effect, the FDA will take total control, instituting a nutritional dictatorship whereby vitamin manufacturers fight a losing battle.

Currently, the FDA has a sufficient amount of jurisdiction over the supplement industry. It is able to protect the public from unsafe or illegal dietary supplements. It can regulate the types of ingredients used in dietary supplements, the potency and purity of those ingredients, and the claims that can be made on behalf of these products. If S.722 passes, the level of scrutiny supplements will be subjected to is unwarranted and not even necessary to protect consumers' health.

In effect, S.722 will destroy everything that DSHEA created.

More Favorable Bill

While S.722 sits poised to dismantle DSHEA, Senators Tom Harkin (D-IA) and Orrin Hatch (R-UT) introduced a more health-freedom friendly bill, the "DSHEA Full Implementation and Enforcement Act" (S.1538). Passage of this bill will ensure the FDA has the funding it needs to enforce DSHEA in the way Congress—and the American people—intended. S.1538 will double the funding given to the Office of Dietary Supplements to expand research and consumer information about dietary supplements. In addition, if the bill becomes law, it will require the FDA to file annual reports to Congress about how they are regulating dietary supplements. If the FDA fails in its responsibilities to fully implement the law, it will be held accountable.

S.722 paints a bleak picture for those of us who depend on nutritional supplements to maintain a high quality of life. S.1538, on the other hand, ensures that the current level of health freedom will remain in place.

Together, we can help ensure that our right to obtain dietary supplements will always remain cemented firmly in place. Immediately let your Senators know that you support S.1538 and ask them to co-sponsor the bill. In addition, ask them to oppose S.722. You can contact your senators by calling the Capitol Hill switchboard at (202) 224-3121 or find direct numbers on The National Nutritional Foods Association's (NNFA) online Advocacy Action Center at www.nnfa.org. When you contact your Senator's office, ask to speak with the staff member in charge of health-related issues. You can also e-mail your Senators by visiting NNFA's Advocacy Action Center at www.nnfa.org.

Another Threat to Health Freedom

At the same time S.722 threatens our Health Freedom, the European Union Food Supplements Directive is poised to deliver an equally brutal blow to Health Freedom in the United States and abroad. The European Union nations were required to abide by the Food and Supplement Directive beginning in July 2003 unless the lawsuit filed by the United Kingdom's

Alliance for Natural Health (a health freedom organization composed principally of scientists and lawyers) is successful.

The Food Supplements Directive will permit the manufacture of only 15 out of the more than 60 minerals important in human metabolism. Although consumers will be permitted to consume 13 key vitamins on the “positive list,” they will not be able to obtain the bioavailable forms of vitamin complexes. For example, the directive bans any chelated or other organically complexed mineral forms such as selenomethionine. In addition, it only permits the alpha-tocopherols form of Vitamin E, but excludes a mixture of tocopherols as found in nature. In other cases, important minerals, such as boron, sulfur, and vanadium, would not be allowed in supplements.

Worst-case scenario? The Alliance for Natural Health’s lawsuit fails. Then the Food Supplements Directive goes into full effect. At this point, since the U.S. is a member of the World Trade Organization, any supplement laws in effect in the U.S. may be forced to harmonize with those of the European Union. In other words, DSHEA may become null and void, replaced with a law similar to that of the European Union, a law that, like S.722, will take away your right to obtain some of the most vital and basic nutrients necessary for health.

Therefore, it is crucial that we support the United Kingdom’s Alliance for Natural Health in their efforts to oppose the Food Supplements Directive and to restore an acceptable level of health freedom. It is vital we prevent the European directive from taking back everything we achieved with DSHEA. You can support the Alliance for Natural Health in their lawsuit by offering a donation at their web site <http://www.alliance-natural-health.org>.

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All-Natural, Plant-Derived Vegetarian Material **Hydroxy-methyl...What?**

In April of 2001, VRP began to switch our entire line of encapsulated supplements over to a new, all-natural, plant-based capsule. VRP had spent years looking for an alternative to the beef-derived gelatin capsules that are the staple of the pharmaceutical and nutritional industries. When vegetable-based capsules finally became available, VRP was one of the first nutritional manufacturers to commit to converting our entire supplement line, and the timing couldn’t have been better, as anxiety about animal-based products was running particularly high with our European clients.

Hydroxy, Propyl, Methyl...What?

One of the unintended (and unanticipated) side effects following the introduction of V-Caps has been some confusion (and raised eyebrows) from clients who call wanting to know why something called “hydroxy propyl methyl cellulose” is in our formulas. And given the highly complex and technical name, it’s only natural that some clients might be concerned. As it turns out, hydroxypropylmethylcellulose (HPMC) is a completely natural, commonly used cellulose raw material that is 100% plant-derived. In addition to providing the combination of flexibility and strength that perfectly meets the unique requirements of vegetarian capsules, HPMC also offers a wide range of pharmaceutical applications. Ongoing research is exploring its use in applications ranging from adhering lens implants during eye surgery to delivering pharmaceutical drugs in a time-delayed viscoelastic matrix. HPMC has also shown surprising promise as a cholesterol-lowering agent.

HPMC Lowers Cholesterol

In one study published in the journal Nutrition, researchers found that HPMC shared certain characteristics with soluble fibers. In particular, HPMC was found to exert a lipid-lowering effect. This finding supported an earlier study that suggested that HPMC was a potential agent for lowering cholesterol in patients with mild to moderate hypercholesterolemia. In fact, that study found that HPMC significantly lowered both LDL and total cholesterol levels in as little as 4 weeks, leading the study authors to state that, “...HPMC is a well-tolerated and effective adjunct to diet for lowering LDL cholesterol in patients with mild to moderate hypercholesterolemia.”

Conclusion

While the amount of HPMC contained in V-Caps is unlikely to have much impact on cholesterol levels, this natural substance is both safe and beneficial. And as this brief glance at just a few of the many studies being conducted with HPMC indicate, the potential for discovering more promising health benefits is very high.

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Customers' Corner

by Ward Dean, MD

VRP Medical Director and Director, Research & Development

Help with Osteoporosis

Dear Dr. Dean,

I currently use VRP's **Osteoflavone Complex**. My doctor recommends that I take Fosamax to stop my bone loss (osteoporosis). She says Fosamax is safe and knows of no known complications. I want to know your opinion of its use and safety.

My doctor also doesn't recommend the use of isoflavones, which she says are not tested enough for safety, whereas Fosamax has been tested and proven for years. Also, what is your opinion on Evista for bone loss? Any information would be appreciated.

Thanks, Mrs. W.

Dear Mrs. W.,

Fosamax appears to be useful in increasing bone density and reducing the risk of vertebral and hip fractures. However, it is not as completely safe as your physician indicated. It is associated with a risk of esophageal and gastrointestinal bleeding and erosion. This is especially so in people who have problems with gastrointestinal motility. Ask your physician to read the package insert or PDR.

However, I do recommend other substances for osteoporosis, including VRP's **Osteoflavone Complex**, and **Essential Minerals** or **Advanced Essential Minerals** (these products were formulated using the recommendations from Dr. Alan Gaby's book, *Preventing and Reversing Osteoporosis*). Also, **Xylitol** (human dose, 40 gm daily, about 8 teaspoons) has been demonstrated to stop bone loss in experimental animals, and will likely have the same effect in humans.

I'd also suggest Progesterone Cream, as recommended by Dr. John Lee, and low dose **DHEA**. **DHEA** is converted very efficiently to testosterone in women. Testosterone and other anabolic steroids have shown an ability to safely reverse bone loss. I'd suggest starting with **DHEA** 10 mg every morning, and increase to 25 mg. If you experience androgenic effects (facial hair, voice deepening), just reduce the dose, as these effects are reversible with a decrease in the dosage.

I don't have any experience with Evista, but it has been reported to result in increased risk of thromboembolic disease.

Hope this information helps.

Ward Dean, MD

Coping with Sarcoidosis

Dear Dr. Dean,

I've had sarcoidosis for over 15 years and have been routinely treated by a specialist for over 5 years with Flovent and medication. I read your article in the September 2003 issue of *Vitamin Research News* on **Beta 1,3-D Glucan**. Every time my immune system is down, due to a virus, flu, etc., my sarcoidosis reacts and I must go on prednisone in addition to my other medication. I was wondering if **Beta 1,3-D Glucan** would be safe for me and may help me with my sarcoidosis.

Sincerely, Mr. L.

Dear Mr. L.,

I agree that **Beta Glucan's** immune-enhancing effects may help. Also, consider **Thymic Protein A** as a potent immune normalizer. I think two envelopes of **Thymic Protein A** per week may be adequate for normal preventive use, increasing to one envelope daily if you acquire an infection.

To protect/treat yourself from colds and flu, I recommend using a cool mist humidifier, filled with one bottle of 3 percent hydrogen peroxide, and two bottles of water. This will produce a 1 percent aerosolized solution of hydrogen peroxide, which will kill microorganisms on contact, and which breaks down into oxygen and water. This may reduce the incidence and severity of respiratory infections, and also your requirement for the immune-suppressing effects of prednisone.

Also, I'd suggest **AdaptaPhase I** to increase your body's ability to adapt to stress of any kind, including infections. **AdaptaPhase I** should also reduce your requirement for prednisone.

Calcium AEP has been of benefit to patients with COPD, emphysema, and other respiratory disorders, and may help in sarcoidosis.

Hope these suggestions help. Please let me know how you do.

Ward Dean, MD

Eggs and Cholesterol

Dear Dr. Dean,

In the September issue of *Vitamin Research News* you recommended to a reader to add eggs to their diet to help lower cholesterol and triglycerides. I have been eating eggs for over a year and have seen the benefits in lowering my own cholesterol levels. You recommended not to hard-cook the yolks. I've never liked runny yolks. Why is it bad to hard cook them? Is it the same problem whether they are fried, scrambled or boiled? Also I often

throw away one yolk when eating two eggs since most of the cholesterol is in the yolk. Would you agree this is beneficial? Please comment.

Thanks, Mr. G.

Dear Mr. G.,

Hard-cooking the yolks oxidizes the cholesterol in the yolk, which may result in elevation of blood cholesterol (but that's just something I read—it may not be true). The study I've seen of the cholesterol-lowering effects of nursing home patients given two eggs per day didn't discuss how they were cooked. Anyway, I just soft-scramble the eggs, so the yolks aren't runny, but not completely cooked, either.

I don't think it's necessary to throw away the yolks. Although all of the cholesterol in an egg is in the yolk, the yolk also contains protein, lecithin, carotenes, and B vitamins. Lecithin and other phospholipids help to mobilize the cholesterol. Cholesterol is a vital constituent of cell membranes, and is the building block for all steroid hormones in the body. So my recommendation is to eat the yolk as well.

Ward Dean, MD

Vertebral Compression Fracture

Dear Dr. Dean,

About 5 weeks ago my 15-year-old son had an accident while lifting weights. The doctor said he compressed two vertebrae. He said since he is so young, the vertebrae should heal and he will be able to do whatever he did before. He is not a body builder, but he was trying to build muscle to prepare for the basketball season, which starts in November.

Right now he takes quite a few of your vitamins. He takes the following: **Extend Core, Bioflavonoid Complex, Opti-Mag, Beta 1,3-D Glucan**, Calcium, and **Garlic Extract**. He is taking **Amino Edge** after each workout, and **Perform-Edge** before each workout. Of course, now he is not working out with weights. He is still trying to stay fit to be ready for the basketball season this year when the doctors release him to play. The only exercise he is doing now is swimming, and he is doing that six times each week for approximately one hour each session.

My question is what else, if anything, can he do? Is **Osteoflavone Complex** a good supplement to take for him? I take it, but I am 55 years old. I would appreciate any help you can give us. He goes back to the doctor soon for what we hope will be his final visit.

Thank you, Mrs. T.

Dear Mrs. T.,

First, I think it's great that he is swimming. It's a low-impact sport that will maintain his cardiovascular fitness, and not compress the spine.

I'd suggest adding **Nutri-Joint** (in case there is any disk involvement), **Essential Minerals** (these are specifically formulated as a bone-forming formula), and **Xylitol**. **Xylitol** has been demonstrated to stop bone loss in older animals by enhancing vitamin D3 receptor sensitivity—it may help with fracture healing in younger people as well.

Also, perhaps consider one of VRP's growth hormone releasing combinations of amino acids (i.e., **Performance Plus**, **APG/Lysine Caps**, or **MGHR Day** and **MGHR Night**). Although the research for the efficacy of these formulas is spotty, if they are going to do anything, I think they will have the best chance of working in young people. Elevated levels of growth hormone should accelerate bone healing.

Ward Dean, MD

Missing Sex

Dear Dr. Dean,

My concern is my partner. He is a wonderful man and loves me very much. The problem is that we have zero sex. He is currently taking supplements and gets hGH injections and testosterone on a regular basis. He follows his daily regimen of vitamins and has been to your seminars. As a matter of fact I found out about your programs by reading a magazine that he had received from you. The only thing else is that he drinks white wine every evening to help him get to sleep. When I ask him about the lack of intimacy (kindly) he gets angry. He will only say "Don't touch me," or "is that all you think about?" I am 50 and he is 48. I tell him that if there is a physical problem that I will love him anyway. He still gets very defensive.

Is there any way to correct this, or do you have any ideas on what to do? Is this normal? I feel undesirable because of this and I know that I am not ugly. He says that everything works just fine and that he is not gay.

But.....NO SEX AT ALL, WHATSOEVER!!! HELP!

Ms. N.S.

Dear Ms. N.S.,

Impotence is a problem that presents with increasing frequency as age advances. Your partner is understandably defensive if he is impotent at this relatively early age. There are a number of causes—some of which may be treatable. If he is getting testosterone injections, he's probably concerned enough to have discussed this with his physician. Viagra or the new ED

drug, Levitra, may help, but they are expensive, and most patients request them in whispers. They don't want to admit that they need the help.

A regimen that provides the nutritional equivalent of Viagra is a combination of **L-Arginine**, **Choline**, and **B-5**. This combination is a key part of VRP's **Natural Libido Enhancer**. However, considering your partner's sensitivity on this issue, you might try Durk and Sandy's Pro-Formance, which is marketed as a "Sports Formula," but includes the above 3 ingredients. **Tribulus Terrestris** may also be added, under the pretense of enhancing the efficacy of his testosterone injections. If he is diabetic, the problem may be poor blood flow. **Oral ChelatoRx**, over time, may improve circulation to the entire body.

Unfortunately, if the problem is psychological, I'm at a loss as to what to do. Good luck.

Ward Dean, MD

Timing of AndroSpray

Dear Dr. Dean,
I currently use AndroSpray, but I'm not used to taking sublingual products. After I spray 8-12 times I've accumulated a lot of liquid under my tongue. How long do I hold it there? If I swallow immediately I fear it won't have had time to be absorbed.

Mr. R.

Dear Mr. R.,
You're absolutely correct — sublingual products take time to be absorbed. I wouldn't use more than one spray at a time for maximum absorption. Spray once, and then wait several minutes before spraying again.

Although the portion that you swallow is not "wasted," because it will be absorbed in the GI tract, it is most effective when absorbed sublingually, as it goes directly into the bloodstream, and avoids a "first pass" through the liver where some of it may be deactivated.

Ward Dean, MD

Glaucoma and Intraocular Pressure

Dear Dr. Dean,
I am 55-years-old and, while in generally good health, have glaucoma, with no optic nerve damage. My pressure has been high for about 4 to 5 years. I use Travatan and Timoptic-XE. My pressure stays at an average of 19 to 20. I have no glaucoma in my family. I have a question about the

Extension Vision formula. It includes **Taurine**, which is a sulfur containing amino acid. I had been given a sulfur drug for a kidney infection about 20 years ago and had an allergic reaction, rash, increased heart rate, etc.

Do you think I should stay away from the Taurine because of the sulfur?

Thank You, Ms. S.

Dear Ms. S.,

I think you are probably referring to a “Sulfa” drug. This is different from the naturally-occurring substance, “sulfur.” Eggs have a high sulfur content. Can you eat eggs? If you can eat eggs, you can consume **Taurine** (and **Extension Vision**) without concern.

Also, I suggest adding **Forskolin** to your regimen. **Forskolin** eye drops have been clinically tested to improve aqueous flow in the eye, and reduce intraocular pressure. Forskolin-containing eye drops have been used to reduce intraocular pressure in rabbits, monkeys and humans. Until the eye drops become available, I suggest that anyone with glaucoma or increased intraocular pressure add **Forskolin** to their daily supplement regimen (about 50-100 mg per day of the active substance).

Additionally, **Carnosine** eye drops have also been reported to be of benefit to those with glaucoma. All of the above nutritional recommendations should be taken in addition to—not instead of—your prescribed medications.

Ward Dean, MD

DHT and Healthy Hair Caps

Dear Dr. Dean,

I just started taking VRP’s **Healthy Hair Caps** to prevent testosterone from converting into DHT, and was wondering if inhibiting DHT has any negative effects. I know that a possible side effect of Propecia (which also inhibits DHT) is loss of libido and erectile function. Can **Healthy Hair Caps** do the same thing?

Also, I have read conflicting reports about the effects of DHT on muscle development. While some sources say DHT is necessary for promoting muscle development, others say that DHT is not required, just testosterone itself. I am a weightlifter and don’t want to negatively affect my gains. I also would like to begin using **AndroSpray** but wonder if **Healthy Hair Caps** will prevent the resulting testosterone from being converted into DHT as well? Please offer any advice you can, as so much of the information on the internet is contradictory.

Thanks, Mr. M.

Dear Mr. M.,

You ask some good questions. I too, have read the literature that the active form of testosterone is the DHT. I don't know if anyone can answer your questions definitively. We know that DHT-inhibiting drugs have a negative effect on libido in some (not all) men. Therefore, the only way to know is to try the product. Frankly, we have not had problems reported with reduced libido with either **Healthy Hair Caps** or **ProstaCol**—so I don't think it should be a problem. Likewise, I have not heard of any adverse reports from athletes or bodybuilders who have used these products.

If you use **AndroSpray** (or, for that matter, testosterone), I suggest taking additional **I3C (Indole-3-Carbinol)** or **BioDIM** to help rid your body of any excess estrogen that forms as a result. Also, there are some indications that **Resveratrol** may act as an aromatase inhibitor, and prevent testosterone from converting to estrogen.

Hope these suggestions help. Wish I had more definitive answers for you, but the research is just not there.

Ward Dean, MD

Carbs and Caloric Restriction

Dear Dr. Dean,

I just saw a new study that suggests that the benefits of calorie restriction may predominantly result from reduced insulin levels and that, accordingly, a diet such as Atkins, which reduces insulin levels by controlling carbohydrate consumption, seems a clear best dietary option.

Mr. B.

Dear Mr. B.,

Exactly. That's why we also recommend substances such as Metformin, and insulin receptor sensitizing substances that are in products like **GluControl™** and **AGE-Block™**.

Ward Dean, MD

PV Contractions and MV Prolapse

Dear Dr. Dean,

I have premature ventricular contractions and a pacemaker (resulting from a heart block experience). I also have mitral valve prolapse (mild to moderate). On the other hand, my lipid ratio is excellent as is my cholesterol. I do not have heart disease and I exercise heavily four times

weekly. I am athletically active.

I am looking at two of your products for heart support, **Cardio Care** and **Cardio Rhythm**. I note that **Cardio Care** has **Forskolin** but I do not have high blood pressure. Which product do you suggest—or, any other ideas.

Thanks, Mr. H.

Dear Mr. H.,

Considering your history and condition, if you had to make a choice, I'd say **Cardio Rhythm**. However, **Cardio Care** is another excellent product that might also be indicated—perhaps at a lower, “preventive” dose. **Forskolin** has many other effects besides its potential effects on blood pressure. It promotes adenylate cyclase activity, which enhances hormonal and neurotransmitter effects (see article on front page).

Your previous heart block, PVCs, and the requirement for a pacemaker indicate some form of neurological dysfunction in the conducting system—for whatever reason (vascular, neurological, etc). Perhaps **Calcium AEP** and **Phosphatidylserine** may have protective effects in this regard.

Ward Dean, MD

ALS (Lou Gehrig's Disease)

Dear Dr. Dean,

My 76-year-old father has just been diagnosed with ALS (Amyotrophic Lateral Sclerosis) by the Mayo Clinic in Jacksonville, FL. Up until 9 months ago he was in good health, walked two miles a day, played golf, traveled, etc. Now he can't walk without a walker, has fallen down several times, has difficulty swallowing and all the other signs and symptoms of ALS.

According to his doctors and all of the information that we have gathered it appears that there is virtually no treatment available for him. Not to burden you with dead end questions, but if you could address a few for me it would be appreciated.

1. How exactly does ALS destroy motor neurons?
2. Would antioxidants slow his progression of ALS?
3. Since this disease may be familial, should I or my sons start a specific regimen of supplements above and beyond what we are already doing as basics?

Any suggestions to assist my father in his last days are appreciated.

Mr. H.

Dear Mr. H.,

I wish I could answer your questions with specificity. Unfortunately, very little is known regarding the cause or cure of ALS. Nevertheless, here are some suggestions:

First, several substances have recently been reported to be of benefit in ALS — **Creatine** and **L-Carnitine**. Perhaps not coincidentally, these are also key ingredients in VRP's **Mito Boost I** and **II**. In fact, there may be a mitochondrial component to ALS, so the additional mitochondrial-supporting ingredients in these formulas (plus additional **CoQ10**) may work together to help alleviate ALS symptoms.

Second, because ALS is also likely to be autoimmune related, I suggest **Thymic Protein A** (TPA). TPA has been helpful in a number of other immune-related conditions like lupus, MS, and Sjogren's syndrome. Some symptoms of Sjogren's syndrome occur with ALS, so TPA may likewise be helpful in ALS.

Other substances that may help include **Vitamin B12** (either as weekly injections or as daily sublingual drops), **Phosphatidylserine** (or the less expensive **Seri-Phos**), and **Calcium AEP**. **DHEA** and **Turmeric** may help as well.

Obviously, most of the above suggestions are guesses, based on their mechanisms of action, and complete lack of toxicity. I have had only one ALS patient, and she has benefited to a greater or lesser extent from the above-recommended substances.

Ward Dean, MD

Strontium Query

Dear Dr. Dean,

The role of strontium in promoting bones and a skeletal system with high bone mass density has been brought to my attention. I am personally involved by my recent accident where I only fractured two ribs, and by my current study of the role strontium has on mitochondria. In addition, health newsletters have been discussing the recent renewed studies of strontium and osteoporosis by European researchers. Does VRP have any products that contain strontium? What is your perspective on strontium?

H.B.

Dear Mr. B.,

Thanks for bringing these recent studies to my attention. I was aware of some interesting research regarding strontium from the '50s through the

late '80s, but guess I was scared off by the memories of the concern about radioactive Strontium 90.

I recently reviewed the relationship between strontium and bone growth, and its relationship to osteoporosis. VRP will be adding strontium to several products in the near future—most likely to our multi-mineral formulas (**Essential Minerals** and **Advanced Essential Minerals**) and to **OsteoFlavone Complex**.

Thanks again for ringing my bell with regard to strontium.

Ward Dean, MD

Red Yeast Rice and Niaspan

Dear Dr. Dean,

I read your article about **Red Yeast Rice Extract** in our local paper this morning. I'm 64 and I've had a problem with my cholesterol and triglyceride levels for years. I'm interested in taking Red Yeast Rice along with Niaspan but don't know what dosage to take. Can a person overdose on Niaspan and Red Yeast Rice?

Thank you, Ms. V.

Dear Ms. V.,

Of course, it's possible to "overdose" on anything, but you're not likely to overdose on these two substances when taken in recommended amounts. **Niacin** and **Red Yeast Rice Extract** can be taken together — in fact, we incorporate them together in one of our formulas (**LipiControl**).

You might just try bumping up the niacin. If that doesn't do the job, add the recommended dose of **Red Yeast Rice Extract** (or just switch to **LipiControl**).

Ward Dean, MD

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Nutrition Review

Black Cohosh Safely Relieves "Hot Flashes"

Following reports of increased risks of breast cancer and stroke from traditional estrogen replacement therapy, many women have been looking

for alternatives to ease hot flashes, night sweats and other symptoms of menopause. Now a new study has found that the herb black cohosh acts to reduce hot flashes, not by targeting estrogen receptors, but by binding to serotonin receptors that are used by the brain to help regulate body temperature.

Presenting their findings at a meeting of the American Chemical Society, researchers from the University of Illinois reported that “This study shows that black cohosh does not appear to be estrogenic whatsoever and, as a result, is less likely to pose some of the dangers associated with traditional estrogen replacement therapy.”

After discovering that black cohosh has no estrogenic effects, the researchers showed that the black cohosh extract is capable of binding to human serotonin receptors, including those that help regulate body temperature. Previous studies have shown that these receptors may play a role in regulating hot flashes.

A Phase II clinical trial involving women with a high frequency of hot flashes is currently underway to determine whether black cohosh actually reduces the frequency and intensity of hot flashes and other menopausal symptoms. Women will either receive black cohosh, red clover, a placebo or estrogen replacement during the one-year NIH-funded trial.

Journal of Agricultural and Food Chemistry, Sept. 10, 2003.

Modified “Sticky” Protein Halts Spread of Cancer

Researchers in the US and Sweden have slowed the spread of human breast cancer cells in mice treated with a modified form of protein, galectin-3, that aids cancerous cells in lodging in other parts of the body. It's when tumors spread to essential organs, such as the liver or lung, that they become fatal.

Galectin-3 plays a vital role in cancer formation by promoting cell-to-cell adhesion. “The idea was to break that contact and inhibit secondary cancer formation,” stated Gary Jarvis of the University of California in San Francisco. “If we can stop metastasis in humans, we will have gone a long way towards successfully treating cancer.” His team removed the key part of galectin-3 that normally allows cells to stick to each other. The modified protein also occupies the site on a cell's surface blocking normal galectin-3 from binding. This stops cells from adhering to each other.

“We were able to significantly reduce the spread of the disease and decrease tumor growth without any evidence of toxicity,” according to Jarvis. The modified protein more than halved the number of mice that developed metastatic tumors. The growth of the implanted tumors was also

significantly less in mice treated with the modified protein compared to the control mice. "It's not only affecting metastasis, it's reducing the primary tumor a lot."

"We're not trying to develop a cure for cancer," says Jarvis. "What we're trying to do is make cancer a disease that one can live with."

Clin Cancer Res. 2003 Jun;9(6):2374-83.

Increasing Calcium Intake Normalizes Blood Pressure

Analysis of data from a nutritional study of more than 20,000 Americans indicates that mineral intake — especially calcium — contributes to blood pressure control and "is actually more important than sodium intake," said senior investigator David A. McCarron, MD, department of nutrition, University of California, Davis, California. McCarron presented his findings at the High Blood Pressure Research Council 57th Annual Conference in September. "In hypertension, we are always talking about what we need to take away from the diet," he said. "But, it appears that adding to the diet is probably more important." When the diet is "balanced with no deficit in minerals, salt is not a problem. Salt becomes a problem when the diet is calcium deficient. Specifically, as calcium intake increases, blood pressure decreases."

McCarron and colleagues used data from the National Health and Nutrition Examination Surveys (NHANES) collected between 1980 and 2000 from 20,050 volunteers aged 20 to 74. In addition to blood pressure measurements, NHANES collects data from 24-hour dietary intake of sodium, calcium and total mineral (calcium, magnesium and potassium) intake. Their analysis found no relationship between sodium intake and blood pressure. "High sodium intake was associated with high blood pressure only when diet quality was poor." Thus, "salt sensitivity is more likely to be a marker of poor diet than of a predisposition to hypertension," suggesting that "when treating high blood pressure we should...tell patients what they can eat rather than what they can't eat."

BP Effects of Dietary Sodium are Dependent on Mineral Intake: Analysis of NHANES III and IV. Abstract P182.

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